

# 40<sup>th</sup> Annual International Conference of the IEEE Engineering in Medicine and Biology Society



July 17-21 2018

Hawaii Convention Center  
Honolulu, Hawaii

Conference Chairs

James Weiland  
Michelle Khine

Program Chairs

Greg Suaning  
Olaf Doessel



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# Partnership Acknowledgements

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CHINESE ACADEMY OF SCIENCES



## President's Welcome Message



**Nigel Lovell**

Scientia Professor and Head, Graduate School of Biomedical Engineering  
UNSW Sydney, NSW Australia.

**Engineering in Biology and Medicine Society**

2017-2018 EMBS President  
[president@embs.org](mailto:president@embs.org)

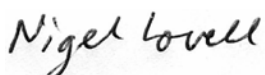
It is my great pleasure and honor to welcome you to the 40<sup>th</sup> Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBS) Conference. Our Flagship Annual Conference (known as EMBC) is a premier international event in biomedical engineering and has been strategically held in different locations around the world, including Jeju Island, Orlando, Milan, Chicago, Osaka, San Diego, Boston, Buenos Aires, Minneapolis, Vancouver over the last 10 years. Looking forward, our next events will be held in places such as Berlin, Montreal, Glasgow and Sydney.

This year's meeting is being held in Honolulu on the beautiful islands of Hawaii with the theme 'Learning from the Past, Looking to the Future'. Under the strong and dedicated leadership of Conference Chairs (Drs Jim Weiland, Michelle Khine) and Program Chairs (Drs Gregg Suaning, Olaf Doessel), the organizing committee has developed an exciting inter-disciplinary program. Multiple preconference workshops, special sessions and minisymposia discussing important biomedical engineering issues with academic researchers, clinicians, and research and development engineers are combined with traditional oral sessions and *ignite* poster sessions as platforms for presentation of over 2500 papers. In addition, there are lunchtime sessions to further promote, educate and expose students to the diverse field of biomedical engineering. The organizers have also successfully recruited an all-star roster of five keynote speakers and more than a dozen theme keynote speakers, who are leaders and pioneers within their respective fields from around the world.

All the submitted contributed papers were subject to peer review by the EMBS Conference Editorial Board (CEB), consisting of an international panel of experts, covering all areas of biomedical engineering. This resulted in a 25% rejection rate. Special thanks go to, Dr Jim Patton, Editor-in-Chief of the CEB, the associate editors and reviewers of the CEB, and all the staff of the EMBS Executive Office (Laura Wolf and Janice Sandler) for their outstanding service and contributions toward making this meeting possible.

EMBS continues to strive to provide a unique, effective platform for biomedical engineers to publish, present their research, network with industry, and to advance their professional careers. A major focus of EMBC'18 will be the engagement with the dozen eleven technical committees (TCs) that are the specialist expertise groups with which individual members can interact with aspects of the Society. We would welcome anyone who is interested to make themselves known to the TC Chairs that will be attending the conference and will present TC activities during the TC workshops. TCs have leading roles within EMBS, being strategically involved in EMBC and Special Topics Conferences, award nominations, editorial boards of EMBS journals and launching of new initiatives. Of special note is our Women in Engineering Luncheon, promoting diversity and inclusivity within EMBS – a major tenant of my presidency.

Again, welcome to EMBC'18. On behalf of EMBS we appreciate your participation and trust you will find this meeting intellectually stimulating, socially rewarding and culturally revealing. As always if you have comments or would like to be more involved in our society, please contact myself or the Executive Office.



Nigel Lovell, Ph.D., President EMBS, 2017 – 2018



## Welcome Message from Organizing Committee

Welcome to EMBC 2018. We are glad that you chose to travel to this beautiful setting and participate in EMBC this year. The organizing committee began preparation for this meeting over three years ago and has spent countless hours working with the professional staff of EMBS and Smith-Bucklin, to create what we feel is an outstanding conference. In addition to the keynotes addresses from leaders in our field and a broad array of scientific sessions, additional events such as the Women in Engineering Luncheon, EMBS Young Professional Reception and Lunch with Leaders provide unparalleled opportunities for international networking and collaboration with an international group of biomedical engineers.

Our conference theme is *“Learning from the Past, Looking to the Future”*. As we reflect on 40 years of the EMBC, we have accomplished much but many challenges remain. We have created better imaging tools as well as novel diagnostic and therapeutic devices. We have developed sophisticated models that can predict the pharmacokinetic responses to novel drugs. Robotic systems assist with surgery and rehabilitation. Advanced and connected health care monitoring devices allows people to stay in their homes longer, reducing health care costs and improving quality of life. Health informatics is applying the power of big data and artificial intelligence to enable precision medicine. We have reasons to be proud. These achievements do not satisfy us, but instead serve as a model and inspire us to work hard every day to serve humanity through the creation of engineering solutions for better medicine.

We hope that the backdrop of Honolulu sets the tone for the 40th anniversary of EMBC. Hawaiian culture, while distinctly Polynesian, has been influenced by many other Eastern and Western traditions. Similarly, biomedical engineering is at its core an engineering discipline, but has seen significant contributions from basic scientists and clinicians, a diversity of approaches, training, and experience that strengthens our field. Hawaii lives by the Spirit of Aloha, which emphasizes welcoming gestures, friendship, and a common bond. Likewise, EMBC is a collegial environment that welcomes professional dialogue in a constructive way, knowing that we are all motivated by the higher calling of improving health care around the world.

In closing, we welcome you, our friends and colleagues in Biomedical Engineering, to this beautiful island for 5 days of scientific exchange that we are sure will leave you invigorated and inspired to continue the important work of our field.

Aloha,

James Weiland, Michelle Khine, Thomas Penzel  
Conference Chairs

Gregg Suaning, Olaf Dossel  
Program Chairs

# General Conference Information

## Registration

Registration is located in the foyer outside Exhibit Hall 2 on Level 1 of the Hawaii Convention Center and will be open Monday, July 16<sup>th</sup> through Saturday, July 21<sup>st</sup>. Staff will be able to assist you during the following time schedule.

Monday 7/16	15:00 - 17:00
Tuesday 7/17	08:00 - 17:00
Wednesday 7/18	07:00 - 19:00
Thursday 7/19	07:30 - 18:00
Friday 7/20	07:30 - 18:00
Saturday 7/21	07:30 - 12:00

## Conference Badges

- Badges should be worn by all conference participants while in the conference areas. Badges validate your registration and may be utilized to validate registration for sessions and workshops
- Badges can be printed at any registration area during the published open hours of the conference
- Name you provided for registration will be the name that appears on the badge
- \$20 Fee applies for reprint or replacement of a badge

## Exhibits

Exhibits will be located in Exhibit Hall 2 on Level 1 of the Hawaii Convention Center

Exhibition Hours will run Wednesday, July 18<sup>th</sup>– Friday, July 20<sup>th</sup>

- Wednesday, July 18 09:30 – 18:50
- Thursday, July 19 09:30 – 19:00
- Friday, July 20 09:30 – 19:00

## Exhibitor Set-Up

Tuesday, July 17<sup>th</sup> 07:00 – 20:00

## Exhibitor Tear-Down

Friday, July 20<sup>th</sup> 19:00 – 24:00

## Welcome Reception

The welcome reception will be held on Wednesday, July 18<sup>th</sup> at 19:00 on the Rooftop Terrace

## Mothers' Room

Nursing mothers may visit the registration desk for access to a private nursing room at the Hawaii Convention Center. Please find a member of the EMBC Registration Staff Team and we will be happy to assist you.

## Mobile App

Download 40<sup>th</sup> International Conference of the IEEE Engineering in Medicine and Biology Society Mobile App. Navigate the event like a pro with the EMBC 18 mobile app, powered by Core-apps. With the EMBC 18 mobile app, you can:

- Stay organized with up-to-the-minute Exhibitor, Speaker, and Event information
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Once you have downloaded and opened the app, choose EMBC 18 and tap Download. Then, enter your Username and Password (IEEEEMEBEC8) to gain access to the app.

Platform Compatibility: Android v4x+ and iOS v7x+

Should you have any questions, please contact [support@core-apps.com](mailto:support@core-apps.com)

## Poster Sessions

Poster Session I Wednesday, July 18 17:15 – 19:00

Poster Session II Thursday, July 19 17:15 – 19:00

Poster session III Friday, July 20 17:15 – 19:00

Poster Sessions will take place in Exhibit Hall 2. Please make sure to hang your poster two hours prior to your scheduled presentation time. Upon conclusion of your poster session, please remove your poster. If your poster is left behind, it will be discarded. Daily poster session handouts will be provided at the registration desk so you know which poster board number you have been assigned. Velcro or push pins will be provided to attach your posters to your assigned poster board.

## Oral Presentations

A video projector will be available in each room and will be connected to a computer supporting resolution up to 1920x1080. Please upload your presentation to the centralized system in the speaker ready room at least two hours prior to your talk. It is the responsibility of the presenting author to load the presentation ahead of time and test it to ensure the presentation will be viewed properly.

## Author No Show Policy

EMBS enforces a "No Show" policy. Any accepted paper included in the final program is expected to have at least one author attend and present the paper at the conference. Authors of the accepted papers included in the final program who do not attend the Conference will be subscribed to a "No Show List", compiled by the Society. The "No-Show" papers will be removed from the proceedings and noted as "Author unavailable for presentation" prior to submitting to IEEE for inclusion in Xplore. The "No Show List" will be available to all EMBS conference organizers, who can reject submissions from these authors in the following two years, based on their past negative impact on an EMBS conference.

# Exhibitor Floor Plan

310 VACANT	213 	210 VACANT	111 VACANT
308 VACANT	209 	208  中国科学院深圳先进技术研究院 SHENZHEN INSTITUTES OF ADVANCED TECHNOLOGY CHINESE ACADEMY OF SCIENCES	109 VACANT
306  Total Doctor for the World	207 	206 	107 
304 	205 	204 	105 <b>IOP</b> Publishing
302 	203 	202 	103 
300 	201 <b>Medtronic</b>	101 	

# Publications

Time	July 17, 2018 (Tuesday)	Room
18:30 - 20:30	EMB Publications Meeting	302A

## Student, WIE, and EMB Society Events

Time	July 18, 2018 (Wednesday)	Room
08:00 - 09:30	Student Paper Competition I	305AB
09:45 - 11:00	Student Paper Competition II	305AB
11:15 - 12:30	Student Paper Competition III	305AB
12:30 - 13:30	Lunch With Leaders	306AB
Time	July 19, 2018 (Thursday)	Room
08:00 - 20:00	Student Activities	305AB
12:30 - 13:30	Lunch with Leaders	306AB
15:30 - 17:15	IEEE PULSE on Stage brought to you by Intel & IEEE Standards	325B
15:30 - 17:15	EMB Meet the Editors	302A
17:30 - 18:30	EMB AE Forum	325B
17:30 - 19:00	Women in Engineering Reception	327 & Balcony
19:00 - 20:00	EMB AE Reception	328
Time	July 20, 2018 (Friday)	Room
08:00 - 20:00	Student Activities	305AB
12:30 - 14:00	Women in Engineering Lunch	304AB
12:30 - 13:30	Student Panel Discussion	306AB
12:30 - 15:30	2018/2019 EMBC Meeting (closed meeting)	302A
19:00 - 21:00	Student Reception	Rooftop Terrace

# Technical Committees

Time	July 17, 2018 (Tuesday)	Room
17:00 - 18:00	Joint Dinner for Technical Committee Chairs, ExCom & PubCom	325B
18:00 - 21:00	EMBS Technical Committee Chairs' Meeting	325A
Time	July 18, 2018 Technical Committee Workshop Segments (Wednesday)	Room
07:30 - 07:40	Neuroengineering (NE)	328
07:40 - 07:50	Biomedical Signal Processing (BSP)	328
07:50 - 08:00	Wearable Biomedical Sensors and Systems (WBSS)	328
12:50 - 13:00	Cardio Pulmonary Systems (CPS)	328
13:00 - 13:10	Biomedical Imaging and Image Processing (BIIP)	328
13:10 - 13:20	BioRobotics (BR)	328
13:20 - 13:30	Bionanotechnology & BioMEMS (BNBM)	328
17:15 - 17:25	Biomedical and Health Informatics (BHI)	328
17:25 - 17:35	Translational Engineering & Healthcare Innovations (TEHI)	328
17:35 - 17:45	Therapeutic Systems and Technologies (TST)	328
17:45 - 17:55	Standards	328
Time	July 19, 2018 Technical Committee Meetings (Thursday)	Room
12:30 - 13:30	Committee Meeting Neuroengineering (NE)	316C
12:30 - 13:30	Committee Meeting Cardio Pulmonary Systems (CPS)	318A
12:30 - 13:30	Committee Meeting Biomedical and Health Informatics (BHI)	319A
12:30 - 13:30	Committee Meeting Biomedical Imaging and Image Processing (BIIP)	319B
12:30 - 13:30	Committee Meeting Translational Engineering & Healthcare Innovations (TEHI)	321A
12:30 - 13:30	Committee Meeting Therapeutic Systems and Technologies (TST)	321B
12:30 - 13:30	Committee Meeting Wearable Biomedical Sensors and Systems (WBSS)	322AB
12:30 - 13:30	Committee Meeting Standards	323A
12:30 - 13:30	Committee Meeting Bionanotechnology & BioMEMS (BNBM)	323B
12:30 - 13:30	Committee Meeting BioRobotics (BR)	323C
12:30 - 13:30	Committee Meeting Biomedical Signal Processing (BSP)	324





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# #EMBC18

# Organizing Committee

Conference Chair: James Weiland

Conference Co-Chair: Michelle Khine

Program Committee Chair: Greg Suaning

Program Committee Co-Chair: Olaf Doessel

Finance Chair: Thomas Penzel

Workshop/Tutorial/Mini-Symposia/Invited Session/Special Session Chair: Atam Dhawan

Conference Editorial Board Chair: Jim Patton

Student/Young Professional/Membership Activity Chair: Steve Wright

Student Paper Competition Chair: Yingchun Zhang

Local Organizing Committee Chair: Aaron Ohta

Women in Engineering Co-Chairs: Lisa Lazareck-Asunta, Jennifer H. Shin

Exhibit and Sponsor Chair: Jack Judy

Webmaster: Hans van Oostrom

## EMBS Executive Office Team:

Laura Wolf

Adrian Plummer

Janice Sandler

Michael Markowycz

Scott Woodhouse

# International Program Committee

Dominique Durand, *Case University, Cleveland, USA*

Zhongze Gu, *Southeast University, China*

Bin He, *University of Minnesota, Minneapolis, USA*

Ellis Meng, *University of Southern California, USA*

Konstantina S. Nikita, *National Technical University of Athens, Greece*

Christian Roux, *Institute Mines-Telecom, France*

Mohamad Sawan, *Ecole Polytechnique de Montreal, Canada*

Thomas Stieglitz, *University of Freiberg, Germany*

Kenji Sunagawa, *Kyushu University, Japan*

Nitish Thakor, *Johns Hopkins University (Baltimore, USA)/National University of Singapore*

Ewaryst Tkacz, *Silesian University of Technology, Poland*

Bruce Wheeler, *University of California, San Diego USA*

Eung Je Woo, *Kyung Hee University, South Korea*

# Program Themes and Chairs

## Theme 1. Biomedical Signal Processing

*Chair:* Laura Astolfi, *Sapienza University, Italy*

*Co-Chair:* Luca Faes, *University of Palermo, Italy*

## Theme 2. Biomedical Imaging & Image Processing

*Chair:* Marius Linguraru, *George Washington University, USA*

*Co-Chairs:* Julia Schnabel, *Kings College, U.K.*

Chulhong Kim, *POSTECH, Korea*

Miguel Angel Gonzalez Ballester, *ICREA/Pompeu Fabra University of Spain*

## Theme 3. Micro- & Nano-Bioengineering; Cellular & Tissue Engineering

*Chair:* Esmail Jabbari, *University of South Carolina, USA*

## Theme 4. Computational Systems & Synthetic Biology; Multiscale Modeling

*Chair:* Socrates Dokos, *University of New South Wales, Australia*

*Co-Chair:* Jie Liang, *University of Illinois, Chicago, USA*

## Theme 5. Cardiovascular & Respiratory Systems Engineering

*Chair:* Thomas Heldt, *MIT, USA*

*Co-Chairs:* Rama Mukkamala, *Michigan State University, USA*

Philip de Chazal, *University of Sydney, Australia*

## Theme 6. Neural Engineering, Neuromuscular Systems & Rehabilitation Engineering

*Chair:* Silvestro Micera, *Ecole Polytechnique Federale de Lausanne, France*

*Co-Chair:* Michela Chiappalone, *Italian Institute of Technology (ITT), Italy*

## Theme 7. Wearable Biomedical Sensors & Systems

*Chair:* Stephen Redmond, *University of New South Wales, Australia*

*Co-Chairs:* Alan Bourke, *Norwegian University of Science & Technology, Norway*

Brian Caulfield, *University College Dublin, Ireland*

## Theme 8. Bio-Robotics, Surgical Planning & Biomechanics

*Chair:* Alicia Casals, *Technical University of Catalonia, Spain*

*Co-Chairs:* Leonardo Ricotti, *Scuola Superiore Sant'Anna, Italy*

Jorge Dias, *Khalifa University of Science, Technology and Research. Abi Dhabi*

## Theme 9. Therapeutic & Diagnostic Systems, Devices & Technologies, Clinical Engineering

*Chair:* Punit Prakash, *Kansas State University, USA*

*Co-Chairs:* Jie Chen, *University of Alberta, Canada*

Dieter Haemmerich, *Medical University of South Carolina, USA*

## Theme 10. Biomedical & Health Informatics

*Chair:* May Wang, *Georgia Tech, USA*

*Co-Chair:* Konstantina S. Nikita, *National Technical University of Athens, Greece*

## Theme 11. Biomedical Engineering Education & Society

*Chair:* Metin Akay, *University of Houston, USA*

## Theme 12. Translational Engineering for Healthcare Innovation & Commercialization

*Chair:* Atam Dhawan, NJIT, USA

*Co-Chair:* Steve Schacheter, Harvard Medical School, USA

## Theme 13. Pharmaceutical Engineering

*Chair:* Kyungsoo Park, Yonsei University, Korea

*Co-Chairs:* Andrew Hooker, Uppsala University, Sweden

Jong Mo Seo, Seoul National University, South Korea

# Program at a Glance

## Monday, July 16, 2018

15:00 – 17:00 Registration Open

## Tuesday, July 17, 2018

08:00 – 17:00 Registration Open

08:00 – 12:30 Workshops (pre-registration required)

13:30 – 17:30 Workshops (pre-registration required)

## Wednesday, July 18, 2018

07:00 – 19:00 Registration Open

08:00 – 09:30 Minisymposium, Oral Sessions, Invited Sessions, Special Session

09:30 – 10:00 Coffee Break

10:00 – 11:30 Opening Ceremony & Keynote Session: John Webster

11:30 – 12:30 Keynote – Martha Morrell

12:30 – 13:30 Lunch Break on own, Exhibits Open, Poster Viewing

13:30 – 15:00 Minisymposium, Oral Sessions, Invited Sessions

15:00 – 15:30 Coffee Break, Exhibits Open, Poster Viewing

15:30 – 16:30 Theme Keynotes

16:30 – 17:15 Ignite Oral Presentation Sessions

17:15 – 19:00 Poster Session

19:00 – 20:30 Welcome Reception

## Thursday, July 19, 2018

07:30 – 18:00 Registration Open

08:00 – 09:30 Minisymposium, Oral Sessions, Invited Sessions, Special Session

09:30 – 10:00 Coffee Break

10:00 – 11:30 Minisymposium, Oral Sessions, Invited Sessions

11:30 – 12:30 Keynote: Francine Kaufman

12:30 – 13:30 Lunch Break on own, Exhibits Open, Poster Viewing

13:30 – 15:00 Minisymposium, Oral Sessions, Invited Sessions

15:00 – 15:30 Coffee Break, Exhibits Open, Poster Viewing

15:30 – 16:30 Theme Keynotes

16:30 – 17:15	Ignite Oral Presentation Sessions
17:15 – 19:00	Poster Session
17:30 – 19:00	Women in Engineering Networking Event

### Friday, July 20, 2018

07:30 – 18:00	Registration Open
08:00 – 09:30	Minisymposium, Oral Sessions, Invited Sessions, Special Session
09:30 – 10:00	Coffee Break
10:00 – 11:30	Minisymposium, Oral Sessions, Invited Sessions
11:30 – 12:30	Keynote: Brian Otis
12:30 – 13:30	Lunch Break on own, Exhibits Open, Poster Viewing
12:30 – 13:30	Lunch with Leaders (pre-registration required)
12:30 – 14:00	Women in Engineering Luncheon with Elizabeth Iorns
13:30 – 15:00	Minisymposium, Oral Sessions, Invited Sessions
15:00 – 15:30	Coffee Break, Exhibits Open, Poster Viewing
15:30 – 16:30	Keynote – Joe Kiani
16:30 – 17:15	Ignite Oral Presentation Sessions
17:15 – 19:00	Poster Session
19:30 – 21:00	Student/Young Professional Reception

### Saturday, July 21, 2018

07:30 – 12:00	Registration Open
08:00 – 09:30	Minisymposium, Oral Sessions, Invited Sessions
09:30 – 10:00	Coffee Break
10:00 – 11:30	Minisymposium, Oral Sessions, Invited Sessions
11:30 – 13:30	Lunch Break on own
13:30 – 15:00	Oral Sessions
15:00 – 16:30	Oral Sessions

# Minisymposia

MINI SYMPOSIA TITLE	ORGANIZERS	DATE/TIME/LOCATION
Using Lasers and Polarization-Sensitive Technology in Retinal Scanning/Imaging	Gramatikov, Boris; Irsch, Kristina; Kang, Jin U.	Wednesday, July 18, 2018, 08:00-09:30, Meeting Room 325A
Fully Implantable Biomechatronic Organs	Ricotti, Leonardo; Menciassi, Arianna; Dario, Paolo	Wednesday, July 18, 2018, 08:00-09:30, Meeting Room 324
Subcellular Neural Interfaces	Otto, Kevin; Chestek, Cynthia	Wednesday, July 18, 2018, 08:00-09:30, Meeting Room 323C
Deep Learning in Medical Imaging	Lee, Jae Sung; Seong, Joon-Kyung	Wednesday, July 18, 2018, 08:00-09:30, Meeting Room 323B
Pulse Wave Analysis and Pulse Simulator in the TCM Perspective	Kim, Jaek U	Wednesday, July 18, 2018, 08:00-09:30, Meeting Room 323A
Recent Challenges and Advances in Cuffless Blood Pressure Measurement (I)	Inan, Omer; Hahn, Jin-Oh	Wednesday, July 18, 2018, 08:00-09:30, Meeting Room 322AB
Sensor-Based Behavioral Informatics: Advances in Understanding of Human Behavior	Sazonov, Edward; Jovanov, Emil	Wednesday, July 18, 2018, 08:00-09:30, Meeting Room 321A
Radiation Induced Acoustic Imaging	Min, Jung-Joon; Lee, Changho; Kim, Chulhong	Wednesday, July 18, 2018, 08:00-09:30, Meeting Room 319B
Advances in Technologies for Obesity Phenotyping and Weight Loss Intervention	Shen, Wei; Poon, Carmen C. Y.; Wang, May D.	Wednesday, July 18, 2018, 08:00-09:30, Meeting Room 319A
Digital Psychiatry: Smartphones, Sensors, and Signal Processing for Improving Detection and Outcomes in Serious Mental Illness	Torous, John; Larsen, Mark Erik; Lovell, Nigel H.	Wednesday, July 18, 2018, 08:00-09:30, Meeting Room 318A
Making Medical Devices Wireless in the Digital Health Age: Issues, Risks, and Practical Advice	Witters, Donald	Wednesday, July 18, 2018, 08:00-09:30, Meeting Room 316C
Technologies to Bypass Nervous System Injuries – The Path from Clinic to In-Home Use	Sharma, Gaurav	Wednesday, July 18, 2018, 08:00-09:30, Meeting Room 316B
Invasive and Non-Invasive Brain-Computer Interfaces for Medical Applications	Guger, Christoph; Kamada, Kyousuke; Ince, Nuri Firat	Wednesday, July 18, 2018, 08:00-09:30, Meeting Room 316A
Towards P4 Medicine in Sleep Theranostics I	Khoo, Michael; Penzel, Thomas	Wednesday, July 18, 2018, 08:00-09:30, Meeting Room 315
Advanced Photoacoustic Imaging	Kim, Chulhong	Wednesday, July 18, 2018, 08:00-09:30, Meeting Room 321B



MINI SYMPOSIA TITLE	ORGANIZERS	DATE/TIME/LOCATION
Artificial Intelligence in Magnetic Resonance Imaging	Du, Yiping; Liang, Zhi-Pei	Wednesday, July 18, 2018, 08:00-09:30, Meeting Room 318B
Pharmacometrics Approaches and Novel Drug Delivery Systems in Pharmaceutical Engineering	Park, Kyungsoo	Wednesday, July 18, 2018, 13:30-15:00, Meeting Room 325A
Using Engineering Approaches for Basic Discovery in Neuroscience	White, John; Durand, Dominique	Wednesday, July 18, 2018, 13:30-15:00, Meeting Room 324
Future Trends in System Design of Retinal and Cortical Visual Implants.	Caspi, Avi	Wednesday, July 18, 2018, 13:30-15:00, Meeting Room 323C
Recent Challenges and Advances in Cuffless Blood Pressure Measurement (II)	Mukkamala, R.; Mestha, Lalit, K.	Wednesday, July 18, 2018, 13:30-15:00, Meeting Room 322AB
Microphysiological System for Drug Screening and Disease Modeling	Leong, Kam	Wednesday, July 18, 2018, 13:30-15:00, Meeting Room 319B
Time-Varying Estimation of Human Neuromechanics: Modern Approaches and Their Applications	Ludvig, Daniel; Perreault, Eric; Schouten, Alfred; Mugge, Winfred	Wednesday, July 18, 2018, 13:30-15:00, Meeting Room 319A
How to Teach Robots How to Move: Lessons From Biological Motor Control	Forner-Cordero, Arturo; Dario, Paolo; Dias, Jorge	Wednesday, July 18, 2018, 13:30-15:00, Meeting Room 318B
How Neurophysiology Informs Rehabilitation Engineering	Milosevic, Matija; Popovic, Milos R.	Wednesday, July 18, 2018, 13:30-15:00, Meeting Room 316C
Biomedical Imaging and Image Processing for Radiotherapy Application	Gu, Xuejun; Ji, Jim Xiuquan	Wednesday, July 18, 2018, 13:30-15:00, Meeting Room 316B
Mapping the Peripheral Nervous System with State-of-the-Art Nerve Interfaces	Seymour, John P.; Ludwig, Kip	Wednesday, July 18, 2018, 13:30-15:00, Meeting Room 316A
Towards P4 Medicine in Sleep Theranostics II	Khoo, Michael; Penzel, Thomas	Wednesday, July 18, 2018, 13:30-15:00, Meeting Room 315
Challenges in Bioelectric Medicine	Butera, Robert; Bouton, Chad	Wednesday, July 18, 2018, 13:30-15:00, Meeting Room 323B
Classifying Neuro-Pathological Movement Patterns	Dhaher, Yasin	Wednesday, July 18, 2018, 13:30-15:00, Meeting Room 323A
Challenges and Clinical Unmet Needs in Cardiac MRI: From Signal Processing to Artificial Intelligence	Kheradvar, Arash; Jafarkhani, Hamid	Wednesday, July 18, 2018, 13:30-15:00, Meeting Room 318A

MINI SYMPOSIA TITLE	ORGANIZERS	DATE/TIME/LOCATION
Emerging Methods in Medical Image Analysis I	Fujita, Hiroshi; Lee, Gobert	Thursday, July 19, 2018, 08:00-09:30, Meeting Room 325A
Towards P4 Medicine in Sleep Theranostics III	Khoo, Michael; Penzel, Thomas	Thursday, July 19, 2018, 08:00-09:30, Meeting Room 324
Brain Computer Interface and Neurostimulation Technologies for Paralysis and Limb Prosthetic Applications	Bouton, Chad; Gaunt, Robert; Coulter, Stewart; Tyler, Dustin	Thursday, July 19, 2018, 08:00-09:30, Meeting Room 316A
New Challenges in Neurorehabilitation	Chiappalone, Michela; Semprini, Marianna	Thursday, July 19, 2018, 08:00-09:30, Meeting Room 315
Cuffless Unobtrusive Blood Pressure Measurement: From Sensing, Mechanism, Algorithm to Standardization	Ding, Xiao-Rong; Carey, Carole C.	Thursday, July 19, 2018, 08:00-09:30, Meeting Room 322AB
Emerging Methods in Medical Image Analysis (II)	Fujita, Hiroshi; Lee, Gobert	Thursday, July 19, 2018, 10:00-11:30, Meeting Room 325A
Non-Contact and Remote Measurement of Blood Pressure and Perfusion based on Video Pulse Waves	Yoshizawa, Makoto; Tanaka, Akira	Thursday, July 19, 2018, 10:00-11:30, Meeting Room 322AB
Robotic Neurorehabilitation: The State-of-Science	Patton, James	Thursday, July 19, 2018, 10:00-11:30, Meeting Room 316C
Recent Innovations and New Health-Related Applications of Electrical Bioimpedance	Halter, Ryan; Inan, Omer; Woo, Eung Je; Freeborn, Todd; Sanchez, Benjamin; Rutkove, Seward	Thursday, July 19, 2018, 10:00-11:30, Meeting Room 315
Addressing the need for New Neuro-Technologies with Innovative Optical Approaches	Choi, Bernard	Friday, July 20, 2018, 08:00-09:30, Meeting Room 323A
Bio-Signal Authentication Technologies	Kim, Jason; Sanchez- Reillo, Raul; Caras, John; Kang, Sejin; Kim, Jeehoon	Friday, July 20, 2018, 08:00-09:30, Meeting Room 315

# Special Sessions

Wednesday, July 18, 08:00 – 09:30 Meeting Room 304AB

## Developing Open Standards Facilitates Technology Commercialization

### Organizers:

Carole C. Carey, *Former U.S. Food and Drug Administration*

Esteben J Pino, *Universidad de Concepcion*

Rapid changes in medical technology and innovation in medical devices require a general guidance to ensure their usefulness to benefit public health as well as improved quality of life. This is what standards are for. Standards provide a general framework on what is expected, a common language to describe these new technologies and minimal performance requirements, to ensure repeatable and reliable results. The need for standardization is evident in order to produce quality, safe, reliable products as well as low costs. IEEE Standards Association participants drive the development of IEEE international standards in an open environment. IEEE-SA brings together experts from academia, government and companies to find consensus and promote the development of new solutions in diverse areas. The purpose of this special session is to present the work of current initiatives and engage people to collaborate or propose new areas where standards are needed.

Thursday, July 19, 08:00 – 09:30 Meeting Room 328

## Early-Career Researcher Mentoring: Transitioning from Graduate Studentship to a Professional Career

### Organizers:

Nitish Thakor, *John Hopkins University*

Aishwarya Bandla, *National University of Singapore*

This session is specially designed for Early-Career Researchers to make them industry-ready and a career springboard to launch as a young PI, scientist in industry or entrepreneur. We target the burning topics which intrigue young scientists and fresh graduates while they transition from studentship to postdoc to a permanent position. The session will be fashioned to hold 5 talks by eminent personalities in Biomedical Engineering and followed by a panel discussion format to answer Q&A from the floor. The workshop will conclude with a networking session. Join us at the IEEE EMBC Conference 2018, for this exciting Early-Career Researcher Series workshop and networking session.

Friday July 20, 08:00 – 09:30 Room 328

## Academic Entrepreneur: Accelerating Innovation in Biomedical Engineering

### Organizers:

Jie Lian, *Klarquist Sparkman, LLP*

Yongji Fu, *Hill-Rom*

The last four decades have witnessed great strides in fusing engineering and medicine to improve healthcare. With the rapid development and availability of new engineering tools such as data mining, nanotechnology, novel biomaterials, lab-on-a-chip system design, etc., biomedical engineering is reaching the cusp of a new era of innovation. Thanks to the large talent pool and interdisciplinary environment, universities and research institutions have always been at the forefront of technological innovation in biomedical engineering. However, despite the tremendous potentials, challenges remain on how to rapidly, efficiently integrate and translate these new technologies into novel and effective diagnostic or therapeutic applications. Many hurdles exist between academic research and commercialization, including organizational barriers, financial barriers, and regulatory barriers. For example, academic researchers often lack sufficient business training and mentoring, have unstable resources in terms of workforce and funding, and have limited experience in navigating complex legal and regulatory environment. To overcome such hurdles, a number of initiatives have been developed, such as the university-based incubators, entrepreneur-in-residence programs, public-private research partnerships, etc. In this Special Session, we organize a panel of experts representing different sectors in the field of biomedical engineering to discuss the best practices in translational research. The topics will cover university start-ups and social entrepreneurship, public and private funding sources, intellectual property management, and regulatory risk management. Attendees are encouraged to interact with the expert panel to identify problems and brainstorm solutions. The goal is to provide attendees a broader perspective and better understanding of translational research and innovation management, and foster transforming the fruits of academic research into successful commercialization.

# Invited Sessions

INVITED SESSION TITLE	ORGANIZERS	DATE/TIME/LOCATION
Computational Human Models (I) Verification, Validation, and Reporting	Makarov, Sergey; Horner, Marc; Noetscher, Gregory	Wednesday, July 18, 2018, 08:00-09:30, Meeting Room 325B
Computational Human Models (II) Deformable and Personalized Models. Machine Learning	Makarov, Sergey; Horner, Marc; Noetscher, Gregory	Wednesday, July 18, 2018, 13:30-15:00, Meeting Room 325B
Computational Human Models (III) High-Frequency Simulations and Measurements	Makarov, Sergey; Horner, Marc; Noetscher, Gregory	Thursday, July 19, 2018, 08:00-09:30, Meeting Room 325B
Multi-Technologies-Platforms: Advanced Sensors and Actuators for Life Science Applications	Miled, Amine; Ghafar-Zadeh, Ebrahim; Boukadoum, Mounir; Izquierdo, Ricardo; Chen, Jle; Magierowski, Sebastian	Thursday, July 19, 2018, 08:00-09:30, Meeting Room 323C
Next Steps in Real-Life Brain Monitoring: Technologies for Wearable EEG	Casson, Alexander J.; Hairston, W. David; De Vos, Maarten; Kidmose, Preben	Thursday, July 19, 2018, 08:00-09:30, Meeting Room 323B
Analysis of Cardiac Vibrations: Methodology and Applications	Di Rienzo, Marco; Inan, Omer	Thursday, July 19, 2018, 08:00-09:30, Meeting Room 323A
Time-Series Modelling of Physiology: Inference, Implementation, and Interpretability	Casson, Alexander J.; Clifton, David; Colopy, Glen Wright	Thursday, July 19, 2018, 08:00-09:30, Meeting Room 321B
Multiscale Complexity Analysis of Biomedical Signals: Methods and Applications	Faes, Luca; Porta, Alberto	Thursday, July 19, 2018, 08:00-09:30, Meeting Room 321A
The Role and Importance of Neuromechanics during Human Locomotion	Ludvig, Daniel; Rouse, Elliott	Thursday, July 19, 2018, 08:00-09:30, Meeting Room 319B
Simulation of Neurological Disorders and Their Treatment With Neuromodulation	Dokos, Socrates; Shils, Jay	Thursday, July 19, 2018, 08:00-09:30, Meeting Room 319A
Bio-Sensing in Application Environment	Lei, Kin Fong; Yao, Da-Jeng	Thursday, July 19, 2018, 08:00-09:30, Meeting Room 318B
Imaging Photoplethysmography and Remote Physiological Sensing	Blackford, Ethan Brian; McDuff, Daniel J.; Estepp, Justin Ronald	Thursday, July 19, 2018, 08:00-09:30, Meeting Room 318A
Fostering Healthcare Transformation through Wearable Sensors and Big Data at Work: Preventive, Pervasive and Personalized Care	Seoane, Fernando; Lindecrantz, Kaj	Thursday, July 19, 2018, 08:00-09:30, Meeting Room 316C
Next Generation Neural Interfaces for Multimodal Recording and Stimulation	Kuzum, Duygu; Chamanzar, Maysamreza	Thursday, July 19, 2018, 08:00-09:30, Meeting Room 316B

INVITED SESSION TITLE	ORGANIZERS	DATE/TIME/LOCATION
Computational Human Models (IV) Brain Stimulation	Makarov, Sergey; Horner, Marc; Noetscher, Gregory	Thursday, July 19, 2018, 10:00-11:30, Meeting Room 325B
Biologically Inspired Regenerative Systems	Jabbari, Esmail	Thursday, July 19, 2018, 10:00-11:30, Meeting Room 323B
Recent Advances in System, Algorithm and Applications of Diagnostic Ultrasound Imaging Modality	Managuli, Ravi; Kim, Hyung Ham	Thursday, July 19, 2018, 10:00-11:30, Meeting Room 323A
Progress in Fetal Monitoring Technologies	Khandoker, Ahsan H; Kimura, Yoshitaka	Thursday, July 19, 2018, 10:00-11:30, Meeting Room 321A
Signals and Systems for Hearing Study and Hearing Aids	Panahi, Issa	Thursday, July 19, 2018, 10:00-11:30, Meeting Room 319B
Sensors and Actuators for 3D Constructs of Living Cells	Wiest, Joachim; Alexander, Frank	Thursday, July 19, 2018, 10:00-11:30, Meeting Room 319A
New Trends in Perinatal and Pediatric Imaging	Lepore, Natasha; Linguraru, Marius G.; Wang, Yalin; Grisan, Enrico	Thursday, July 19, 2018, 10:00-11:30, Meeting Room 318B
Wearable EEG for Real-Life Brain Monitoring	De Vos, Maarten; Kidmose, Preben; Casson, Alexander J.; Hairston, W. David	Thursday, July 19, 2018, 10:00-11:30, Meeting Room 318A
Artificial Vision: Latest Progress and Challenges Ahead	Fried, Shelley; Chan, Leanne LH	Thursday, July 19, 2018, 10:00-11:30, Meeting Room 316B
Machine Learning / Deep Learning for Medical Image Analysis	Gonzalez Ballester, Miguel Angel; Schnabel, Julia	Thursday, July 19, 2018, 10:00-11:30, Meeting Room 316A
Computational Human Models (V) Tumor Treating Fields	Makarov, Sergey; Horner, Marc; Noetscher, Gregory	Thursday, July 19, 2018, 13:30-15:00, Meeting Room 325B
Computational Human Models (VI) Emerging Modeling and Measurement Techniques	Makarov, Sergey; Horner, Marc; Noetscher, Gregory	Friday, July 20, 2018, 08:00-09:30, Meeting Room 325B

# Conference Editorial Board

## EMBC 2018, Honolulu, Hawaii, USA

I would like to sincerely thank the following members of the Conference Editorial Board. There were 3529 submissions overall. Of these, 1508 were full contributed manuscripts that were part of our rigorous peer-review process. These papers were reviewed with on average three reviewers per paper, but a minimum of two. Theme editors also made initial “accept/reject” decisions and created a draft scientific program for each theme.

There were also 29 Invited Session proposals resulting in 143 1-page papers and 44 Minisymposia proposals, resulting in 185 1-page papers. These were also carefully reviewed by a separate review panel selected by the program committee.

Finally, there were also 834 Research Poster submissions this year. These were reviewed by a special team of associate editors, handpicked by the local organizers and the EMB technical Committees. I thank all these individuals for their time as we rapidly reviewed them.

Each year we maintain the highest quality of papers being submitted, each with ratings and feedback given to authors from reviewers. The continued dedication and commitment of Editors, Associate Editors and Reviewers, makes this Annual Conference an active and vibrant community of science. I also warmly thank the members of the Editorial Board, listed below, who made my work a real pleasure. It’s been an honour and privilege to be part of such a fine community.

*James Patton, Editor in Chief for Conference Editorial Board*

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## Theme Editors

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Co-Editor: Georgios Mitsis

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Editor: Jim Ji  
Co-Editor: Marius George Linguraru

### Theme 3. Micro/Nano-bioengineering; Cellular/ Tissue Engineering and Biomaterials

Editor: Esmail Jabbari  
Co-Editor: Nathalia Peixoto

### Theme 4. Computational Systems and Synthetic Biology; Multiscale Modeling

Editor: Socrates Dokos  
Co-Editor: Jie Liang

### Theme 5. Cardiovascular and Respiratory Systems Engineering

Editor: Ramakrishna Mukkamala  
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### Theme 6. Neural and Rehabilitation Engineering

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### Theme 11. Biomedical Engineering Education and Society

Editor: Bruce Wheeler

### Theme 12. Translational Engineering for Healthcare Innovation and Commercialization

Editor: Atam P Dhawan

### Theme 13. Pharmaceutical Engineering and Drug Delivery Systems

Editor: Kyungsoo Park

### Minisymposia, Invited and Special session Editors:

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Michelle Khine  
Olaf Doessel  
James Weiland  
Greg Suaning

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Humeau-Heurtier, Anne  
Ifeachor, Emmanuel  
James, Christopher  
Kahya, Yasemin P.  
Laguna, Pablo  
Magenes, Giovanni  
Michmizos, Konstantinos  
Porta, Alberto  
Signorini, Maria G.  
Song, Dong  
Sornmo Leif  
Valenza, Gaetano  
Vanrumste, Bart  
Voss, Andreas  
Westwick, David  
Yamamoto, Yoshiharu  
Yana, Kazuo

## **Theme 02. Biomedical Imaging and Image Processing**

Amini, Amir  
Anastasio, Mark  
Chan, Kevin C.  
Delingette, Hervé  
Ding, Lei  
Fatemi, Mostafa  
Fenster, Aaron  
Garvin, Mona  
Gu, Xuejun  
Ji, Jim Xiuquan  
Jo, Javier Antonio  
Kao, Chien-Min  
Kim, Hyun Keol  
Kimura, Yuichi  
Lee, Ray  
Liao, Hongen  
Linguraru, Marius George  
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Razansky, Daniel  
Ruggeri, Alfredo  
Sidky, Emil  
Sikdar, Siddhartha  
Staib, Lawrence H.  
Toschi, Toschi  
Suzuki, Kenji  
Vinegoni, Claudio  
Watabe, Hiroshi  
Wu, Ed X.  
Ying, Leslie  
Du, Yiping

Fei, Baiwei  
Toschi, Nicola

## **Theme 03. Micro/Nano- bioengineering; Cellular/Tissue Engineering and Biomaterials**

Capadona, Jeffrey  
Docheva, Denitsa  
Morss Clyne, Alisa  
Jabbari, Esmail  
Lee, Hyunjoo Jenny  
Almasri, Mahmoud  
Peixoto, Nathalia  
Lord, Megan  
Siu, Vince

## **Theme 04. Computational Systems and Synthetic Biology; Multiscale Modeling**

Dash, Ranjan  
Dokos, Socrates  
Gardiner, Bruce  
Grayden, David B.  
Liang, Jie  
Nielsen, Poul  
May, Elebeoba

## **Theme 05. Cardiovascular and Respiratory Systems Engineering**

Armoundas, Antonis  
Chbat, Nicolas W.  
Di Rienzo, Marco  
Heldt, Thomas  
Li, John K-J.  
Sugimachi, Masaru  
Tawhai, Merryn  
Terrill, Philip  
Mukkamala, Ramakrishna  
Penzel, Thomas  
Jané, Raimon

## **Theme 06. Neural and Rehabilitation Engineering**

Abbas, James  
Astolfi, Laura  
Azevedo-Coste, Christine  
Babiloni, Fabio  
Butera, Robert  
DiGiovanna, Jack  
Guiraud, David  
James, Christopher  
Jones, Richard D.  
Micera, Silvestro  
Mussa-Ivaldi, Ferdinando  
Oweiss, Karim  
Perreault, Eric

Suaning, Gregg  
Zouridakis, George  
Lee, Hyunjoo Jenny  
Weiland, James  
Al-Jumaily, Adel  
Carrozza, Maria Chiara  
Cvetkovic, Dean  
Tong, Shanbao  
Ellis, Michael  
Petroff, Neil  
Esmailbeigi, Hananeh

## **Theme 07. Biomedical Sensors and Wearable Systems**

Aminian, Kamiar  
Bonato, Paolo  
Boric-Lubecke, Olga  
Choi, Jin-Woo  
Demarchi, Danilo  
Di Rienzo, Marco  
Ghafar-Zadeh, Ebrahim  
Gosselin, Benoit  
Jafari, Roozbeh  
Jayaraman, Sundaresan  
Jovanov, Emil  
Lymberis, Andreas  
MacPherson, Emma  
Meng, Ellis  
Milenkovic, Aleksandar  
Misra, Veena  
Mizrahi, Joseph  
Molinari, Filippo  
Murakami, Yuji  
Nam, SungWoo  
Peixoto, Nathalia  
Penders, Julien  
Petelenz, Tomasz  
Sazonov, Edward  
Stanacevic, Milutin  
Tamura, Toshiyo  
Troyk, Philip  
Wac, Katarzyna  
Warren, Steve  
Almasri, Mahmoud  
Lee, Sang Woo  
Youn, Inchan  
Lee, Junchang  
Kim, Jae Hun  
Lim, Hyung-Gyu  
Choy, Youngbin  
Caulfield, Brian

## **Theme 08. Biorobotics and Biomechanics**

Abolhassani, Niki  
Begg, Rezaul  
BuSha, Brett



Dhaher, Yasin  
 Fey, Nicholas  
 Fichtinger, Gabor  
 Masia, Lorenzo  
 Micera, Silvestro  
 Misra, Sarthak  
 Patton, James (Jim)  
 Pons, Jose Luis  
 Ranganathan, Rajiv  
 Riviere, Cameron N.  
 Sanguineti, Vittorio  
 Su, Hao

#### **Theme 09. Therapeutic and Diagnostic Systems and Technologies**

Chbat, Nicolas W.  
 Haemmerich, Dieter  
 Linte, Cristian A.  
 Panescu, Dorin  
 Prakash, Punit  
 Soda, Paolo  
 Yoshizawa, Makoto  
 Zderic, Vesna

#### **Theme 10. Biomedical and Health Informatics**

Barro, Senen  
 Fotiadis, Dimitrios I.  
 Gomez, Enrique J.  
 Inan, Omer  
 Maglaveras, Nikolaos  
 Nugent, Chris  
 Pham, Tuan D.  
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 Tyrer, Harry  
 Larsen, Mark  
 Wang, May D.  
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 Nikita, Konstantina (Nantia)  
 Jimison, Holly

#### **Theme 11. Biomedical Engineering Education and Society**

Kant Kumar, Dinesh  
 Magjarevic, Ratko  
 Monzon, Jorge E.  
 Sandham, William  
 Vilcahuaman, Luis  
 Zequera Diaz, Martha Lucia  
 van Oostrom, Johannes

#### **Theme 12. Empowering Individual Healthcare Decisions through Technology**

Dhawan, Atam  
 Principe, Jose  
 Carmena, Jose M.  
 Wheeler, Bruce

Tridandapani, Srini  
 Chen, Jie  
 Sacristan, Emilio

#### **Theme 13. Pharmaceutical Engineering and Drug Delivery Systems**

Kang, Dongwoo  
 Cai, Lintao  
 Park, Kyungsoo  
 Hyungil Jung, Ph.D.  
 Andrew Hooker, Ph.D.

#### **Special Associate Editors for Minisymposia and Invited Sessions**

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 Casson, Alexander James  
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 Choi, Bernard  
 Colopy, Glen Wright  
 Dhaher, Yasin  
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 Dokos, Socrates  
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Aljama-Corrales, Tomas	Avila-Vilchis, Juan-Carlos	Biffi Gentili, Guido	Castellanos-Dominguez, G.
Al-Jumaily, Adel	Avolio, Alberto P	Bigan, Cristin	Castiglioni, Paolo
Almasganj, Farshad	Ayaz, Hasan	Bilbault, Jean-Marie	Castro, Marcelo
Almeida, Rute	Azami, Hamed	Binczak, Stéphane	Cattelani, Luca
Almekkawy, Mohamed	Azevedo-Coste, Christine	Blackford, Ethan Brian	Cauwenberghs, Gert
Al-nuaimi, Ali H. Hussein	Azpiroz-leeahan, Joaquin	Blanco-Velasco, Manuel	Cecotti, Hubert
Al-shargie, Fares	Babiloni, Fabio	Bobbert, Maarten	Cene, Vinicius H.

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Chaimanonart, Nattapon	Colombo, Roberto	Duan, Qi	Frangou, Polytimi
Chamanzar, Maysamreza	Colominas, Marcelo Alejandro	Dubois, Rémi	French, Patrick J.
Chan, Chung	Comtois, Philippe	Duggento, Andrea	Frenea-Robin, Marie
Chan, Kevin C.	Contreras-Vidal, José	Duplaga, Mariusz	Friedrich, Christoph M.
Chan, Rosa H. M.	Corbett, Elaine	Durand, Dominique	Fripp, Jurgen
Chan, Russell W.	Corino, Valentina	Durfee, William	Frouin, Frédérique
Chandler-Laney, Paula C	Corona-Strauss, Farah I.	Durrani, Mohammed N.	Fu, Michael J
Chang, Alison	Correia, Miguel	Eberl, Stefan	Fukayama, Osamu
Charkhkar, Hamid	Cosmi, Erich	Ehrens, Daniel	Fukuoka, Yutaka
Charleston-Villalobos, Sonia	Costa, Silvana C.	Elgundi, Zehra	Fumene Feruglio, Paolo
Chatterjee, Baibhab	Crema, Andrea	Ellis, Michael	Gajawelli, Niharika
Chbat, Nicolas W.	Curto, Sergio	Elmore, Timothy	Gallardo-Hernández, Ana G.
Chen, Ching-Mei	Cysarz, Dirk	Enayati, Moein	Gallego, Juan Alvaro
Chen, Fei	Dai, Huhe	Epps, Julien	Gao, Fan
Chen, Gin-Shin	Dai, Yang	Epstein, David	Gao, Mingwu
Chen, Jie	Daily, John W.	Erlandson, Björn-Erik	Garcia, Maria
Chen, Liangyou	Dalakleidi, Kalliopi	Erson Omay, E. Zeynep	Garcia-Casado, Javier
Chen, Mo	Dao, Tien-Tuan	Escudero, Javier	García-Gordillo, Carlos
Chen, Wenjing	Das, Debayan	Eskofier, Bjoern M	Garcia-Molina, Gary Nelson
Chen, Wenxi	Das, Ronnie	Esmailbeigi, Hananeh	Garcia-Pardo, Concepcion
Chen, Xiang	Dash, Ranjan	Estrada, Luis	García-Sánchez, Tomás
Chen, XinJian	Datta, Sushmita	Eswaran, Hari	Garde, Ainara
Chen, Yafen	Dauwels, Justin	Etemadi, Mozziyar	Garreau, Mireille
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Chen, Ying	Davis, Daren	Faes, Luca	Germany, Enrique I.
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Cheng, Leo K	de Chazal, Philip	Falk, Tiago	Ghoraani, Behnaz
Cheng, Teddy Man Lai	De Cooman, Thomas	Fallahi, Hojjatollah	Giannakeas, Nikolaos
Cheung, Carol	De Jonckheere, Julien	Fang, Peng	Gil, Eduardo
Chi, ChongWei	de Jongh Curry, Amy	Farella, Elisabetta	Giordano, Daniela
Chiang, Jason	De Maria, Beatrice	Farooq, Muhammad	Giraldo, Beatriz
Chin, Zheng Yang	De Micheli, Giovanni	Farooq, Omar	Golemati, Spyretta
Chinzei, Kiyoyuki	de Munck, J. C.	Fassl, Bernhard	Gomez, Carlos
Chiofolo, Caitlyn	de Toledo, Paula	Fateh, Fariba	Gomis, Pedro
Chiu, Hung-Wen	Dehollain, Catherine	Fatemi, Mostafa	Gonzalez Ballester, Miguel A.
Cho, Il-Joo	Dekkers, Gert	Feng, Dagan	González, Francisco Javier
Cho, Jongman	Del Gaudio, Costantino	Feng, Mengling	Gonzalez-Camarena, Ramon
Cho, Seungryong	Delgado-Martínez, Ignacio	Fenster, Aaron	Gordon, Keith
Cho, Sunghwan	Deng, Zhi-De	Fernandez-Bes, Jesus	Goujon, Jean-Marc
Choi, Changmok	Dhawan, Atam	Fernández-Breis, Jesualdo T.	Gouveia, Pedro
Choi, Jin-Woo	Di Rienzo, Marco	Fernandez-Leal, Angel	Gouveia, Sonia
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Choi, Junho	Diciotti, Stefano	Fernandez-Luque, Luis	Gramatikov, Boris
Chon, Ki	Dickhaus, Hartmut	Ferrandez, Jose M.	Greco, Alberto
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Christensen, Gary E.	Ding, Lei	Fey, Nicholas	Grønli, Tor-Morten
Chrysostomou, Charalambos	Dinh, Anh	Figueiras, Edite	Grönlund, Christer
Chung, Sang Hun	Do, An H.	Filos, Dimitrios	Gu, Dong-Yun
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Cikajlo, Imre	Doessel, Olaf	Fletcher, Richard Ribon	Guan, Cuntai
Cimetta, Elisa	Doheny, Emer	Fleury, Anthony	Gubbi, Jayavardhana
Ciofani, Gianni	Dojat, Michel	Flexman, Molly	Guerrero-Mora, Guillermina
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Clark, John Tobey	Dommel, Norbert Brian	Fontana, Juan M.	Guiraud, David
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Cleland, Ian	Drogos, Justin	Fortune, Emma	Guo, Tianruo

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Haidegger, Tamas	Immonen, Milla Sinikka	Kant Kumar, Dinesh	Kumar, Neelesh
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Hämäläinen, Matti	Iqbal, Kamran	Karimi, Yasha	Lahuec, Cyril
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Hekman, Edsko	Jacquemet, Vincent	Kearney, Robert Edward	Lederman, Dror
Heldt, Thomas	James, Christopher	Keller, Thierry	Lee, Beng Hai
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Hemm, Simone	Janssens, Luc	Khalil, Islam S. M.	Lee, Hoseon
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Hernandez-Matos, Enrique	Javorka, Michal	Khoo, Michael	Lee, Sabrina
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Horowitz, Justin	Jo, Javier Antonio	Kong, Jun	Li, John K-J.
Hotrabhavananda, Benjamin	Johansen, Peter	Kontaxis, Spyridon	Li, Junhua
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Hsiao, Tzu-Chien	Jones, Edward	Kopke, Joseph V	Li, Shuo
Hu, Eric	Jones, Richard D.	Korhonen, Ilkka	Li, Wen-Tyng
Hu, Sijung	Joshi, Shantanu	Kortelainen, Jukka	Li, Xiaoyan
Huang, Felix	Jovanov, Emil	Kos, Maciej Rafal	Li, Xuan
Huang, He	Juhola, Martti	Kosa, Gabor	Li, Yanjun
Huang, Lei	Jung, Hyungil	Kostoglou, Kyriaki	Li, Yao
Huang, Weimin	Jung, Tzyy-Ping	Kota, Srinivas	Li, Zhan
Huang, Yanping	Jung, Yongwoon	Kowalewski, Timothy	Lian, Jie
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Lin, Yen-Sheng	Mansoor, Awais	Minnikanti, Saugandhika	Nguyen, Thanh
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Linguraru, Marius George	Mariani, Sara	Mirbozorgi, Seyedabdollah	Nicolaou, Nicoletta
Linte, Cristian A.	Marin, Thibault	Mirfakhrai, Tissaphern	Nie, Kaibao
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Liu, Jiaen	Marjanovic, Nicholas	Mitsis, Georgios D.	Noghanian, Sima
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Liu, Jianguo	Markow, Zachary	Miyamoto, Tadayoshi	Nollo, Giandomenico
Liu, Junchi	Marozas, Vaidotas	Mo, Lingfei	Nordon, Robert E
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Liu, Qing	Marquez Chin, Cesar	Molinari, Filippo	Nunes, Catarina S
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Liu, Wentai	Martel, Sylvain	Momose, Keiko	Nygaard, Hans
Liu, Yan	Martinez, Juan Pablo	Monasterio, Violeta	Obeid, Iyad
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Liu, Yinan	Martinez-Perez, M. Elena	Montano Gella, Luis	Ochiai, Ryoichi
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Loncar-Turukalo, Tatjana	Martin-Yebra, Alba	Monzon, Jorge E.	Odle, Brooke
Lopez-Meyer, Paulo	Maruvada, Subha	Morbiducci, Umberto	Ogawa, Mitsuhiro
Lord, Megan	Masè, Michela	Moreno, Juan C.	Oguri, Koji
Lou, Bin	Masè, Michela	Moriya, Henrique Takachi	Oh, Hyuk
Lowery, Madeleine	Mashiatulla, Maleeha	Morshead, Cindi	Ohnishi, Kengo
Lu, Zhiyuan	Massot, Bertrand	Moslehpour, Mohsen	Ohta, Aaron
Lucchini, Maristella	Masuda, Kohji	Motie Nasrabadi, Ali	Ohta, Hidetoshi
Ludvig, Daniel	Matrone, Giulia	Mougiakakou, Stavroula	Ohta, Jun
Luo, Jianwen	Matsopoulos, George K.	Moustakides, George	Okada, Minoru
Luo, Xiongbiao	Matsuda, Tetsuya	Muceli, Silvia	Okumura, Hiroshi
Lura, Derek	Matsumoto, Monica	Muehlsteff, Jens	Oloumi, Faraz
Lymberis, Andreas	Mattei, Eugenio	Muheidat, Fadi	Omurtag, Ahmet
Lymberopoulos, Dimitrios	Matteucci, Paul Brendan	Mukkamala, Ramakrishna	Otero, Abraham
Lyu, Jingyuan	Mavoungou, Philippe	Mulvaney, David	Otto, Kevin
Ma, Da	May, Elebeoba	Muñoz-Diosdado, Alejandro	Oyarzun Laura, Cristina
Ma, King Fai	Mazzoleni, Stefano	Murakami, Yuji	Ozturk, Musa
Ma, Mengxuan	Mazzoni, Alberto	Muravchik, Carlos	Packirisamy, Muthukumaran
MacGillivray, Thomas	McAuliffe, Megan	Myers, Matthew	Padasdao, Bryson
MacPherson, Emma	McDuff, Daniel Jonathan	Mynard, Jonathan	Padilha Lanari Bó, Antônio
Madhushri, Priyanka	McGrath, Michael James	Naemura, Kiyoshi	Paffi, Alessandra
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Maestri, Roberto	McKay, J. Lucas	Nagarajan, Srikantan S.	Palladino, Joseph
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Maggioni, Eleonora	Meigal, Alexander	Nakamura, Ryota	Pandya, Shrikant
Magierowski, Sebastian	Meigas, Kalju	Nakamura, Toru	Panescu, Dorin
Maglavera, Stavroula	Melendez-Calderon, Alejandro	Nakashima, Yoshiki	Pannala, Venkat
Maglaveras, Nikolaos	Melia, Umberto Sergio Pio	Namani, Ravi	Panousopoulou, Athanasia
Maglogiannis, Ilias	Mello, Carlos	Nambu, Masayuki	Pantelopoulos, Alexandros
Mahadevappa, Manjunatha	Mellone, Sabato	Nanayakkara, Nuwan D.	Paralikar, Kunal
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Maity, Shovan	Meng, Ellis	Naveed, Hammad	Park, Kwang S.
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Makarov, Sergey	Meste, Olivier	Nelson, Christa	Passamonti, Luca
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Malandain, Gregoire	Michmizos, Konstantinos	Nemati, Shamim	Patel, Kramay

Patel, Shyamal	Qi, Jun	Salzman, Oren	Siqueira, Adriano
Patriciu, Alexandru	Qi, Wenyuan	Sameshima, Koichi	Siu, Vince
Patrick, Erin	Rafferty, Joseph	Sanches, J. Miguel	Skounakis, Emmanouil
Pattichis, Constantinos	Rajagopal, Vijayaraghavan	Sánchez Secades, Luis Alonso	Sluiter, Victor Ijzebrand
Pattichis, Marios	Ramaswamy, Palaniappan	Sanchez, Carlos	Slutzky, Marc
Patton, James	Ramirez, Julia	Sanchez-Casanova, Jorge	Snider, Joseph
Paul Chaudhuri, Buddhadev	Ramos-Garcia, Raul Ignacio	Sandberg, Frida	So, Rosa
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Payne, Stephen John	Ranta, Radu	Sander-Thömmes, T. H.	Solà-Soler, Jordi
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Penders, Julien	Reiche, Christopher Friedrich	Sankaranarayanan, Meena	Song, Dong
Peng, Yun	Reissman, Timothy	Santos, Andres	Song, Jiahui
Penny, Steven	Reni, Gianluigi	Sassi, Roberto	Sooksood, Kriangkrai
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Penzel, Thomas	Reuss, James	Sauter-Starace, Fabien	Soulier, Fabien
Perdikis, Serafeim	Rezai, Pouya	Sawan, Mohamad	Souris, Jeffrey
Perera, Alexandre	Rezzoug, Nasser	Sazonov, Edward	Spasov, Simeon
Perez-Rathke, Alan	Richter, Claudia	Scaglione, Silvia	Spincemaille, Pascal
Perperidis, Antonios	Ricotti, Leonardo	Schaefer, Gerald	Spyridonis, Fotios
Perreault, Eric	Rieta, J. J.	Schearer, Eric	Spyropoulos, Basile
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Petroff, Neil	Rocha, Ana Paula	Schlotthauer, Gaston	Stieglitz, Thomas
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Pickle, Nathaniel	Rouhani, Hossein	Sejdic, Ervin	Suarez-Antola, Roberto
Pierella, Camilla	Roundy, Shad	Seo, Jong Mo	Subramaniam, Karthik
Pilt, Kristjan	Rouse, Elliott	Seo, Joohyun	Subramanian, Sandya
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Pirogova, Elena	Ruan, Su	Sershen, Cheryl	Sugimoto, Chika
Pirondini, Elvira	Ruddy, Bryan	Seydnejad, Saeid	Sugita, Norihiro
Pisarello, Maria Ines	Rufer, Libor	Shah, Amit	Sui, Xiaohong
Pistorius, Stephen	Ruiz Fernandez, Daniel	Shahidi Zandi, Ali	Sukno, Federico
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Pourmodheji, Hossein	Salama, Guy	Silveira, Margarida	Takei, Osamu
Poza, Jesus	Salazar Afanador, Addisson	Silvestri, Antonia	Taki, Hirofumi
Prakash, Punit	Salinari, Serenella	Simon, Antoine	Talavage, Thomas
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Teixeira, Ana Rita	Varghese, Tomy	Wheeler, Bruce	Yuanfei, Huang
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Terrill, Philip Ian	Velazquez, Ramiro	Winkler, Jeff	Zariffa, Jose
Tessarolo, Francesco	Veltink, Peter	Wissenwasser, Jürgen	Zarkogianni, Konstantia
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Thielscher, Axel	Verdú, Gumersindo	Wolpert, Seth	Zarzoso, Vicente
Thinh, Nguyen	Verghese, George	Wong, Alexander	Zayed, Nourhan
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Torres, Abel	Vo, Kiet Tuan	Xiong, Jing	Zhang, Xu
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Toyoda, Shuichi	Voss, Andreas	Xu, Huijing	Zhang, Yingchun
Traver, Vicente	Vozzi, Giovanni	Xu, Jia	Zhang, Yong
Travers, Matthew	Vullings, Rik	Xu, Lisheng	Zhang, Zhuo
Trenado, Carlos	Vuong, Barry	Xu, Ziyue	Zhao, Bo
Triantafyllidis, Andreas	Vuong, Catherine	Yadav, Rajeev	Zhao, Jianhua
Tridandapani, Srin	Wac, Katarzyna	Yamaguchi, Ikuhiro	Zhao, Jichao
Tripoliti, Evanthia	Wada, Shigeo	Yamaguchi, Masaki	Zhao, Jieliang
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Tsiknakis, Manolis	Walsh, Michael	Yambe, Tomoyuki	Zheng, Yali
Tsizin, Evgeny	Waluyo, Agustinus Borgy	Yanez-Suarez, Oscar	Zhou, David
Tsujiuchi, Nobutaka	Wan Harun, Wan Abdul R.	Yang, Liangjing	Zhou, Fengfeng
Tsukamoto, Sosuke	Wan, Justin	Yang, Sungwook	Zhou, Huiyu
Turcza, Pawel	Wang, Furui	Yang, Xiaofeng	Zhou, Iris Yuwen
Uchiyama, Takanori	Wang, Haifeng	Yang, Zhi	Zhou, Jian
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Ulukaya, Sezer	Wang, Yiwen	Ye, Hongwei	Zhu, Fansan
Unguez, Graciela	Wang, Yu-Kai	Ye, Jong Chul	Zhu, Shao Ying
Uozumi, Yosuke	Wang, Zhigong	Yetik, Imam Samil	Zhu, Xin
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Vaidyanathan, Natarajan	Warren, Steve	Ying, Leslie	Zoltowski, Mariusz, Leslaw
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Valderas, María Teresa	Washizawa, Yoshikazu	Yoo, Hyeonjoong	Zouridakis, George
Valdes-cristerna, Raquel	Watabe, Hiroshi	Yoo, Paul	Zuo, Wangmeng
Valdovinos, John	Watanabe, Eiichi	Yoshida, Ken	
Valencia Murillo, Jose F.	Watanabe, Takashi	Yoshizawa, Makoto	

## 1 Page Poster Paper Reviewers:

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## Editor's Notes

The 40<sup>th</sup> Annual International Conference of the IEEE Engineering in Medicine and Biology Society hosted an electronic paper submission. It was the responsibility of the submitting Author to ensure the document was viewable and absent of errors. Said errors or viewing restrictions would prevent the Conference from including the paper in Digital Proceedings.

All conference papers were peer-reviewed by experts chosen by the Conference Editorial Board.

### Full papers by theme, presented at EMBC 2018, Honolulu:





# Keynote & Plenary Speakers



**John Webster, Ph.D.**

University of Wisconsin-Madison

**Developing New Medical Devices**

Wednesday, July 18, 2018, 10:00-11:30, Ballroom ABC

## **Biography:**

John G. Webster received the B.E.E. degree from Cornell University, Ithaca, NY, USA in 1953, and the M.S.E.E. and Ph.D. degrees from the University of Rochester, Rochester, NY, USA in 1965 and 1967, respectively.

He is Professor Emeritus of Biomedical Engineering at the University of Wisconsin-Madison, USA. In the field of medical instrumentation, he does research on an implantable intracranial pressure sensor and a comfortable sleep apnea device that has no added pressure.

He is the editor of the text: *Medical instrumentation: application and design, Fourth Edition* New York, John Wiley & Sons, 2009, and has developed 22 other books including the *Encyclopedia of medical devices and instrumentation*, Second Edition, New York: John Wiley & Sons, 2006, and 200 research papers.

Dr. Webster is a fellow of the Institute of Electrical and Electronics Engineers, Instrument Society of America, American Institute of Medical and Biological Engineering, and Institute of Physics. He has been a member of the IEEE-EMBS Administrative Committee and the NIH Surgery and Bioengineering Study Section. He is the recipient of the 2001 IEEE-EMBS Career Achievement Award.



**Martha Morrell, M.D.**

Neuropace

**Merging Brain Science with Data Science:  
Transforming Treatment with a Window to the Brain”**

Wednesday, July 18, 2018, 11:30-12:30, Ballroom ABC

**Biography:**

Dr. Morrell has been Chief Medical Officer of NeuroPace, Inc. and a Clinical Professor of Neurology at Stanford University since July 2004. Before joining NeuroPace, she was the Caitlin Tynan Doyle Professor of Clinical Neurology at Columbia University and Director of the Columbia Comprehensive Epilepsy Center at New York Presbyterian Hospital in New York City. Previously she was on the faculty of the Stanford University School of Medicine where she served as Director of the Stanford Comprehensive Epilepsy Center. A graduate of Stanford Medical School, she completed residency training in Neurology at the University of Pennsylvania, as well as fellowship training in EEG and epilepsy.

Dr. Morrell has been actively involved in helping to bring new therapies to patients. Her responsibilities at NeuroPace include all clinical and pre-clinical research for a novel responsive neurostimulator for the treatment of medically uncontrolled epilepsy. She has been actively involved in investigational trials of new epilepsy therapies as an academic investigator, and has authored or coauthored more than 150 publications.

Service to professional societies includes member of the Board of Directors of the American Epilepsy Society, member and Chair of the Board of the Epilepsy Foundation, member of the Council of the American Neurological Association and Chair of the Epilepsy Section of the American Academy of Neurology. She is an elected Ambassador for Epilepsy of the International League Against Epilepsy and received the American Epilepsy Society's 2007 Service Award for outstanding leadership and service. She is the current Chair of the American Society for Experimental Neurotherapeutics.



## **Fran Kaufman, MD**

Medtronic

### **The Journey to the Artificial Pancreas and My Role as a Pediatric Endocrinologist**

Thursday, July 19, 2018, 11:30-12:30, Ballroom ABC

#### **Biography:**

Dr. Francine Kaufman was named Chief Medical Officer and Vice President of Global Medical, Clinical and Health Affairs in April 2009. In this role, Dr. Kaufman is the key architect of the company's global diabetes strategy, as well as a leading voice for multi-disciplinary medical strategy across Medtronic. Prior to joining Medtronic in 2009, Dr. Kaufman served as Director of the Comprehensive Childhood Diabetes Center, and head of the Center for Endocrinology, Diabetes and Metabolism at Children's Hospital Los Angeles.

Dr. Kaufman is a Distinguished Professor Emerita of Pediatrics and Communications at the Keck School of Medicine and the Annenberg School of Communications at the University of Southern California, and an attending physician at Children's Hospital of Los Angeles. Dr. Kaufman was national president of the American Diabetes Association from 2002-2003. She was President of Shaping America's Health, Chair of the National Diabetes Education Program, and she served as Chair of the Youth Consultative Section of the International Diabetes Federation. In 2007, she was Co-Chair of the Diabetes Work Group for the Department of Health Services of the State of California to recommend diabetes treatment and prevention strategies for the Medicaid population. In 2005, she was elected membership in the Institute of Medicine. In 2009, she was elected to membership in the Advisory Council of the Diabetes Branch of the National Institute of Health (NIH). Dr. Kaufman graduated from Northwestern University in 1972 and received her medical degree from Chicago Medical School in 1976. She completed her residency in pediatrics and fellowship in pediatric endocrinology at Children's Hospital of Los Angeles.



## **Brian Otis, Ph.D.**

Verily Life Sciences

### **From Circuits to Sensors: Building Connected Ecosystems for Health**

Friday, July 20, 2018, 11:30-12:30, Ballroom ABC

#### **Biography:**

Dr. Brian Otis is a CTO at Verily Life Sciences and a Research Associate Professor at the University of Washington, Seattle. He received a B.S. in electrical engineering from the University of Washington, Seattle, and a M.S. and Ph.D. degree in electrical engineering from the University of California, Berkeley. He joined the faculty of the University of Washington in 2005 where he founded a chip design research lab that develops tiny, low power wireless chips for a variety of applications (neural recording, implantable devices, wearable on body wireless sensors, environmental monitoring, etc). He has previously held positions at Intel Corporation and Agilent Technologies and joined Google Inc in 2012. He was a founder of Google [x]'s smart contact lens project and leads the medical device efforts at Verily Life Sciences. He has served as a member of the Technical Program Committee of the International Solid State Circuits Conference (ISSCC) and Associate Editor of the Journal of Solid State Circuits (JSSC). His research interests include low power SoC design, exploring limitations of power and size of wireless systems, and the realization of novel biomedical devices.



## **Joe Kiani**

Masimo Corporation

### **A Story of Innovation**

Friday, July 20, 2018, 15:30-16:30, Meeting Room 316A

#### **Biography:**

As founder, Chairman and CEO of Masimo, Joe Kiani runs one of the most admired medical technology companies in the world. He co-invented – SET® Measure-through Motion and Low Perfusion pulse oximetry. Studies have shown that this revolutionary technology can reduce false alarms in pulse oximetry by 95%, can help detect life-threatening events, can help reduce blindness in premature babies and can help identify the existence of congenital heart conditions in newborns. In 2012, Kiani founded the non-profit, [Patient Safety Movement Foundation \(PSMF\)](#) with a commitment to eliminate preventable patient deaths in US hospitals and significantly reduce medical errors worldwide by the year 2020 (#0x2020). Over 4,500 hospitals have made a formal and public commitment to zero preventable deaths and over 100 healthcare technology companies have made a public pledge to share their data so that researchers can develop predictive algorithms that notify clinicians of dangerous trends. This worldwide collaboration is hoping to foster a “patient data superhighway” that will catch errors before they cause harm. In February 2018, the hospitals that had joined Patient Safety Movement reported 81,533 lives saved annually.

Sponsored by University of California Irvine





**Mark S. Humayun, M.D., Ph.D.**  
USC

**“Abiotic-Biotic Retinal Interfaces”**

Wednesday, July 18, 2018, 15:30-16:30 Meeting Room 311

**Biography:**

Mark S. Humayun, MD, PhD, is the Cornelius J. Pings Chair in Biomedical Sciences, Professor of Ophthalmology, Biomedical Engineering, and Integrative Anatomical Sciences, Director of the USC Institute for Biomedical Therapeutics, and Co-Director of the USC Roski Eye Institute. Dr. Humayun is an internationally recognized pioneer in vision restoration. He has dedicated 30 years to the development of a bioelectronic artificial retina to restore sight to the blind. His perseverance and ability to lead multi-disciplinary teams culminated in this artificial retina (Argus II) to be approved by the FDA for restoring sight; the first and only implant to have such approval. This artificial retina is also approved in Europe, Canada, Middle East, and Asia Pacific. This bioelectronic retina has enabled patients who are totally blind for decades to see large objects and letters and navigate (e.g., avoid obstacles and find doors). Dr. Humayun continues to develop the technology towards providing color vision and reading smaller font.

He has an H factor of 52 with three of his papers alone referenced more than 2,800 times by subsequent researchers. He has 114 issued patents. For his extraordinary contribution to medicine, engineering, and humanity, he was awarded United States' highest technological achievement award, the National Medal of Technology and Innovation by President Obama. He is a member of the US National Academies of Medicine, Engineering and Inventors. Dr. Humayun is an IEEE Fellow and will receive the IEEE Biomedical Engineering Award in July 2018.



**Ali Khademhosseini, Ph.D.**

UCLA

**Nano- and Microfabricated Hydrogels for Regenerative Engineering**

Wednesday, July 18, 2018, 15:30-16:30, Meeting Room 312

**Biography:**

Ali Khademhosseini is Professor of Bioengineering, Chemical Engineering and Radiology at the University of California-Los Angeles (UCLA). He is the Founding Director of the Center for Minimally Invasive Therapeutics at UCLA as well as an Associate Director of the California NanoSystems Institute. He joined UCLA in Nov. 2017 from Harvard University where he was Professor of Medicine at Harvard Medical School (HMS) where he directed the Biomaterials Innovation Research Center (BIRC). He is recognized as a leader in combining micro- and nano-engineering approaches with advanced biomaterials for regenerative medicine applications. In particular, his laboratory has pioneered numerous technologies and materials for controlling the architecture and function of engineered vascularized tissues. He has authored ~550 journal papers (H-index >100 & >39,000 citations) and 60 books/chapters. In addition, he has delivered 300+ invited/keynote lectures.

Dr. Khademhosseini's interdisciplinary research has been recognized by over 40 major national and international awards. In 2016, he received the Sr. Scientist Award of Tissue Engineering and Regenerative Medicine Society - Americas Chapter (TERMIS-AM) and in 2017 he received the Clemson Award of the Society for Biomaterials. He is also a fellow of AIMBE, Materials Research Society (MRS), Biomedical Engineering Society (BMES), Royal Society of Chemistry (RSC), Fellow of the Biomaterials Sciences and Engineering (FBSE) and American Association for the Advancement of Science (AAAS). Currently he serves on the editorial board of numerous leading journals as well as an Associate Editor for ACS Nano (IF: 13.3). He received his Ph.D. in bioengineering from MIT (2005), and MASc (2001) and BAsC (1999) degrees from University of Toronto both in chemical engineering. Read more at: <http://www.tissueeng.net/lab>



## **Kamiar Aminian**

Ecole Polytechnique Federale de Lausanne

### **Real World Movement Analysis in Health, Ageing and Disease using Body Worn Sensors: From Step Counting to 3D Motion Tracking**

Wednesday, July 18, 2018, 15:30-16:30, Meeting Room 314

#### **Biography:**

Kamiar Aminian is currently a Professor with the Institute of Bioengineering and the Director of the Laboratory of Movement Analysis and Measurement at EPFL. His research focuses on methodologies for human movement monitoring and analysis in real world conditions mainly based on wearable technologies, with an emphasis on gait, physical activity, and sport. His research aims to perform outcome evaluation in orthopaedics, to improve motor function and intervention programs in aging and patients with movement disorders and pain, and to identify metrics of performance in sport science. He is teaching in the areas of physiology and instrumentation, medical devices, biomechanics, and sports. He has authored or co-authored over 500 scientific papers published in reviewed journals, and presented at the international conferences and holds 11 patents related to medical devices.





**Sergio Cerutti, Ph.D.**

Politecnico Di Milano

**Advances in Biomedical Signal Processing: towards new Paradigms  
between Information Integration and Big Data in Health**

Wednesday, July 18, 2018, 15:30 – 16:30 Meeting Room 315

**Biography:**

He is Professor in Biomedical Engineering at the Department of Electronics, Information and Bioengineering at the Politecnico in Milano (since 1994), where he is also Chairman of the B-cube Laboratory (Biosignals, Bioimaging and Bioinformatics) in the same Department. From 1990 to 1994 he has been Professor of Biomedical Engineering at the Department of Computer and System Sciences of the University of Rome “La Sapienza”. He has been Chairman of the Bachelor Track (Diploma Universitario) in Biomedical Engineering of the Politecnico in the period 1996-2000.

In the period 2000-2006 he has been Director of the Department of Bioengineering of the same Politecnico. In the period 2010-2012 he has been Chairman of the Programs of Biomedical Engineering (1st and 2nd level Degrees) at Politecnico. His research activity is mainly dedicated to various aspects of biomedical signal and data processing and modelling related to the cardiovascular system and in the field of neurosciences. He is the Author of more than 600 indexed international scientific contributions (about 300 on indexed scientific journals), according to ISI. His h-Index is 50 (ISI) or 63 (Google Scholar). He has coordinated various research projects at national and international levels in various topics of Biomedical Engineering and Bioinformatics.

He spent over a year as a Visiting Professor at the MIT and Harvard School of Public Health, Boston MA, USA, as well as a period of 3 months at the Department of Physics of the IST (Istituto Superior Tecnico), Technical University in Lisbon, Portugal. He is Chairman of EMB18, Italian IEEE Chapter on Engineering in Medicine and Biology. He is also Chairman of the Biomedical Engineering Group of Italian AEIT (Association of Electrical Engineering and Telecommunication).

He is a Fellow member of IEEE, AIMBE and EAMBES and member of other international and national scientific associations. Since 2013 he is Member of the Ethical Committee of “Istituto Europeo di Oncologia (IEO)” and “Centro Cardiologico Monzino” in Milano. From 2016 he is also Chairman of this Ethical Committee. He is also Member of the Ethical Committee of the Politecnico in Milano. In 2009 he received the IEEE-EMBS Academic Career Achievement Award. In 2010 he received the Milan Ambassador Award in recognition of his scientific activity finalized to the organization of important Conferences and initiatives in the Conference Center of the City of Milano. He is a Member of the Group of the best Italian Scientists.





**Paul Thompson, Ph.D.**  
USC

**ENIGMA, Big Data and the Human Brain: Imaging and Genomics  
of Brain Diseases in 70,000 Individuals from 35 Countries**

Wednesday, July 18, 2018, 15:30-16:30, Meeting Room 316A

**Biography:**

Paul Thompson, Ph.D., directs the ENIGMA Center for Worldwide Medicine, Imaging & Genomics – a U.S. National Center of Excellence for “Big Data” analysis in biomedical research. Since 2009, Dr Thompson has led the ENIGMA consortium (<http://enigma.usc.edu>), a worldwide medical network of 340 institutions across 35 countries studying the major diseases of the brain, with MRI, diffusion MRI, resting state fMRI, EEG and genomics. ENIGMA has published the largest neuroimaging studies of 8 major brain disorders – including schizophrenia, bipolar disorder, major depression, ADHD and OCD – and leads international studies of Alzheimer’s disease, Parkinson’s disease, epilepsy, PTSD, anorexia, substance use, and anxiety disorders. In ENIGMA’s series of papers in Nature, Nature Neuroscience, and Nature Communications, 340 institutions pooled DNA and MRI data from over 40,000 people to identify over 100 genomic loci that influence brain structure, function and disease risk using massively-parallel distributed “big data” computing (Medland Nature Neuroscience 2015). ENIGMA analyzes factors that affect Alzheimer’s disease progression, schizophrenia, depression and bipolar illness, HIV/AIDS, substance abuse, autism, and childhood brain disorders.

Dr. Thompson’s group created the first MRI maps of Alzheimer’s disease and schizophrenia spreading in the living brain, and a method to detect brain growth in children (published in the journal Nature). Thompson directs the Imaging Genetics Center and is Associate Director of USC’s new Stevens Institute for Neuroimaging and Informatics. At USC, he is a Professor of Neurology, Psychiatry, Radiology, Pediatrics, Engineering, and Ophthalmology. Dr. Thompson obtained his M.A. in Mathematics and Greek & Latin Languages from Oxford University, England, and his Ph.D. in Neuroscience from UCLA. His team of 20 researchers includes students in neuroscience, genetics, biomedical engineering, and biomedical physics. Collaborating with over 300 imaging labs around the world, Dr. Thompson’s 1,600 published research papers combine the talents of researchers in mathematics, neuroimaging, and clinical neurology (see <http://igc.ini.usc.edu>).



**James Bassingthwaighte**  
University of Washington, Seattle

**Physiome Projects in Biological Research: Practical Philosophy**

Wednesday, July 18, 2018, 15:30-16:30, Meeting Room 316B

**Biography:**

Dr. James B. Bassingthwaighte MD Ph.D. is a Professor in the Department of Bioengineering, Biomathematics and Radiology at the University of Washington. Dr. Bassingthwaighte served as Director of the Center for Bioengineering at the University of Washington since 1975 for 5 years. He served as a Member of Advisory Board at Teranode Corporation. He serves as Director at National Space Biomedical Research Institute. He also serves as Director of the National Simulation Resource for Circulatory Mass Transport and Exchange. He is the Editor of the Annals of Biomedical Engineering and serves as Chairman of the Commission on Bioengineering in Physiology, International Union of Physiological Sciences. Dr. Bassingthwaighte joined the Mayo faculty, advancing to Professor of Physiology and of Medicine. He is Affiliate Professor of Physiology at Universiteit Maastricht, The Netherlands. Dr. Bassingthwaighte is the recipient of numerous awards such as an NIH Research Career Development Award, the Louis and Arthur Lucian Award of McGill University, the Alza Award of the Biomedical Engineering Society and the Burlington Resources Foundation Faculty Achievement Award for Research. He received his BA and MD from the University of Toronto. Following post-graduate work in Medicine and Cardiology at the Postgraduate Medical School of London, he obtained his Ph.D. in Physiology from the Mayo Graduate School of Medicine.



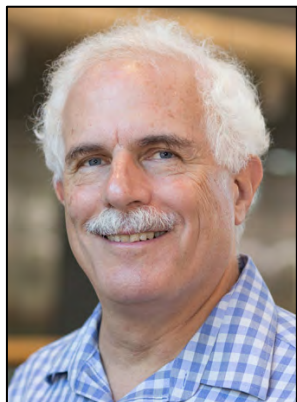
**Adam Seiver, MD, PhD, MBA, FACS, FCCM**  
Philips Healthcare

**Lessons from an Engineering Life in Medicine**

Wednesday, July 18, 2018, 15:30-16:30, Meeting Room 316C

**Biography:**

Adam Seiver serves as Chief Medical Officer for the Patient Care and Monitoring Solutions business of Philips Healthcare, with responsibility for medical direction of respiratory, emergency care, and monitoring solutions. Prior to joining industry — Respiroics in 2003, and then Philips via acquisition in 2008—he practiced trauma surgery and surgical intensive care for 20 years on the faculty of the Department of Surgery at Stanford Medical School, in Palo Alto, California. His research has focused on computer applications to critical care, emphasizing mathematical modeling and decision support. He has taught on the consulting faculty of Management Science and Engineering in the School of Engineering at Stanford University. He has also taught Decision Models and Optimization as a visiting professor in the business school at Duke University. His current clinical practice involves critical care telemedicine, directing the 161-bed eICU program (VISICU/Philips) of the Sutter Health System, Sacramento, California. Dr. Seiver holds an MD and PhD (Decision Analysis) from Stanford University, with an MBA from Duke University. He completed his surgery residency at Stanford University Hospital leading to Board certification in Surgery with Added Qualifications in Critical Care. Additionally, he is certified in Clinical Informatics by the American College of Preventative Medicine. He is a Fellow of both the American College of Surgery and the American College of Critical Care Medicine.



## **Ronald A Siegel, ScD**

University of Minnesota

### **Some Ideas in Drug Delivery Derived from Electrical Engineering**

Wednesday, July 18, 2018, 15:30-16:30, Meeting Room 318A

#### **Biography:**

Ronald A. Siegel received his ScD (1984) in EECS from MIT, under the supervision of Profs Robert Langer and Alan J. Grodzinsky. His first academic job (1984-1998) was in the Departments of Biopharmaceutical Sciences and Pharmaceutical Chemistry at the University of California at San Francisco. Since 1998 he has been Professor of Pharmaceutics and Biomedical Engineering at the University of Minnesota, and he was Dept Head of Pharmaceutics from 1999-2009. He is Fellow of the American Association of Pharmaceutical Scientists, the American Institute for Medical and Biological Engineering, and the Controlled Release Society (CRS). He was President of CRS during 1997-1998. Prof Siegel's research interests include drug delivery, polymer science, microfabrication, and mathematical modeling.



## **Nicholas A Peppas, ScD**

Cockrell Family Regents Chair in Engineering, The University of Texas at Austin

### **Nanotechnology and Bioengineering for Intelligent Medical Devices**

Thursday, July 19, 2018, 15:30-16:30, Meeting Room 312

#### **Biography:**

Nicholas A. Peppas is the Cockrell Family Regents Chaired Professor in the Departments of Chemical, Biomedical Engineering, Pediatrics and Surgery in the Dell Medical School, and Pharmacy, and Director of the Institute of Biomaterials, Drug Delivery and Regenerative Medicine of the University of Texas at Austin. His work in biomaterials, drug delivery, regenerative medicine and bionanotechnology follows a multidisciplinary approach by blending modern molecular and cellular biology with engineering principles to design the next-generation of medical systems and devices for patient treatment. Over the past 42 years he has set the fundamentals and rational design of drug delivery systems and developed models of drug and protein diffusion in controlled release devices and biological tissues. In 2012 he received the Founders Award of the National Academy of Engineering (NAE), the highest recognition of the Academy, for these contributions to the field.

Dr. Peppas is an elected member of the National Academy of Engineering, the National Academy of Medicine, the American Academy of Arts and Sciences, the National Academy of Inventors, the Chinese Academy of Engineering, the International Academy of Medical and Biological Engineering, the National Academy of France, the Royal Academy of Spain, the Academy of Athens (Greece) and the Academy of Texas. He has been recognized with awards from AIChE (Founders Award, William Walker Award, Institute Lecture, Jay Bailey Award, Bioengineering Award, Materials Award), the Biomedical Engineering Society (Distinguished Scientist Award), the American Institute of Medical and Biological Engineering (Galletti Award), the Society for Biomaterials (Founders, Clemson and Hall Awards), the Controlled Release Society (Founders, Heller and Eurand Awards) and other societies. In 2008, AIChE named him one of the “One Hundred Chemical Engineers of the Modern Era”. He has been President of the International Union of Societies of Biomaterials Science and Engineering, Chair of the Engineering Section of the American Association for the Advancement of Science, and Chair of the Council of BME Chairs. Previously, he served as President of SFB and the Controlled Release Society. He is a fellow of AAAS, AIChE, APS, ACS, MRS, SFB, BMES, AIMBE, CRS, AAPS, and ASEE. He has supervised the research of more than 110 PhDs and about 180 postdocs and graduate students.

Peppas holds a Dipl. Eng. from the NTU of Athens (1971), a Sc.D. from MIT (1973), and honorary doctorates from the Universities of Ghent (Belgium), Parma (Italy), Athens (Greece), Ljubljana (Slovenia), Patras (Greece), Santiago de Compostela (Spain) and the National Technical University of Athens (Greece), and honorary professorships from Sichuan University, Peking Union Medical College, the PLA Hospital and Medical School, and Beihang University, all in China.



## **Bradley Nelson**

ETH Zurich

### **Soft Microrobotics and its Application in Medicine**

Thursday, July 19, 2018, 15:30-16:30, Meeting Room 314

#### **Biography:**

Brad Nelson has been the Professor of Robotics and Intelligent Systems at ETH Zürich since 2002. He has over thirty years of experience in the field of robotics and has received a number of awards in the fields of robotics, nanotechnology, and biomedicine. He was named to the "Scientific American 50", Scientific American magazine's annual list recognizing fifty outstanding acts of leadership in science and technology. His lab is the undefeated international champion in Robocup's Nanogram Soccer League, and he is in the Guinness Book of World Records for the "Most Advanced Mini Robot for Medical Use." His research group has won more than a dozen best paper awards at various international conferences and in international journals.

Prof. Nelson serves on the advisory boards of a number of academic departments and research institutes across North America, Europe, and Asia and is on the editorial boards of several academic journals. He has been the Department Head of Mechanical and Process Engineering at ETH, Chairman of the ETH Electron Microscopy Center, and is a member of the Research Council of the Swiss National Science Foundation. He is also a member of the board of directors of three Swiss companies.



## **Chrit Moonen**

University Medical Center Utrecht

### **Image Guided High Intensity Focused Ultrasound**

Thursday, July 19, 2018, 15:30-16:30, Meeting Room 315

#### **Biography:**

Chrit Moonen did his Masters in Molecular Sciences and his Ph.D. in biophysics (Wageningen University). He went for a postdoctoral period to the University of Oxford (Sir Georg Radda). He then worked at the University of California at Davis as a Visiting Research Scientist before becoming head of the NIH In Vivo NMR Research Center from 1987-1996. He moved back to Europe (Bordeaux, France) in 1996 where he has been director of the laboratory "Molecular and Functional Imaging: from Physiology to Therapy" until 2011. He is currently professor at the Division of Imaging at the University Medical Center in Utrecht, the Netherlands. He was President of the "International Society of Magnetic Resonance in Medicine" (2006), of the "Society for Molecular Imaging" (2009), and of European Society for Molecular Imaging (2016). He was chairman of the 2015 meeting of the International Society for Therapeutic Ultrasound. He received the European Magnetic Resonance Award 2000, is a Fellow of the International Society of Magnetic Resonance in Medicine, of the European Society of Magnetic Resonance in Medicine and Biology, and of the World Molecular Imaging Society. His recent work is mainly in MRI guided Focused Ultrasound, image guided drug delivery, and molecular and cellular imaging.





## **Yuan-Ting Zhang**

City University of Hong Kong

### **Cardiovascular Health Engineering: from Wearable “MINDS” to Emerging Convergence Technologies**

Thursday, July 19, 2018 15:30 – 16:30 Meeting Room 316A

#### **Biography:**

Prof. Yuan-Ting Zhang is currently the Chair Professor of Biomedical Engineering at City University of Hong Kong. He was the Sensing System Architect in Health Technology at Apple Inc., California, USA in 2015. He was the founding Director of the Key Lab for Health Informatics of Chinese Academy of Sciences (CAS) and the founding Director of the CAS-SIAT Institute of Biomedical and Health Engineering. Professor Zhang dedicated his service to the Chinese University of Hong Kong from 1994 to 2015 in the Department of Electronic Engineering, where he served as the first Head of the Division of Biomedical Engineering and the founding Director of the Joint Research Center for Biomedical Engineering. Prof. Zhang was the Editor-in-Chief for IEEE Transactions on Information Technology in Biomedicine and the founding Editor-in-Chief of IEEE Journal of Biomedical and Health Informatics. He served as Vice Preside of IEEE EMBS, Technical Program Chair of EMBC'98, Conference Chair of EMBC'05, Internationale Committee Chair of EMBC'13, and Technical Program Co-Chair of EMBC'17. Prof. Zhang is currently the Editor-in-Chief for IEEE Reviews in Biomedical Engineering, Chair of 2018 Gordon Research Conference on Advanced Health Informatics, Chair of the Working Group for the development of IEEE 1708 Standard on Wearable Cuffless Blood Pressure Measuring Devices, and Chair of 2016-2018 IEEE Award Committee in Biomedical Engineering.

Prof. Zhang's research interests include cardiovascular health informatics, unobtrusive sensing and wearable devices, neural muscular modeling and pHealth technologies. He was selected on the 2014, 2015, 2016 and 2017 lists of China's Most Cited Researchers by Elsevier. He won a number of international awards including IEEE-EMBS best journal paper awards, IEEE-EMBS Outstanding Service Award, IEEE-SA 2014 Emerging Technology Award. Prof. Zhang is elected to be IAMBE Fellow, IEEE Fellow and AIMBE Fellow for his contributions to the development of wearable and m-Health technologies.



## **John Parrish, MD**

Harvard Medical School, Founder of CIMIT

### **Lost in Translation**

Thursday, July 19, 2018, 15:30-16:30, Meeting Room 316B

#### **Biography:**

Dr. Parrish is Edward Wigglesworth Distinguished Professor at Harvard Medical School, and the Chief Executive Officer and Founder of CIMIT, the Consortia for Improving Medicine with Innovation and Technology. A Boston-based consortium of major teaching hospitals, engineering schools and research laboratories, CIMIT brings together financial resources, scientific insights and business expertise to catalyze innovations that will have a major beneficial impact on healthcare. Dr. Parrish also founded the MGH-Harvard Cutaneous Biology Research Center, at the time, the largest industry-academia collaboration in all of medicine. A graduate of Duke University and Yale University School of Medicine, Dr. Parrish has spent over 30 years translating basic research into clinical care. He has over 300 publications including 7 books and is a member of the National Academy of Medicine and the American Academy of Arts and Sciences.

# Women in Engineering Luncheon Keynote Speaker



## **Elizabeth Iorns**

Science Exchange, Co-Founder & CEO

Friday, July 20, 2018, 12:30 – 14:00, Room 304AB

Dr. Elizabeth Iorns is co-founder and CEO of Science Exchange, the online marketplace for scientific research. She is also an active angel investor and a part-time partner at Y Combinator, a seed-stage accelerator widely regarded as “the world’s most powerful start-up incubator”. Her recent investments include Perlara, NURX, Antera, Notable Labs, and (via Y Combinator) Ginkgo Bioworks, Atomwise, and Bikanta. Elizabeth has been recognized as one of the “Ten People that Mattered” by Nature Magazine and one of the “50 Women Who Are Changing The World” by WIRED. Elizabeth was previously an Assistant Professor at the University of Miami’s Miller School of Medicine, where her research focused on identifying mechanisms of breast cancer development and progression. She holds a B.S. in Biomedical Science from the University of Auckland and a Ph.D. in Cancer Biology from the Institute of Cancer Research in London.

*Please note this event requires separate advance registration*

## *Early Career Achievement Award*



**Carmen Poon**

*Chinese University of Hong Kong, China*

*"For contributions to wearable sensing and endoscopic surgery"*

*Nominated by: Guang-Zhong Yang*



## *Academic Career Achievement Award*



**Neville Hogan**

*Massachusetts Institute of Technology, USA*

*"For exceptional contributions of leadership, education and mentorship in the field of biological robotics, neural control of movement, and human-machine interface."*

*Nominated by: James Patton on behalf of the Technical Committee on BioRobotics*

## *Professional Career Achievement Award*



**Howard Levin**  
*Coridea, LLC*

"For outstanding scientific, medical and technical contributions to the development of novel medical technologies and devices for the treatment hypertension and heart failure."

*Nominated by: Dorin Panescu*

## *Technical Achievement Award*



**Elliot McVeigh**

*University of California, San Diego*

““For recognition of his outstanding and pioneering contributions to the advance of the magnetic resonance field in cardiac studies, with many seminal works now translated in the clinical practice.”

*Nominated by: Enrico Grisan*

## *Technical Achievement Award*



**Ellis Meng**

*University of Southern California*

"For outstanding contributions to biomedical microelectromechanical systems and their applications in drug delivery, microsensors, and neural interfaces"

*Nominated by: Michael Khoo*

*2018 EMBS Chapter Awards*  
**Outstanding Performance Award EMBS Chapter**  
*EMBS Turkey Chapter*

IEEE EMBS Turkey Chapter has been very active in 2017-2018. The annual conferences technically co-sponsored by our chapter were very beneficial to our members by means of their rich scientific and social programs. Medical Technologies Congress, TIPTEKNO-2017 was held in Trabzon, Turkey on October 12-14, 2017.

The Scientific Meeting on Electrical-Electronics & Biomedical Engineering and Computer Science (EBBT'2017) took place in April 20-21, 2017 at the Tepekent Campus in Istanbul Arel University.

In addition to these conferences where the latest information is exchanged among researchers on technical advances in the Biomedical Engineering area, a variety of student activities have been organized. EMBS Turkey student conference held in Yeditepe University Conference Hall in May 2017 was a big hit with more than 900 participants and a great program.

IEEE EMBS ISC'18 EUROPE organized May 5-6, 2018 by Izmir Katip Celebi University, IEEE Student Chapter in Izmir, Turkey.

After being selected for the Outstanding Performance Award EMBS Chapter for 2018, the EMBS Turkey Chapter will continue working hard with the upcoming technical and social events for its members and students to promote the IEEE EMBS and Biomedical Engineering field.



## *2018 EMBS Chapter Awards*

### **Outstanding Performance Award EMBS Student Chapter/Club**

#### **EMBS Student Chapter CICB Concepción**

The Carleton "The IEEE EMBS Biomedical Engineering Student Chapter of the University of Concepción, Chile (or "Capítulo de Ingeniería Civil Biomédica CICB Concepción") is an organization created by students in June 2011. It started as a Student Club, and became a Student Chapter in 2016. Our organization is formed by undergraduate and graduate students from different disciplines such as Biomedical, Electrical and Bioengineering.

Our goal is to promote the development of Biomedical Engineering in the region and the country, and to bring science and technology closer to the community to contribute to the comprehensive formation of the students of Biomedical Engineering and related areas.

Within our activities, we have talks and workshops in various areas such as "Design and 3D printing", "PCB Design", "Development of Mobile Applications", "Introduction to Programming" and "IoT". We sponsor the "Programando Futuro" initiative that brings programming and electronics closer to primary school children. We are the organizers of the "Women in Engineering Seminar", which promotes the visibility of women in various engineering specialties. Also, we actively participate in the organization of the Annual Biomedical Engineering Congress (CAIB) that manages to bring together students and professionals from all over the country to talk about the advances developed in the area of engineering for medicine and health.

In 2012, our group was recognized by the EMBS for "Best New Club / Student Chapter" in San Diego, United States. In 2013, we received the "Outstanding Performance Award for Student Branch Club". Finally, this year we have the honor of being recognized by the "Outstanding Performance Award EMBS Student Chapter or Club for 2018". This recognition of our effort and volunteer work not only fills us with joy but motivates us to continue advancing and striving every day to inspire new students and future professionals in the field of biomedical engineering.





## *2018 EMBS Chapter Awards*

### **EMBS Best New Student Chapter Chapter/Club**

#### **EMBS UIC Student Branch-University of Illinois at Chicago, EMB18**

The IEEE Engineering in Medicine and Biology Chapter at University of Illinois at Chicago (UIC) was established in February 2017. Our young chapter is devoted to enhancing the professional development of all engineers in the context of engineering applied to medicine and biology. Our mission is to expose students to engineering principles outside of the curriculum, allowing the students to advance their engineering skill set and apply their knowledge to real-world problems.

In the first year of our establishment, we have hosted multiple events, including the Distinguished Lecturer where Dr. Michael Friebe, Otto von Guericke University, spoke about medical device design and how to prevent poor devices from reaching the market. Sixty attendees from various engineering departments were present at the talk. The chapter also directed and sponsored two ongoing projects. The first project focuses on constructing a humanoid robot, and the second project's goal is to develop a prosthetic arm that can be controlled using a brain-computer interface. We also attended the IEEE Region 4 Student Conference at Northern Illinois University.



## IEEE Biomedical Engineering Award



**Mark S. Humayun**

*For contributions to the bioelectric retinal implant*

A pioneer in vision restoration, Mark S. Humayun's development of the Argus II bioelectric artificial retina is improving patient quality of life by restoring sight to the blind. The first and to date only artificial retina to be both approved by the U.S. FDA and receive the European CE mark, the device receives image data from an external camera that is wirelessly transmitted to an electronic array implanted on the retina, enabling patients who are blind to recover enough vision to see letters and large objects and navigate obstacles. Key to the realization of the implant was Humayun's ability to lead diverse teams of engineers and combine the unique elements of electrical/biomechanical engineering, optics, materials science, and miniaturization. Humayun's current focus with the implant is on providing color vision and the ability to read smaller text.

An IEEE Fellow, Humayun is a professor at the University of Southern California, Los Angeles, CA, USA.

*Sponsored by the IEEE Circuits and Systems Society  
and IEEE Engineering in Medicine and Biology Society*



## *IEEE Medal for Innovations in Healthcare Technology*



**Thomas F. Budinger**

Thomas F. Budinger's groundbreaking work has defined how radiation can be safely applied to medical imaging, enabling the development of positron emission tomography (PET) and single photon emission computed tomography (SPECT) radiotracers critical to investigating conditions including cancer, heart disease, Alzheimer's disease, and brain injury. His research group at the Lawrence Berkeley National Laboratory has made world-class contributions in the fields of radiotracer development, radiotracer imaging, and tomographic image reconstruction. Budinger pioneered the use of the 82-Rb generator for heart imaging, which was commercialized under the brand name CardioGen-82, for clinical use. He performed the first SPECT dynamic imaging study of the human heart, which required a novel combination of list-mode data acquisition, cardiac gating, attenuation measurements of the spatially inhomogeneous human chest, and tomographic reconstruction. Budinger's team created the *Primer on Reconstruction Algorithms*, which was distributed worldwide during the late 1970s and 1980s, allowing scientists and students to gain hands-on experience in computed tomography using radionuclides or X-rays. This work also led to the quantitative understanding of how time-of-flight could be used in PET and how the statistical noise in reconstructed PET images could be reduced as the timing resolution was improved. These concepts are found in PET scanners being used today. Under his leadership, the construction of the PET 280 and the PET 600 scanners demonstrated how the limits of PET resolution could be approached. The PET 600 was constructed using 600 individually paired detectors and photomultiplier tubes to obtain a landmark 2.3-mm resolution. Budinger was a key player in the development of the Committee on Medical Internal Radiation Dose (MIRD) guidelines for safe use of radiopharmaceuticals. The MIRD Primer was published in 1988, providing outlined models and methods for determining organ dosimetry. He described, from biophysical principles and experiments, the safety of magnetic resonance imaging that is leading to human studies at 10 Tesla and beyond.

An IEEE Life Member and member of both the U.S. National Academy of Medicine and National Academy of Engineering, Budinger is a professor of bioengineering at the University of California, Berkeley, Berkeley, CA, USA.

## 2018 IEEE Newly Elected Fellows

**Pamela Ann Abshire**

*for contributions to CMOS biosensors*

**Gary Christensen**

*for contributions to medical image registration and analysis*

**Dario Farina**

*for contributions to neuromuscular electrophysiology and neurorehabilitation*

**Thomas Furness**

*for leadership in virtual and augmented reality*

**Cuntai Guan**

*for contributions to brain-computer interfaces and applications*

**Kullervo Hynynen**

*for contributions to image-guided therapeutic focused ultrasound*

**Leon Iasemidis**

*for developments in epileptic seizure prediction and closed-loop brain stimulation*

**Lynette Jones**

*for contributions to tactile and thermal displays*

**Sung Kim**

*for contributions to the design of microfabricated neural prosthetic devices*

**Pablo Laguna Larosa**

*for contributions to cardiac biomedical signal processing*

**Zhenqiang Ma**

*for contributions to flexible and biodegradable microwave electronics*

**Paul Meaney**

*for contributions to microwave tomography and its translation to clinical use*

**Konstantina Nikita**

*for contributions to bioelectromagnetics and implantable antennas for medical applications*

**Barbara Oakley**

*for outreach through online engineering pedagogy*

**Constantinos Pattichis**

*for contributions to medical diagnostic and mobile health systems*

**Josien Pluim**

*for contributions to medical image analysis*

**Badrinath Roysam**

*for contributions to image processing algorithms for biological microscopy*

**Dinggang Shen**

*for contributions to medical image analysis*

**Jocelyne Troccaz**

*for contributions to robotics and imaging for medical applications*

**Stephen T Wong**

*for leadership in drug discovery, systems biology, bioinformatics, and health analytics*

**Habib Zaidi**

*for contributions to quantitative multimodality molecular imaging*

## *EMBS Past Award Recipients*

### Professional Career Achievement Awards

- 2018: **Howard Levin**
- 2017: **Karl E. Friedl**
- 2015: **Matthew O'Donnell**
- 2011: **Yongmin Kim**
- 2009: **Luke Lee**
- 1979: **Robert Plonsey**
- 1974: **Dean L. Franklin**
- 1973: **Donald F. Childers**
- 1968: **Wilson Greatbatch**
- 1967: **Herman Schwan**
- 1963: **Otto Schmitt**
- 1961: **Britton Chance**
- 1956: **Edward F. MacNichol**

### Academic Career Achievement Awards

- 2018: **Neville Hogan**
- 2017: **Nitish Thakor**
- 2016: **Maryellen Giger**
- 2015: **Bin He**
- 2014: **Max A. Viergever**
- 2013: **Theodore W. Berger**
- 2012: **Peter Hunter**
- 2011: **K. Kirk Shung**
- 2010: **Robert S. Langer**
- 2009: **Sergio Cerutti**
- 2008: **Roger Barr**
- 2007: **Jose Principe**
- 2006: **Jean-Louis Coatrieux**
- 2005: **Ewart Carson**
- 2004: **Michael R. Neuman**
- 2003: **Ante Santic**
- 2002: **Willis J. Tompkins**
- 2001: **John G. Webster**
- 2000: **Max Schaldach**
- 1999: **Fernand A. Roberge**
- 1997: **J. Lawrence Katz**
- 1996: **Max E. Valentinuzzi**
- 1995: **Floyd Dunn**
- 1994: **Wilson Greatbatch**
- 1993: **John M. Reid**
- 1992: **Edwin L. Carstensen**

### Early Career Achievement Award

- 2018: **Carmen Poon**
- 2017: **Chulhong Kim**
- 2016: **Lei Ding**
- 2015: **Danielle S. Bassett**
- 2014: **Qi Wang**
- 2013: **Muhammad H. Zaman**
- 2012: **Utkan Demirci**
- 2011: **Jose M. Carmena**
- 2010: **Dario Farina**
- 2009: **Silvestro Micera**
- 2008: **Ali Khademhosseini**
- 2007: **Tejal Desai**
- 2006: **Alejandro Frangi**
- 2005: **Stephen Boppart**
- 2004: **Susan Hagness**
- 2003: **Paolo Vicini**
- 2002: **Dorin Panescu**
- 2001: **David Beebe**
- 2000: **James Collins**
- 1999: **Zhi-Pei Liang**
- 1997: **Metin Akay**
- 1996: **Joan E. Sanders**
- 1995: **Atam P. Dhawan**
- 1993: **Rory A. Cooper**
- 1992: **Yitzhak Mendelson**
- 1991: **Blake Hannaford**
- 1990: **Janie M. Fouke**
- 1988: **Yongmin Kim**
- 1986: **George V. Kondraske**

## *EMBS Past Award Recipients*

### **William J. Morlock Award**

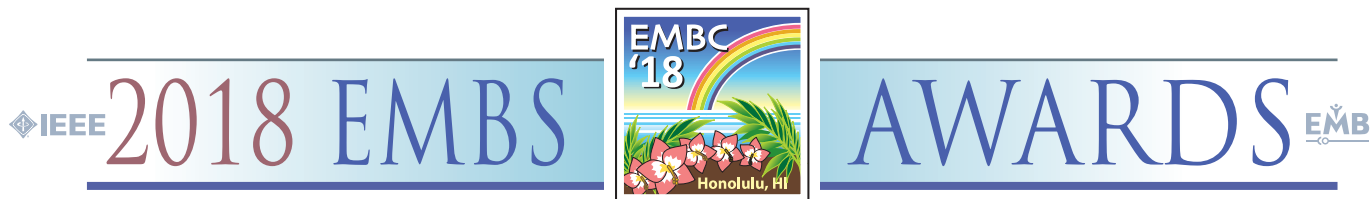
- 2017: **Ali Khademosseini**
- 2012: **Reese S. Terry, Jr.**
- 2011: **Rahul Mehra**
- 2010: **Mark Kroll**
- 2009: **Dorin Panescu**

### **Distinguished Service Award**

- 2018: No Award Given
- 2016: **Bruce Wheeler**
- 2015: **Zhi-Pei Liang**
- 2014: **Bin He**
- 2013: **Donna Hudson**
- 2011: **Maximus A. Viergever**
- 2010: **Yongmin Kim**
- 2009: **John W. Clark Jr.**
- 2008: **Henrietta Galiana**
- 2007: **Nathalie Gosset**
- 2006: **Yuan-Ting Zhang**
- 2005: **Jose Principe**
- 2004: **John Enderle**
- 2003: **Christian Roux**
- 2002: **Swamy Laxminarayan**
- 2001: **Metin Akay**
- 2000: **Jack Iverson**
- 1999: **Jean-Louis Coatrieux**
- 1998: **Susan M. Blanchard**
- 1996: **Michael R. Neuman**
- 1995: **Charles Robinson**
- 1994: **Barry Feinberg**
- 1993: **Eli Fromme**
- 1992: **Swamy Laxminarayan**
- 1990: **Alvin Wald**
- 1983: **Eli Fromme**

### **Technical Field Awards**

- 2018: **Elliot McVeigh**
- 2018: **Ellis Meng**
- 2017: **Guang-Zhong Yang**
- 2017: **Anant Madabhushi**
- 2016: **Stephen Boppart**
- 2016: **Jeffrey Fessler**
- 2015: **Nigell Lovell**
- 2015: **Russell H. Taylor**
- 2014: **Brian T. Cunningham**
- 2014: **Zhi-Pei Liang**
- 2013: **Nicolas Chbat**
- 2013: **Ali Khademhosseini**
- 2012: **Rashid Bashir**
- 2011: **Michael Unser**
- 2011: **Lihong Wang**
- 2010: **Xiaochuan Pan**
- 2010: **Kenji Sunagawa**
- 2010: **Nitish Thakor**



## 2018 EMBC Student Paper Competition

### Geographic Finalists

#### **North America**

##### **Sina Miran**

*University of Maryland, College Park*

*Real-Time Decoding of Auditory Attention from EEG via Bayesian Filtering*

#### **Europe**

##### **Beatrice Barra**

*University of Fribourg*

*Selective Recruitment of Arm Motoneurons in Nonhuman Primates Using Epidural Electrical Stimulation of the Cervical Spinal Cord*

#### **Asia –Pacific**

##### **Seongyeon Kim**

*Korea Advanced Institute of Science and Technology (KAIST)*

*Improved Target Specificity of Transcranial Focused Ultrasound Stimulation (TFUS) Using Double-Crossed Ultrasound Transducers*

#### **Middle East-Africa**

##### **Mohamed A. Bahloul**

*King Abdullah University of Science and Technology*

*Three-Element Fractional-Order Viscoelastic Arterial Windkessel Model*

#### **South America**

##### **Lucas Fonseca**

*Universidade de Brasília*

*Investigating Upper Limb Movement Classification on Users with Tetraplegia as a Possible Neuroprosthesis Interface*

## 2018 EMBC Student Paper Competition

### Open Finalists

**Michael Langenmair**

*Universitätsklinikum Freiburg*

*Low Temperature Approach for High Density Electrical Feedthroughs for Neural Implants Using Maskless Fabrication Techniques*

**Christine F Martindale**

*Friedrich-Alexander-Universität*

*Erlangen-Nürnberg*

*Mobile Gait Analysis Using Personalised Hidden Markov Models for Hereditary Spastic Paraplegia Patients*

**Nil Zeynep Gurel**

*Georgia Institute of Technology*

*Unobtrusive Heartbeat Detection from Mice Using Sensors Embedded in the Nest*

**Dung Phan**

*Deakin University*

*Effect of Parkinsonism on Proximal Unstructured Movement Captured by Inertial Sensors*

**Alejandro Azocar**

*University of Michigan*

*Perception of Mechanical Impedance During Active Ankle and Knee Movement*

**Mohammadjavad Eslamian**

*University of Houston*

*Direct Measurement of Mass Transport in Actuation of Conducting Polymers Nanotubes*

**Giulia Gerboni**

*University of Melbourne*

*Cortical Brain Stimulation with Endovascular Electrodes*

**Chen-Ying Hung**

*National Tsing Hua University*

*Improving Young Stroke Prediction by Learning with Active Data Augmenter in a Large-Scale Electronic Medical Claims Database*

**Enzo Mastinu**

*Chalmers - University of Technology*

*Myoelectric Signals and Pattern Recognition from Implanted Electrodes in Two TMR Subjects with an Osseointegrated Communication Interface*

**Ravikiran Mane**

*Nanyang Technological University*

*Quantitative EEG As Biomarkers for the Monitoring of Post-Stroke Motor Recovery in BCI and Tdcs Rehabilitation*



*2017 EMBC Student Paper Competition  
Award Recipients*



**EMBS Student Paper Competition Award Recipient:**

***First Place Award Recipient:***

**Gabriela Torres**

*University of North Carolina, Chapel Hill & North Carolina  
State University*

***Second Place Award Recipient:***

**Soojin Lee**

*University of British Columbia*

***Third Place Award Recipient:***

**Eli Kinney-Lang**

*University of Edinburgh*



**The IEEE Engineering in Medicine and Biology Society** advances the application of engineering sciences and technology to medicine and biology, promotes the profession, and provides global leadership for the benefit of its members and humanity by disseminating knowledge, setting standards, fostering professional development, and recognizing excellence.

The field of interest of the IEEE Engineering in Medicine and Biology Society is the application of the concepts and methods of the physical and engineering sciences in biology and medicine. This covers a very broad spectrum ranging from formalized mathematical theory through experimental science and technological development to practical clinical applications. It includes support of scientific, technological and educational activities.

## PUBLICATIONS

IEEE PULSE: A Magazine of the IEEE Engineering in Medicine and Biology Society  
Transactions on Biomedical Engineering  
Journal of Biomedical and Health Informatics Life Sciences Letters  
Transactions on Neural Systems and Rehabilitation Engineering Transactions on Medical Imaging  
Transactions on NanoBioscience  
Transactions on Computational Biology and Bioinformatics Transactions on Computational Imaging  
Transactions on Biomedical Circuits and Systems Reviews on Biomedical Engineering  
Journal on Translational Engineering in Health & Medicine  
IEEE Transactions on Radiation and Plasma Medical Sciences  
Journal on Electromagnetics, RF & Microwaves in Medicine  
Electronic Products

## ELECTRONIC PRODUCTS

EMBS Electronic Resource

## CONFERENCES

Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)  
IEEE EMBS Special Topic Conference on Neural Engineering (NER)  
International Symposium on Biomedical Imaging (ISBI)  
International Conference on Biomedical Robotics and Biomechatronics (BIOROB)  
International Conference on Rehabilitation Robotics (ICORR)  
Healthcare Innovation and Point-Of-Care Healthcare Technologies Conference (HICPT)  
EMBS Micro and Nanotechnology in Medicine (MNM)  
IEEE EMBS International Conference on Body Sensor Networks (BSN)  
IEEE EMBS International Conference on Biomedical and Health Informatics (BHI)  
IEEE EMBS Student Conferences: For Students, By Students  
Grand Challenges Conference Series (GCBE)

## SUMMER SCHOOLS sponsored by EMBS

International Summer School on Biomedical Imaging  
International Summer School on Biomedical Signal Processing  
International Summer School on Biocomplexity, Biodesign and Bioinnova  
International Summer School on Information Technology in Biomedicine  
International Summer School on Emerging Technologies and Applications in Telemedicine  
International Summer School on Neural Engineering  
International Summer School on Computer Modeling in Medicine



# Understanding the Program Coding

The conference program is scheduled for a specific day, time slot, and track.

A session code in the program will therefore have the following format:

Day	Time Slot	Track
We	A	T1

- WeAT1      This is a schedule code with a designating 'A' time slot on Wednesday (8:00-9:30) for track '1'.

Level

1

LEGEND

Information desk

Defibrillator

Escalator (2nd Fl. Parking)

Escalator (3rd & 4th Fl.)

Elevator

Restroom (Men)

Restroom (Women)

Restroom (Universal)

Pay phone

TDD / Pay phone

ATM

Vending area

Water fountain

Bottle filler

Smoking area

LCD board

Parking

Bicycle Parking

Entrance

Automatic entry door

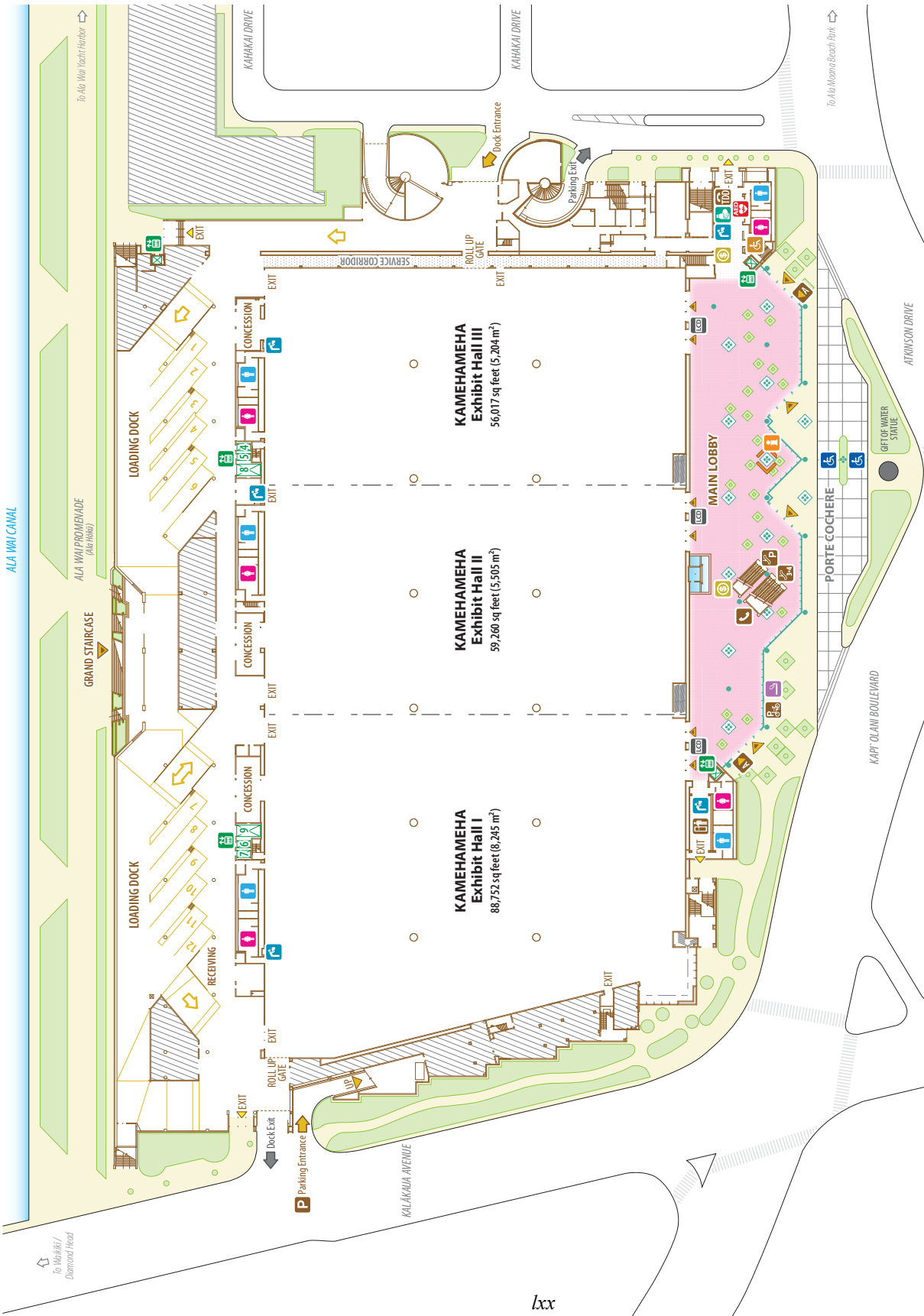
Plants / grass area

Walkway

Crosswalk

Service corridor

Accessible Passenger Loading Zone



Complimentary  
Wi-Fi Area  
Connect to : Hawaii Free Wi-Fi

**HAWAII**  
CONVENTION CENTER  
Where Business and Aloha Meet

1 EXHIBIT HALL / LOBBY



Level

2

LEGEND

Information desk

Parking cashier

Parking pay station

Electric Vehicle Charging Station

Escalator (2nd Fl Parking)

Escalator (3rd & 4th FL)

Elevator

Vending area

Smoking area

LCD board

Parking

Entrance

Automatic entry door

Plants / grass area



Complimentary  
Wi-Fi Area  
Connect to : Hawaii Free Wi-Fi

2

PARKING

CONVENTION CENTER
   
 Where Business and Aloha Meet



Level

3

LEGEND

Information desk

Business center

808 808 Café

First aid

Defibrillator

Escalator (2nd Fl. Parking)

Escalator (3rd & 4th Fl.)

Elevator

Restroom (Men)

Restroom (Women)

Art Display

ATM

Vending area

Water fountain

Bottle filler

Smoking area

LCD board

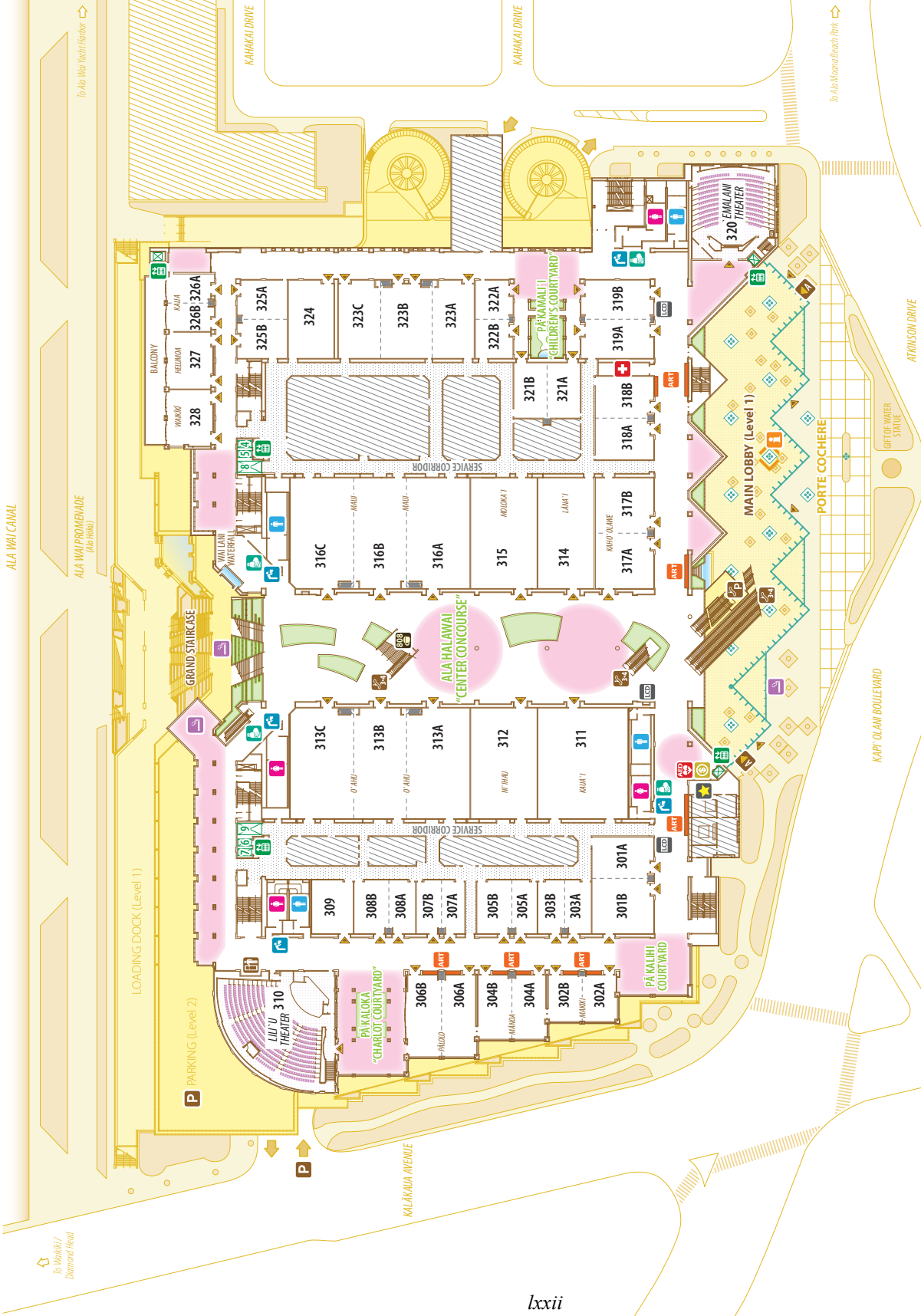
Parking

Entrance

Automatic entry door

Plants / grass area

Service corridor



Complimentary  
Wi-Fi Area  
Connect to : Hawaii Free Wi-Fi

**HAWAII**  
CONVENTION CENTER  
Where Business and Aloha Meet

3 MEETING ROOM / THEATERS



Level
4

LEGEND

Defibrillator

Escalator (3rd & 4th FL)

Elevator

Restroom (Men)

Restroom (Women)

Water fountain

Smoking area

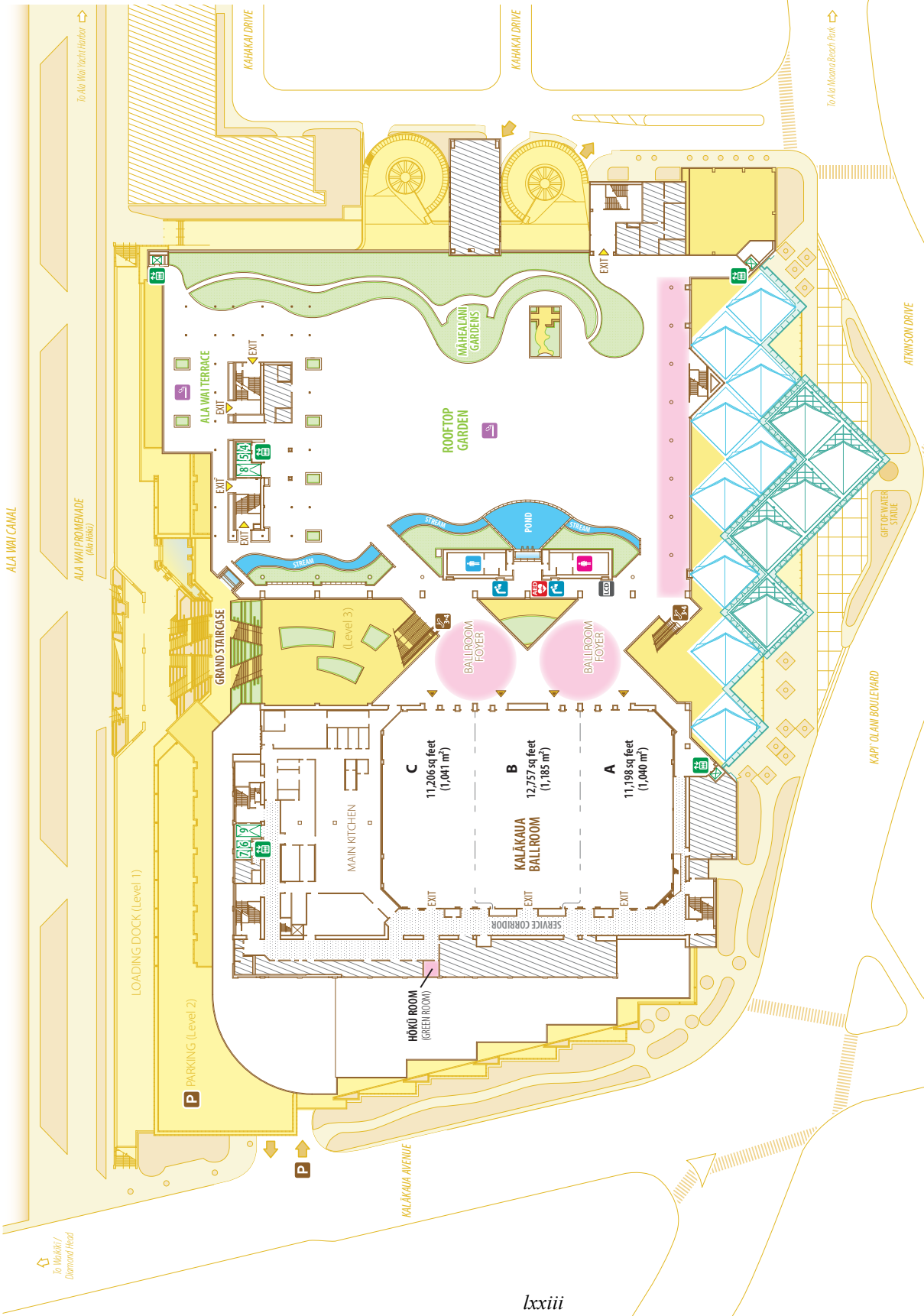
LCD board

Parking

Entrance

Plants / grass area

Service corridor



HAWAII

CONVENTION CENTER

Where Business and Aloha Meet

Complimentary
Wi-Fi Area

Connect to : Hawaii Free Wi-Fi

4

BALLROOM / ROOF TOP GARDEN





# The IEEE Engineering in Medicine and Biology Society

## Mentor Program



**Curious? Don't take our word for it! Here's what some of our program participants are saying...**

*"The EMBS mentoring program is fantastic. It allowed me to reconnect with the profession I love, and I so enjoy offering encouragement and sharing the lessons I've learned along the way with a very bright, up and coming biomedical engineer."*

*"My EMBS mentor is amazing! She helped me so much without being 'overly intrusive' and introduced me to some incredibly helpful industry resources and contacts, that will come in really handy during my job search."*

Open to all EMBS members, our mentor program provides students and young professionals interested in the biomedical engineering profession with direct access to experienced mentors who can share valuable career guidance and advice, and contribute to professional and personal development. The program also provides experienced professionals with the opportunity to share their knowledge and inspire, encourage, and support future biomedical engineers.

### Mentors

(Professors, Industry Professionals)

Want to give back to your community? Serve as a role model, and provide guidance to the next generation of biomedical engineers.

Expand your own network, and connect with others in the field.

### Mentees

(Students/Young Professionals)

Have a question about one of the areas of Biomedical Engineering? Find a mentor who can explain and help you.

Network! Develop business contacts, access important industry information and activities, and gain valuable insights from experienced and successful professionals.

**Learn more and sign up now!**

The mentor program is a valuable part of your membership in EMBS. Visit [www.embs.chronus.com](http://www.embs.chronus.com) to get started.

There, you will find all the information you'll need, along with frequently asked questions for both mentees and mentors.

### Connect with us!

IEEE Engineering in Medicine and Biology Society  
445 Hoes Lane  
Piscataway, New Jersey, USA 08854  
**e-mail: [emb-exec@ieee.org](mailto:emb-exec@ieee.org)**



Find us on:



## Connecting top talent to the best biomedical engineering jobs around the world.

No matter where you are in your career journey, whether you're trying to land your very first job, or if you've got years of experience under your belt, be sure to include EMBS' extensive network in your search.

***The EMBS Career Center is the place to start!***

We designed our Career Center with you in mind.  
We connect our members with top employers around the world.



### Jobseekers

***View Jobs:*** Access the newest and freshest jobs available to professionals seeking employment.

***Post an anonymous resume:*** Post your resume online today! Whether you're actively or passively seeking work, your online resume is your ticket to great job offers.

***Personal Job Alerts:*** Create Job Alerts and never let a matching job opportunity pass you by! New jobs that match your search criteria will be emailed directly to you.

***Create Job Seeker Account:*** Log into your account to begin managing your job search. Create and manage job alerts and view job offers from employers.

### Employers

***Post a Job:*** Reach the most qualified candidates by posting your job opening on our online Career Center.

***View the Resumes:*** Check out resumes today! We connect you directly with the most talented professionals in biomedical engineering.

***Products and Pricing:*** Regardless of your staffing needs or budget, we have a recruitment product that will fit your business.

***Access Your Account:*** Log in to begin managing your online recruiting account. Post jobs to our site and browse candidates interested in your positions.

### Connecting Academia with Industry

Be sure to check out EMBS' regional career development opportunities, online resources, and special events. We're working hard to connect our members in academia with employers in biotech, medical device and pharmaceutical companies around the world.

**Questions? Let us hear from you! Send an email to [emb-exec@ieee.org](mailto:emb-exec@ieee.org).**

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## Call for Papers

**The 2nd IEEE Life Sciences Conference (LSC) will be held in Montreal, Canada 28-30 October 2018.** The IEEE Life Sciences Technical Community (LSTC), which is supported by multiple IEEE member societies, is the sponsor of the conference. As such, the conference will cover diverse topics within the theme.

LSC 2018 will include tutorials and a scientific program composed of plenary talks, invited sessions, Lecture and poster presentations of peer-reviewed papers. In addition, there will be a host of special events, including a Standards Track, an IEEE Women in Engineering event, a High School Competition, a graduate students' competition, and other Initiatives to be announced shortly.

All are encouraged to submit papers containing original contributions to be considered for presentation at LSC 2018. Accepted 4-page regular papers will be published in the conference proceedings and included in IEEE Xplore. To communicate late scientific findings and to encourage attendance by a broader audience, LSC 2017 will provide additional presentation opportunities via a second track featuring posters.

Topics include, but are not limited to:

- |  |  |
|--|--|
| 1. Smart medical devices and technologies              | 11. Rehabilitation and assistive technologies          |
| 2. Wearable sensors and Smart garments/textiles        | 12. Deep learning and pattern recognition              |
| 3. Biosensor technologies, mobile-health apps          | 13. Bioinformatics, and Biometrics                     |
| 4. Signal and image processing and technologies        | 14. Electronic medical records, and IoT for healthcare |
| 5. Data preprocessing, compression and transmission    | 15. Brain-computer interfaces                          |
| 6. Data mining, cleansing, management, and integration | 16. Wireless communication and networking              |
| 7. Synthetic biology                                   | 17. Energy harvesting/scavenging technology            |
| 8. Big Data for healthcare                             | 18. Medical control systems                            |
| 9. Virtual reality (VR) in healthcare and medicine     | 19. Security and privacy                               |
| 10. Point of Care devices and technologies             | 20. Social implications of technology                  |

Schedule for 2-page & 4-page Paper Submissions	Schedule for Special Session and Tutorial Proposals
Submission New Deadline : June 18, 2018	Submission of Special session proposal: June 25, 2018
Notification of Acceptance/Rejection: August 20, 2018	Submission of Tutorial proposal: June 25, 2018
Final Abstract/Paper Submissions: September 10, 2018	Notification of Acceptance/Rejection: July 5, 2018

For any information, please visit the LSC'18 webpage: <http://lsc.ieee.org/2018/> | please contact General Co-Chairs: [mohamad.sawan@polymtl.ca](mailto:mohamad.sawan@polymtl.ca) or [carolyn.mcgregor@uoit.ca](mailto:carolyn.mcgregor@uoit.ca)





10-14 December 2018  
Grand Hyatt Kauai, Hawaii

## EMBS Micro and Nanotechnology in Medicine Conference

TRANSLATING TECHNOLOGY FROM THE BENCH TO THE BEDSIDE

**CALL FOR PAPERS** - Biomedical grand challenges facing our society can be addressed at the scale of biology with Micro and Nanoscale technologies. These technologies hold great potential for diagnostics, therapeutics, enhancement of physiological function, disease management, or early monitoring and prevention. IEEE EMBS is sponsoring the fourth biennial Conference on Micro and Nanotechnology in Medicine to foster interaction between scientists, engineers, entrepreneurs and medical researchers in the context of real-world medical needs and issues. The Conference will promote vigorous and open dialogue towards groundbreaking solutions to previously unaddressed problems and cutting edge technologies for faster, more quantitative, and less expensive biomedical solutions using advances in Micro and Nanotechnology.

*Papers in the following technical areas are welcome:*

- Cellular Technologies
- Neurotechnologies
- Diagnostics
- Regenerative Medicine
- Nanomedicine
- Life Science Research Tools
- Oncology
- Imaging
- DNA Nanotechnology

### Keynote Speakers



**Paula Hammond**  
MIT



**Pierre Khuri-Yakub**  
Stanford



**Tejal Desai**  
UC San Francisco



**David Beebe**  
U of Wisconsin

### Submission Instructions

Submissions will be accepted for poster presentations. Authors will be given the option to submit research as 1 Page Poster Research Paper (non-publishable) or to submit research as a Contributed Paper (up to 4 pages, publishable) in IEEE Xplore.

#### Contributed Papers (up to 4 Pages)

Submission site OPENS  
Submission Deadline  
Accept/reject notification  
Final submission deadline

April 20, 2018  
July 30, 2018  
August 20, 2018  
September 10, 2018

#### 1-page papers (Research Poster Papers)

Submission OPENS  
Submission deadline  
Accept/reject notification  
Final submission deadline

April 20, 2018  
August 20, 2018  
September 4, 2018  
September 17, 2018

<https://mnm.embs.org/2018/>

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### Confirmed Speakers

Rashid Bashir	Jackie Linnes
Anja Boisen	Michel Maharbiz
Elliot Botvinick	Scott Manalis
Cullen Buie	Nick Melosh
Brian Cunningham	Ellis Meng
David Eddington	Hywel Morgan
Polly Fordyce	Aydogan Ozcan
Deborah Fygenson	Kamlesh Patel
Wei Gao	Erkin Seker
Steven George	Ajay Shah
Keisuke Goda	William Shih
Carlotta Guiducci	Hirofumi Shintak
Amy Herr	Anderson Shum
Dean Ho	David Sinton
I-Ming Hsiung	Tom Soh
Dan Huh	Aaron Streets
David Issadore	Winnie Svendsen
Noo Li Jeon	Shoji Takeuchi
Ravi Kapur	Ashleigh Theberge
Ali Khademhosseini	Mehmet Toner
Catherine Klapperich	Albert van den Berg
Sunghoon Kwon	Aaron Wheeler
Abraham Lee	David Wood
CT Lim	Paul Yager

### Conference Chairs

Dino DiCarlo, UCLA  
Elliot Hui, UC Irvine  
Sumita Pennathur, UC Santa Barbara

**NER'19**20-23 March, 2019  
San Francisco, CA, USA

International IEEE EMBS Conference on

**Neural  
Engineering**

## "Neurotechnologies for Medical Therapies and Beyond"

The **9th International IEEE EMBS Conference on Neural Engineering** will be held at the Hilton San Francisco Union Square Hotel on **March 20-23, 2019**.

The conference program will feature preconference workshops, plenary talks, invited talks, and poster presentations.

All papers will be peer reviewed. Accepted full-length 4-page papers will appear in the Conference Proceedings.

Members of the Neuroscience, Engineering and Bioethics Communities are encouraged to attend this highly multidisciplinary meeting. The conference will highlight emerging neurotechnologies for the restoration and enhancement of impaired sensory, motor, and cognitive functions, novel engineering tools for elucidating brain function, and discussions on the ethics of neurotechnology use and adoption by impaired and healthy individuals.

### Contributions are invited in the following areas (but not limited to):

- Brain-machine and brain-computer interfaces
- Central and peripheral neural interfaces
- Nanotechnology, circuits and materials
- Bioelectronic medicine
- Neural prostheses
- Neuromodulation
- Neurorehabilitation
- Neural decoding and encoding algorithms
- Neural computation and modeling
- Neural imaging
- Neuroethics

### Paper submission opens: 23 July 2018

- Contributed paper submission deadline: **21 September 2018**
- Acceptance Announcement: **26 October 2018**
- Final Submission Contributed Papers: **9 November 2018**
- 1-page Abstract submission deadline: **16 November 2018**
- 1-page Abstract Acceptance Announcement: **27 November 2018**
- Final Submission 1-page Abstracts: **4 December 2018**

### ORGANIZING COMMITTEE:

**Conference Chair:****Jose Carmena**

University of California, Berkeley

**Program Chair:****Michel Maharbiz**

University of California, Berkeley

**Conference Co-Chair:****Paul Sajda**

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**Program Co-Chair:****Cynthia Chestek**

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# IEEE International Symposium on Biomedical Imaging

#ISBI19



April 8 - 11, 2019

Hilton Molino Stucky,

Venice Italy



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The **IEEE International Symposium on Biomedical Imaging (ISBI)** is a scientific conference dedicated to mathematical, algorithmic, and computational aspects of biological and biomedical imaging, across all scales of observation. It fosters knowledge transfer among different imaging communities and contributes to an integrative approach to biomedical imaging. ISBI is a joint initiative from the IEEE Signal Processing Society (SPS) and the IEEE Engineering in Medicine and Biology Society (EMBS). The 2019 meeting will be held in Venice, Italy and will include tutorials, challenges and a scientific program composed of plenary talks, invited special sessions, as well as oral and poster presentations of peer-reviewed papers. High-quality papers are requested containing original contributions to the topics of interest including image formation and reconstruction, image processing and analysis, dynamic imaging, visualization, image quality assessment, machine learning for big image data, and physical, biological, and statistical modeling. Accepted 4-page regular papers will be published in the symposium proceedings published by IEEE and included in IEEE Xplore. To encourage attendance by a broader audience of imaging scientists and clinical professionals and to offer additional presentation opportunities, ISBI 2019 will include special sessions with specific clinical focus and it will continue to have a second track featuring posters selected from 1-page abstract submissions.

## Important Dates

### Proposal Submission

Tutorials & Challenges **May 28, 2018 - September 24, 2018**

Special Sessions **May 15, 2018 - June 5, 2018**

### 4 page papers

Submission Opens **July 31, 2018**

Submission Deadline **October 9, 2018**

Accept/Reject Notification **December 18, 2018**

Final Submission **January 15, 2019**

### 1 page papers

Submission Opens **November 19, 2018**

Submission Deadline **January 15, 2019**

Accept/Reject Notification **January 29, 2019**

Final Submission **February 12, 2019**

Further information and details about the Conference, including Keynotes, Program, Registration, and Venue, will be available on:

<https://biomedicalimaging.org/2019/>

## Organizing Committee

### General Chairs

Marius George Linguraru  
[MLingura@childrensnational.org](mailto:MLingura@childrensnational.org)  
Enrico Grisan  
[enrico.grisan@unipd.it](mailto:enrico.grisan@unipd.it)

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Wiro Niessen  
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### Special Sessions

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Natasha Lepore  
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### Tutorials

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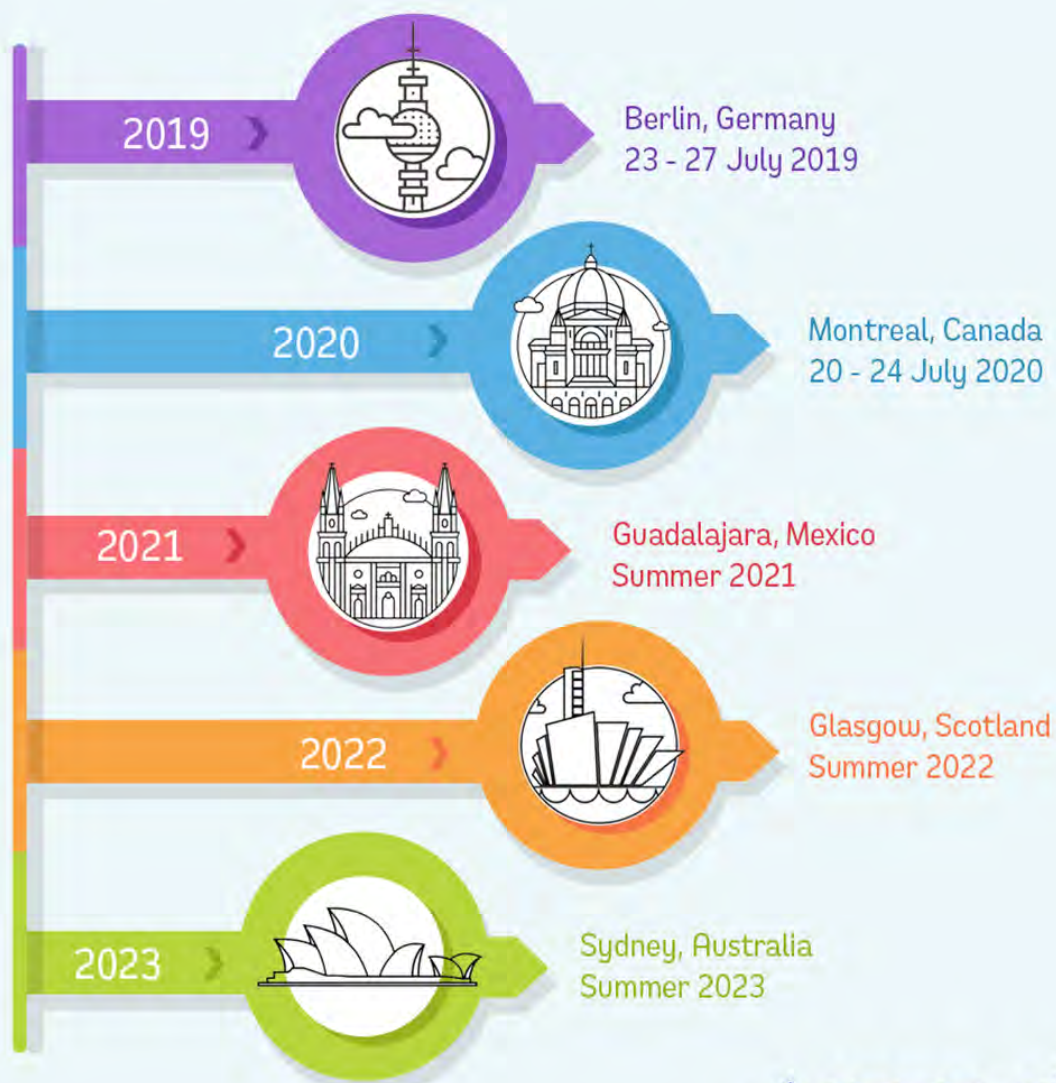


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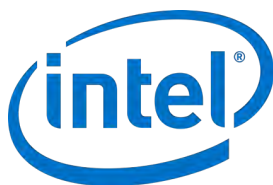
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Honolulu, Hawaii  
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Hawaii Convention Center

[pulse.embs.org/onstage](http://pulse.embs.org/onstage)



Join us during EMBC18 for a special Pulse on Stage event exploring the potential of artificial intelligence to transform modern healthcare. Industry and research leaders from Intel and the Allen Institute for Artificial Intelligence will join with medical professionals to provide insights on current and future possibilities for AI in medicine. Reception will follow speaker presentations and panel discussion. Register today and be part of this exciting conversation!

### Featured Speakers

#### Michael Taborn Chief Architect, IOTG Health Sector

Michael Taborn is presently the Chief Architect for the Healthcare Sector within the Intel IOT Group. This organization is responsible for supporting Intel devices and technologies in the global medical device marketplace. His current responsibilities include advising medical device customers on the security, architecture, and performance capabilities of Intel technologies as well as designing new approaches to security and remote patient monitoring applicable in healthcare use cases.



#### Douglas Raymond GM, Semantic Scholar, Allen Institute for Artificial Intelligence

Douglas Raymond is the General Manager of Semantic Scholar, an AI-powered search engine and discovery tool that helps researchers survey the world's scholarly knowledge and extract insights. He previously worked at Amazon where he held GM and Product leadership roles in the Alexa, performance advertising, and mobile applications groups, and at Google, where he held product management roles in the AdWords business and as the China monetization lead, based in Shanghai.



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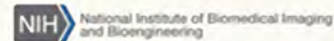
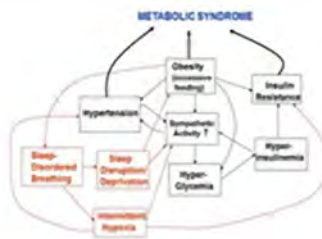
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### Modeling the Metabolic Syndrome

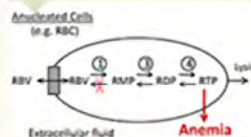
An extensive overview of the efforts that have been made to better understand the pathophysiology of metabolic syndrome using computational modeling was published in the ...[Read more](#)



The BMSR is dedicated to the advancement of the state-of-the-art in biomedical systems modeling and simulation through Core and Collaborative Research projects, as well as the dissemination of this knowledge and related software through Service, Training and Dissemination activities.

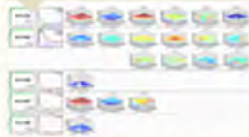
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David Z. D'Argenio, Ph.D.  
Co-Director

#### Core Research #2



**Biomedical Systems Modeling  
for Improved Clinical  
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Vasillis Z. Marmarelis, Ph.D.  
Co-Director

#### Core Research #3



**Models of Multi-Factor  
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Michael C.K. Khoo, Ph.D.  
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### About

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### Areas of Research

- Neural Engineering
- Cardiopulmonary Engineering
- Cell & Tissue Engineering
- Biomaterials and Bionanotechnology
- Biomedical Computation
- Medical Devices & Robotics



### BME Undergraduate Programs (Additional Major)

- Undergraduate students must choose a primary major in one of the traditional engineering disciplines.
- Biomedical Engineering students are able to apply their traditional engineering major to solve biomedical problems, as well as develop a deep understanding of biomedical engineering specialties.

### Ph.D. Program

- Dissertation research initiated within one month for immediate immersion
- Formal progress evaluation with faculty feedback conducted each semester to ensure timely graduation
- Completed in 4-4.5 years

### Practicum-Option M.S. Program

- Facilitate career transition and advancement, applicants from other field welcome
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- Option to apply a dual M.S. focused on biomedical technology management or entrepreneurship

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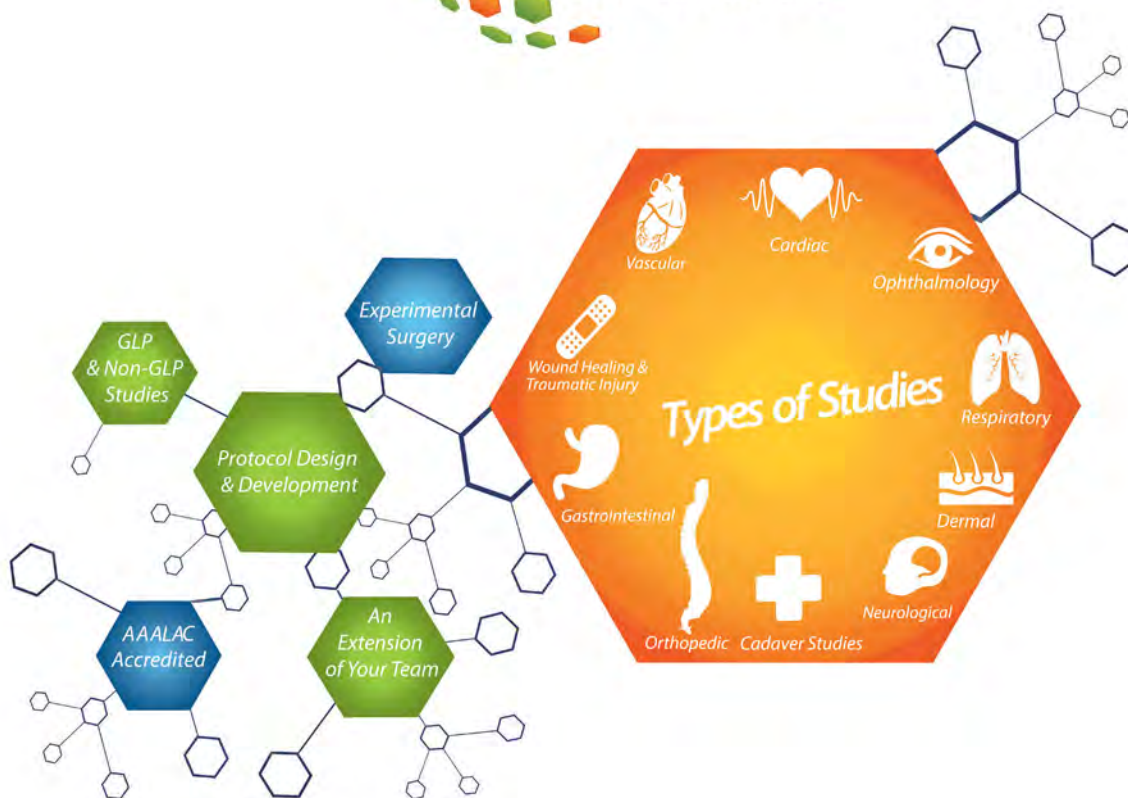
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The Shenzhen Institutes of Advanced Technology (SIAT) aims to enhance the innovative capacity of the equipment manufacturing and service industries in the Guangdong-Hong Kong region, promote the development of emerging industries possessing their own proprietary intellectual property, and become a world-class industrial research institute. To meet the nation's needs in healthcare and manufacturing, SIAT focuses on emerging industries such as low-cost healthcare, service robots, electric vehicles, cloud computing, digital cities, nano-medicine, new energy and new materials.

The Institute of Biomedical and Health Engineering (IBHE), established in August, 2007, is one of the largest research units in the area of biomedical engineering in China. IBHE focuses on the research and development of advanced diagnostic imaging systems, intelligent therapeutic biomedical devices, and innovative low-cost healthcare technologies.



生物医学与健康工程研究所

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# Program in Chronological Order

\* – Corresponding Author

Note: Minisymposia (MS) session talk times are only indicative and talks will be scheduled in such a way as to occupy the 90 minute time slot at the discretion of the MS organizer

July 18 Wednesday

## Wednesday, 18 July 2018

WeAT1: 08:00-09:30 Meeting Room 311  
**Brain Functional Imaging (Theme 6)** (Oral Session)  
**Chair:** Poudel, Govinda (*University of Sydney*)

08:00-08:15 WeAT1.1  
**A Bayesian Parametric Model for Quantifying Brain Maturation from Sleep-EEG in the Vulnerable Newborn Baby**  
 Pillay, Kirubin\* (*University of Oxford*); Dereymaeker, Anneleen (*Dept. of Development and Regeneration, University of Leuven*); Jansen, Katrien (*Dept. of Pediatrics, University Hospital Gasthuisberg, Leuven*); Naulaers, Gunnar (*University Hospitals Leuven*); De Vos, Maarten (*University of Oxford*)

08:15-08:30 WeAT1.2  
**Multiple Brain Activities during Sequential Memory Encoding – MEG Study of Modulation of Alpha-Band Rhythm**  
 Yokosawa, Koichi\* (*Hokkaido University*); Takase, Ryoken (*Hokkaido University*); Chitose, Ryota (*Hokkaido University*); Kimura, Keisuke (*Hokkaido University*)

08:30-08:45 WeAT1.3  
**Relationships between Behavioral and Single-Trial Target Detection Performance with Magnetoencephalography**  
 Cecotti, Hubert\* (*California State University Fresno*)

08:45-09:00 WeAT1.4  
**Non-Invasive, Cost-Effective, Early Diagnosis of Mild Cognitive Impairment in an Outpatient Setting: Pilot Study**  
 White, Austin T.\* (*East Carolina University*); Merino, Ruby (*East Carolina University*); Hardin, Sonya (*East Carolina University*); Kim, Sunghan (*East Carolina University*)

09:00-09:15 WeAT1.5  
**Functional Connectivity Analysis on Mild Alzheimer's Disease, Mild Cognitive Impairment and Normal Aging using fNIRS**  
 Tang, Tong Boon\* (*Universiti Teknologi Petronas*); Chan, Yee Ling (*Universiti Teknologi Petronas*)

09:15-09:30 WeAT1.6  
**Cortical Functional Reorganization in Response to Intact Forelimb Stimulation from Acute to Chronic Stage in Rodent Amputation Model**  
 Li, Yuanqi (*Shanghai Jiao Tong Univ.*); Li, Yao (*Shanghai Jiao Tong Univ.*); Omire-Mayor, Daryl (*School of BioMedical Engineering, Science & Health Systems, Drexel Univ.*); Bo, Bin (*Shanghai Jiao Tong Univ.*); Li, Hangdao (*Shanghai Jiao Tong Univ.*); Tong, Shanbao\* (*Shanghai Jiao Tong Univ.*)

WeAT2: 08:00-09:30 Meeting Room 312  
**Bayesian Methods in Biosignal Analysis (Theme 1)** (Oral Session)  
**Chair:** Barbieri, Riccardo (*Politecnico di Milano*)  
**Co-Chair:** Mitsis, Georgios D. (*McGill University*)

08:00-08:15 WeAT2.1  
**Real-Time Decoding of Auditory Attention from EEG via Bayesian Filtering**  
 Miran, Sina\* (*University of Maryland, College Park*); Akram, Sahar (*Facebook*); Sheikhattar, Alireza (*University of Maryland College Park*); Simon, Jonathan Z. (*University of Maryland, College Park*); Zhang, Tao (*Starkey Hearing Technologies*); Babadi, Behtash (*University of Maryland*)

08:15-08:30 WeAT2.2  
**Bayesian Model Selection Framework to Improve Calibration of Continuous Glucose Monitoring Sensors for Diabetes Management**  
 Acciaroli, Giada\* (*University of Padova*); Vettoretti, Martina (*University of Padova*); Facchinetti, Andrea (*University of Padova*); Sparacino, Giovanni (*University of Padova*)

08:30-08:45 WeAT2.3  
**A Smoother State Space Multitaper Spectrogram**  
 Song, Andrew\* (*Massachusetts Institute of Technology*); Chakravarty, Sourish (*Massachusetts Institute of Technology*); Brown, Emery N. (*MGH-Harvard Medical School-MIT*)

08:45-09:00 WeAT2.4  
**A Point Process Characterization of Electrodermal Activity**  
 Subramanian, Sandya\* (*Massachusetts Institute of Technology*); Barbieri, Riccardo (*Politecnico di Milano*); Brown, Emery N. (*MGH-Harvard Medical School-MIT*)

09:00-09:15 WeAT2.5  
**Bayesian Transfer Learning for the Prediction of Self-Reported Well-Being Scores**  
 Christinaki, Eirini (*University of Essex*); Poli, Riccardo (*University of Essex*); Citi, Luca\* (*University of Essex*)

09:15-09:30 WeAT2.6  
**Bayesian Online Changepoint Detection of Physiological Transitions**  
 Gee, Alan\* (*University of Texas at Austin*); Chang, Joshua (*Dell Medical School, University of Texas at Austin*); Ghosh, Joydeep (*University of Texas at Austin*); Paydarfar, David (*University of Texas at Austin, Dell Medical School*)

WeAT3: 08:00-09:30 Meeting Room 314  
**Applications of Image Segmentation and Classification (Theme 2)** (Oral Session)

08:00-08:15 WeAT3.1  
**Segmentation of the Uterine Wall by an Ensemble of Fully Convolutional Neural Networks**  
 Burai, Peter (*Faculty of Informatics, University of Debrecen*); Hajdu, Andras (*University of Debrecen*); Edgardo Manuel Felipe, Riverón (*Laboratorio de Inteligencia Artificial, Laboratorios del Centro de Investigación en Computación*); Harangi, Balazs\* (*University of Debrecen*)

08:15-08:30 WeAT3.2  
**Fully Automated Spleen Localization and Segmentation using Machine Learning and 3D Active Contours**  
 Wood, Alexander\* (*University of Michigan*); Sorousmehr, S.M.Reza (*University of Michigan, Ann Arbor*); Farzaneh, Negar (*University of Michigan*); Ward, Kevin (*University of Michigan*); Fessell, David (*University of Michigan*); Gryak, Jonathan (*University of Michigan*); Najarian, Kayvan (*University of Michigan - Ann Arbor*)

08:30-08:45 WeAT3.3  
**Alzheimer's Disease Classification using Bag-of-Words based on Visual Pattern of Diffusion Anisotropy for DTI Imaging**  
 Eldeeb, Ghaidaa W.\* (*Faculty of Engineering, Cairo University*); Zayed, Nourhan (*Electronics Research Institute*); Yassine, Inas (*Cairo University*)

08:45-09:00 WeAT3.4  
**Multiple Kernel Learning based Classification of Parkinson's Disease with Multi-Modal Transcranial Sonography**  
 Shi, Jun\* (*Shanghai University*); Yan, Minjun (*Shanghai First Maternity and Infant Hospital*); Dong, Yun (*Shanghai East Hospital of Tongji University*); Zheng, Xiao (*Shanghai University*); Zhang, Qi (*Shanghai University*); An, Hedi (*Shanghai East Hospital of Tongji University*)

09:00-09:15 WeAT3.5  
**Classification of Informative Frames in Colonoscopy Videos using Convolutional Neural Networks with Binarized Weights**  
 Akbari, Mojtaba (*Isfahan University of Technology*); Mohrekesh, Majid (*Isfahan University of Technology*); Rafiei, Shima (*IUT*); Soroushmehr, S.M.Reza\* (*University of Michigan, Ann Arbor*); Karimi, Nader (*Isfahan University of Technology*); Samavi, Shadrokh (*McMaster University*); Najarian, Kayvan (*University of Michigan - Ann Arbor*)

09:15-09:30 WeAT3.6  
**Polyp Segmentation in Colonoscopy Images using Fully Convolutional Network**  
 Akbari, Mojtaba (*Isfahan University of Technology*); Mohrekesh, Majid (*Isfahan University of Technology*); NasrEsfahani, Ebrahim (*Isfahan University of Technology*); Soroushmehr, S.M.Reza\* (*University of Michigan, Ann Arbor*); Karimi, Nader (*Isfahan University of Technology*); Samavi, Shadrokh (*McMaster University*); Najarian, Kayvan (*University of Michigan - Ann Arbor*)

WeAT4: 08:00-09:30 Meeting Room 315  
**Minisymposia: Towards P4 Medicine in Sleep Theranostics (I) (1i8t5)** (Minisymposium)  
**Chair:** Khoo, Michael (*University of Southern California*)  
**Co-Chair:** Penzel, Thomas (*Charité Universitätsmedizin Berlin*)

08:00-08:15 WeAT4.1  
**Improved Methods for Detection of Obstructive Sleep Apnoea Detection**  
 de Chazal, Philip\* (*University of Sydney*); Sadr, Nadi (*University of Sydney*); Naiwala Pathirannehelage, Madhuka (*University of Sydney*); Tabatabaei Balaei, Asghar (*University of Sydney*)

08:15-08:30 WeAT4.2  
**EIT Imaging of Chest and Upper Airway for OSA Diagnosis**  
 Woo, Eung Je\* (*Kyung Hee University*); Oh, Tong In (*Kyung Hee University*); Wi, Hun (*Kyung Hee University*)

08:30-08:45 WeAT4.3  
**Monitoring Sleep Apnea Patients using Built-In Sensors of Smartphones**  
 Jané, Raimon\* (*Institut de Bioenginyeria de Catalunya (IBEC)*); Blanco-Almazán, Dolores (*Institute for Bioengineering of Catalonia*); Castillo, Yolanda (*Institute for Bioengineering of Catalonia (IBEC)*); Ferrer Lluís, Ignasi (*Institute for Bioengineering of Catalonia*); Estrada, Luis (*Institut de Bioenginyeria de Catalunya*)

08:45-09:00 WeAT4.4  
**Self-Affine Transformation Applied to Smartphone-Based Oximetry to Detect Sleep Apnea**  
 Garde, Ainara\* (*University of Twente*); Nagaraj, Sunil Belur (*Massachusetts General Hospital*); Kheirkhah Dehkordi, Parastoo (*University of British Columbia*); Petersen, Christian (*British Columbia Children's Hospital*); Ansermino, J. Mark (*British Columbia's Children's Hospital*); Dumont, Guy (*University of British Columbia*)

WeAT5: 08:00-09:30 Meeting Room 316A  
**Minisymposia: Invasive and Non-Invasive Brain-Computer Interfaces for Medical Applications (49g4y)** (Minisymposium)  
**Chair:** Guger, Christoph (*g.tec Medical Engineering GmbH*)  
**Co-Chair:** Kamada, Kyouosuke (*Asahikawa Medical University*)

08:00-08:15 WeAT5.1  
**Invasive and Non-Invasive Brain-Computer Interfaces for Medical Applications**  
 Kamada, Kyouosuke\* (*Asahikawa Medical University*); Guger, Christoph (*g.tec Medical Engineering GmbH*); Ince, Nuri Firat (*University of Houston*)

08:15-08:30 WeAT5.2  
**Towards Automated Prediction of STN-DBS Electrode Implantation Track in Parkinson's Disease by using Local Field Potentials**  
 Ince, Nuri Firat\* (*University of Houston*)

08:30-08:45 WeAT5.3  
**ECoG based Passive Functional Brain Mapping**  
 Kamada, Kyouosuke\* (*Asahikawa Medical University*)

WeAT6: 08:00-09:30 Meeting Room 316B  
**Minisymposia: Technologies to Bypass Nervous System Injuries – The Path from Clinic to In-Home Use (7dsvd)** (Minisymposium)  
**Chair:** Sharma, Gaurav (*Battelle*)

08:00-08:15 WeAT6.1  
**Long-Term High Performance Neuroprosthetic Arm Control**  
 Collinger, Jennifer\* (*University of Pittsburgh*); Downey, John (*University of Chicago*); Weiss, Jeffrey (*University of Pittsburgh*); Gaunt, Robert (*University of Pittsburgh*); Boninger, Michael (*University of Pittsburgh*)

08:15-08:30 WeAT6.2  
**Technologies to Bypass Nervous System Injuries – The Path from Clinic to In-Home Use**  
 Burkhart, Ian\* (*Ian Burkhart Foundation*)

08:30-08:45 WeAT6.3  
**Neural Decoding Algorithm Requirements for a Take-Home Brain Computer Interface**  
 Friedenberg, David\* (*Battelle Memorial Institute*); Schwemmer, Michael (*Battelle Memorial Institute*); Skomrock, Nicholas (*Battelle Memorial Institute*); Sederberg, Per (*University of Virginia*); Ting, Jordyn (*Battelle Memorial Institute*); Bockbrader, Marcia (*The Ohio State University*); Sharma, Gaurav (*Battelle*)

08:45-09:00 WeAT6.4  
**A Sleeve Electrode Array for Myoelectric Control of Functional Electrical Stimulation-Assisted Hand Function**  
 Weber, Douglas\* (*University of Pittsburgh*); Sharma, Gaurav (*Battelle*); Friedenberg, David (*Battelle Memorial Institute*); Colachis, Sam (*Battelle Memorial Institute*); Zhang, Mingming (*Battelle Memorial Institute*); Urbin, Mike (*University of Pittsburgh School of Medicine*); Sarma, Devapratim (*University of Washington*); Sethi, Amit (*University of Pittsburgh*)

09:00-09:15 WeAT6.5  
**Implanted FES+iBCI for Restoration of Reaching and Grasping in Persons with Chronic Tetraplegia**  
 Ajiboye, Abidemi Bolu\* (*Cleveland VA Medical Center*); Hochberg, Leigh (*VA / Brown U. / MGH / Harvard Med. School*); Kirsch, Robert (*Case Western Reserve University*)

09:15-09:30 WeAT6.6  
**GAIN Clinical Performance Evaluation for a Take-Home Brain Computer Interface for Grasp**  
 Bockbrader, Marcia\* (*The Ohio State University*); Eipel, Kaitlin (*The Ohio State University*); Friedenberg, David (*Battelle Memorial Institute*); Sharma, Gaurav (*Battelle*)



WeAT7: 08:00-09:30 Meeting Room 316C  
**Minisymposia: Making Medical Devices Wireless in the Digital Health Age: Issues, Risks, and Practical Advice (d2g4f)** (Minisymposium)  
**Chair:** Witters, Donald (*Food and Drug Administration*)

08:00-08:15 WeAT7.1  
**Delivering on the Promise of Wirelessly Enabled Digital Health and the Internet of Health (IOH) Wireless Connectivity Issues, Risks, Technologies and Practical Advice**  
 Raymond, Phil\* (*Philips*)

08:15-08:30 WeAT7.2  
**Medical Device Systems and Bluetooth Wireless Technology: Opportunities and Challenges**  
 Saltzstein, Bill\* (*Code Blue Communications, Inc*)

08:30-08:45 WeAT7.3  
**Trends and Issues for Wireless Medical Devices**  
 Witters, Donald\* (*Food and Drug Administration*)

WeAT8: 08:00-09:30 Meeting Room 318A  
**Minisymposia: Digital Psychiatry: Smartphones, Sensors, and Signal Processing for Improving Detection and Outcomes in Serious Mental Illness (4bgx6)** (Minisymposium)  
**Chair:** Torous, John (*Digital Psychiatry Program*)  
**Co-Chair:** Larsen, Mark Erik (*University of New South Wales*)

08:00-08:15 WeAT8.1  
**Automatic Speech-Based Assessment of Mental State via Mobile Device**  
 Epps, Julien\* (*The University of New South Wales*)

08:15-08:30 WeAT8.2  
**Profiling Suicide Risk on Twitter using Linguistic Style and Response Rate**  
 O'Dea, Bridianne\* (*University of New South Wales*)

08:30-08:45 WeAT8.3  
**Unobtrusive Monitoring of Mental Health Symptoms**  
 Carr, Oliver (*University of Oxford*); Niclas, Palmius (*University of Oxford*); Saunders, Kate (*University of Oxford*); Goodwin, Guy (*University of Oxford*); De Vos, Maarten\* (*University of Oxford*)

08:45-09:00 WeAT8.4  
**Using Smartphones and Wearable Sensors to Assess Mental Health**  
 Pratap, Abhishek\* (*Sage Bionetworks / University of Washington*); N. Renn, Brenna (*University of Washington*); A. Anguera, Joaquin (*University of California, San Francisco*); A. Areán, Pat (*University of Washington*)

09:00-09:15 WeAT8.5  
**Preventing Suicide with Real-Time Feedback Systems**  
 Larsen, Mark Erik\* (*University of New South Wales*); Shand, Fiona (*University of New South Wales*); Nicholas, Jennifer (*University of New South Wales*); Christensen, Helen (*University of New South Wales*)

09:15-09:30 WeAT8.6  
**Pilot Spatial Analysis of Digital Phenotyping Smartphone Activity for Mental Health Research in a Schizophrenia Patient Cohort**  
 Pearson, John (*Harvard Medical School*); Keshavan, Matcheri (*Harvard Medical School*); Sandoval, Lius (*Harvard Medical School*); Torous, John\* (*Digital Psychiatry Program*)

WeAT9: 08:00-09:30 Meeting Room 318B  
**Minisymposia: Artificial Intelligence in Magnetic Resonance Imaging (5kkqn)** (Minisymposium)  
**Chair:** Du, Yiping (*Shanghai Jiao Tong University*)

08:00-08:15 WeAT9.1  
**MoDL: Model-Based Deep Learning Architecture for Inverse Problems**  
 Aggarwal, Hemant Kumar\* (*University of Iowa*); Mani, Merry (*University of Iowa*); Jacob, Mathews (*University of Iowa*)

08:15-08:30 WeAT9.2  
**Using Artificial Intelligence to Transform Cardiac MRI Reconstruction Methods**  
 DiBella, Edward V.R\* (*University of Utah*); Gibbons, Eric (*University of Utah*); Mendes, Jason (*University of Utah*); Tian, Ye (*University of Utah*); Adluru, Ganesh (*University of Utah*)

08:30-08:45 WeAT9.3  
**A Marriage of Spin Physics with Machine Learning for Ultrafast MRI: Method and Applications**  
 Liang, Zhi-Pei (*University of Illinois at Urbana-Champaign*); Li, Yudu (*Tsinghua University*); Peng, Xi (*Shenzhen Institutes of Advanced Technology*); Clifford, Bryan (*University of Illinois at Urbana-Champaign*); Lam, Fan (*University of Illinois at Urbana-Champaign*); Du, Yiping\* (*Shanghai Jiao Tong University*); Li, Yao (*Shanghai Jiao Tong University*)

08:45-09:00 WeAT9.4  
**KI-Net: Cascaded Convolutional Neural Network for Dynamic MR Image Reconstruction**  
 Liang, Dong\* (*Shenzhen Institutes of Advanced Technology*)

WeAT10: 08:00-09:30 Meeting Room 319A  
**Minisymposia: Advances in Technologies for Obesity Phenotyping and Weight Loss Intervention (6wj49)** (Minisymposium)  
**Chair:** Poon, Carmen C.Y. (*Chinese University of Hong Kong*)

08:00-08:15 WeAT10.1  
**New Technologies: Role in Diagnosing and Managing Obesity**  
 Heymsfield, Steven\* (*Pennington BioMedical Research Center*)

08:15-08:30 WeAT10.2  
**Food Photography and Mhealth in Obesity Research and Weight Loss**  
 Martin, Corby\* (*Pennington BioMedical Research Center*); DiBiano, Robert (*Louisiana State University*); Abdelwahab, Manal (*Louisiana State University*); Apolzan, John (*Pennington BioMedical Research Center*); Thomas, Diana (*West Point*); Gunturk, Bahadir (*Istanbul Medipol University*)

08:30-08:45 WeAT10.3  
**Validating Three-Dimensional Photonic Imaging for Obesity Phenotyping in Adults and Children**  
 Ng, Bennett (*University of California, Berkeley and University of California, San Francisco Graduate Program in Bioengineering*); Piel, Michaela (*University of California, San Francisco*); Bourgeois, Brianna (*Pennington BioMedical Research Center*); Heymsfield, Steven (*Pennington BioMedical Research Center*); Shepherd, John\* (*University of Hawaii Cancer Center*)

WeAT11: 08:00-09:30 Meeting Room 319B  
**Minisymposia: Radiation Induced Acoustic Imaging (764u5)** (Minisymposium)  
**Chair:** Min, Jung-Joon (*Chonnam National University Medical School*)  
**Co-Chair:** Lee, Changho (*Chonnam National University Medical School*)

08:00-08:15 WeAT11.1  
**A Feasibility Study of an X-Ray Induced Acoustic Imaging System with a Portable X-Ray Source and a Focused Ultrasound Transducer**

Park, Eunyeong (*Pohang University of Science and Technology (POSTECH)*); Lee, Donghyun (*POSTECH*); Lee, Changho\* (*Chonnam National University Medical School*); Kim, Chulhong (*Pohang University of Science and Technology*)

08:15-08:30 WeAT11.2  
**Novel Contrast Agents for Photoacoustic Imaging**  
 Min, Jung-Joon\* (*Chonnam National University Medical School*)

08:30-08:45 WeAT11.3  
**Ex vivo Biological Tissue Denaturation Observation using Speckle Variance Optical Interferometry**  
 Lee, Changho\* (*Chonnam National University Medical School*)

WeAT12: 08:00-09:30 Meeting Room 321A  
**Minisymposia: Sensor-Based Behavioral Informatics: Advances in Understanding of Human Behavior (7973w)** (Minisymposium)  
**Chair:** Sazonov, Edward (*University of Alabama*)  
**Co-Chair:** Jovanov, Emil (*University of Alabama in Huntsville*)

08:00-08:15 WeAT12.1  
**Capturing and Modifying Eating Behavior in the Wild**  
 Sazonov, Edward\* (*University of Alabama*)

08:15-08:30 WeAT12.2  
**Image based Dietary Behavior and Analysis using Deep Learning**  
 Fang, Shaobo (*Purdue University*); Yarlagadda, Sri Kalyan\* (*Purdue University*); Wang, Yu (*Nvidia*); Zhu, Fengqing (*Purdue University*); Boushey, Carol (*University of Hawaii Cancer Center*); Kerr, Deb (*Curtin University*); Delp, Edward (*Purdue University*)

08:30-08:45 WeAT12.3  
**Improving Individuals' Behavior and State Estimates with Model-Based Data Science and Sensor Fusion**  
 Pavel, Misha\* (*Northeastern University*); Li, Xuan (*Northeastern University*); Kos, Maciej Rafal (*Northeastern University*); Khaghani-Far, Iman (*Northeastern University*); Gordon, Christine (*Northeastern University*); Jimison, Holly (*Northeastern University*); Williams, Haleigh (*Northeastern University*)

08:45-09:00 WeAT12.4  
**Mood, Stress and Sleep Sensing with Wearable Sensors and Mobile Phones**  
 Sano, Akane\* (*Massachusetts Inst. of Tech.*); Taylor, Sara (*Massachusetts Inst. of Tech.*); Jaques, Natasha (*Massachusetts Inst. of Tech.*); Chen, Weixuan (*Massachusetts Inst. of Tech.*); Lopez-Martinez, Daniel (*Massachusetts Inst. of Tech.*); Nosakhare, Ehimwenma (*Massachusetts Inst. of Tech.*); Rudovic, Ognjen (*Massachusetts Inst. of Tech.*); Umematsu, Terumi (*NEC Corp.*); Picard, Rosalind (*Massachusetts Inst. of Tech.*)

WeAT13: 08:00-09:30 Meeting Room 321B  
**Minisymposia: Advanced Photoacoustic Imaging (1t8xa)** (Minisymposium)  
**Chair:** Kim, Chulhong (*Pohang University of Science and Technology*)

08:00-08:15 WeAT13.1  
**Linear-Array-Based Photoacoustic Imaging of Human Palm, Foot, and Breast**  
 Wang, Yuehang (*University at Buffalo*); Lim, Rachel Su Ann (*University at Buffalo*); Nyayapathi, Nikhila (*University at Buffalo*); Xia, Jun\* (*University at Buffalo*)

08:15-08:30 WeAT13.2  
**Second Generation Pulsed Laser Diode based Compact Photoacoustic Tomography System**  
 Kalva, Sandeep Kumar (*Nanyang Technological University*); Upputuri, Paul Kumar (*Nanyang Technological University*); Pramanik, Manojit\* (*Nanyang Technological University*)

08:30-08:45 WeAT13.3  
**Quantitative Photoacoustic Imaging without Optical Inversion**  
 Cai, Chuangjian (*Tsinghua University*); Deng, Kexin (*Tsinghua University*); Luo, Jianwen (*Tsinghua University*); Ma, Cheng\* (*Tsinghua University, Beijing, China*)

08:45-09:00 WeAT13.4  
**High-Speed Wide-Field Photoacoustic Microscopy**  
 Yao, Junjie\* (*Duke University*)

09:00-09:15 WeAT13.5  
**Multi-Parametric Photoacoustic Microscopy**  
 Hu, Song\* (*University of Virginia*)

WeAT14: 08:00-09:30 Meeting Room 322AB  
**Minisymposia: Recent Challenges and Advances in Cuffless Blood Pressure Measurement (I) (4493i)** (Minisymposium)  
**Chair:** Inan, Omer (*Georgia Institute of Technology*)  
**Co-Chair:** Hahn, Jin-Oh (*University of Maryland*)

08:00-08:15 WeAT14.1  
**Tonometric and Skin Surface Measurement of Pulse Transit Time: Relevance to Cuffless Measurement of Blood Pressure**  
 Avolio, Alberto P\* (*Macquarie University*); Kazzi, Christina (*Macquarie University*); Blackmore, Conner (*Macquarie University*); Shirbani, Fatemeh (*Macquarie University, Faculty of Medicine and Health Sciences*); Tan, Isabella (*Macquarie University*); Butlin, Mark (*Macquarie University*)

08:15-08:30 WeAT14.2  
**PAT vs. PTT Difference in Cardiac Patients: A Possible Confounding Factor in the Cuffless BP Measure in Clinics**  
 Di Rienzo, Marco\* (*Fondazione Don Carlo Gnocchi*); Vaini, Emanuele (*IRCCS PoliClinico San Donato*); Lombardi, Prospero (*Fondazione Don Carlo Gnocchi ONLUS*)

08:30-08:45 WeAT14.3  
**Tracking Blood Pressure Changes in Anesthetized Patients: The Optical Blood Pressure Monitoring (oBPM) Technology**  
 Sola, Josep (*CSEM - Centre Suisse d'Electronique et Microtechnique*); Ghamri, Yassine (*CHUV*); Proença, Martin (*CSEM SA*); Braun, Fabian (*CSEM SA*); Pierrel, Nicolas (*CHUV*); Verjus, Christophe (*CSEM*); Bertschi, Mattia (*CSEM*); Schoettker, Patrick (*CHUV - Centre Hospitalier Universitaire Vaudois*); Lemkaddem, Alia\* (*CSEM*)

08:45-09:00 WeAT14.4  
**Local Pulse Wave Velocity and Cuffless Blood Pressure Assessment using ARTSENS**  
 Pm, Nabeel\* (*Indian Institute of Technology Madras*); V, Raj Kiran (*IIT Madras*); Joseph, Jayaraj (*HTIC, Indian Institute of Technology Madras*); Sivaprakasam, Mohanasankar (*Indian Institute of Technology Madras*)

09:00-09:15 WeAT14.5  
**SeismoWatch 2.0: Wrist-Worn Sensing System for Pulse Transit Time based Cuffless Blood Pressure Estimation**  
 Carek, Andrew (*Georgia Institute of Technology*); Inan, Omer\* (*Georgia Institute of Technology*)

WeAT15: 08:00-09:30 Meeting Room 323A  
**Minisymposia: Pulse Wave Analysis and Pulse Simulator in the TCM Perspective (547x2)** (Minisymposium)  
**Chair:** Kim, Jaek U (*Korean Institute of Oriental Medicine*)

08:00-08:15 WeAT15.1  
**Robotic Tonometry System for Accurate Measurement of Radial Artery Pulse Waveform**  
 Kim, Young-Min\* (*Korea Institute of Oriental Medicine*)

08:15-08:30 WeAT15.2  
**Dynamic Pulse Wave Characteristics of In-Line Arranged Piezo-Resistive Pressure Sensors with Cover Layers**  
 Jun, Min-Ho (*KIOM*); Jeon, Youngju (*Korean Institute of Oriental Medicine*); Kim, Young-Min\* (*Korea Institute of Oriental Medicine*)

08:30-08:45 WeAT15.3  
**Soft Computing Techniques for Pulse Pattern Classification**  
 Bae, Jang-Han (*Korea Institute of Oriental Medicine, KAIST*); Kim, Jaek U\* (*Korean Institute of Oriental Medicine*)

08:45-09:00 WeAT15.4  
**A New Cam-Based Compact Radial Pulsation Simulator**  
 Yang, Tae-Heon (*Korea National University of Transportation*); Koo, Jeong-Hoi (*Miami*); Woo, Sam Yong (*KRIS*); Kim, Young-Min\* (*Korea Institute of Oriental Medicine*)

WeAT16: 08:00-09:30 Meeting Room 323B  
**Minisymposia: Deep Learning in Medical Imaging (g6735)** (Minisymposium)  
**Chair:** Lee, Jae Sung (*Seoul National University*)

08:00-08:15 WeAT16.1  
**Deep Learning for Nuclear Medicine Image Generation**  
 Lee, Jae Sung\* (*Seoul National University*)

08:15-08:30 WeAT16.2  
**Deep Learning-Based Brain Connectivity Analysis**  
 Han, Cheol\* (*Korea Univ.*); Kim, Daegyeom (*Korea Univ.*); Lee, Suji (*Korea Univ.*); Jeong, Hyun-Ghang (*Korea Univ.*)

WeAT17: 08:00-09:30 Meeting Room 323C  
**Minisymposia: Subcellular Neural Interfaces (eu344)** (Minisymposium)  
**Chair:** Otto, Kevin (*University of Florida*)

08:00-08:15 WeAT17.1  
**The Need for Subcellular Neural Interfaces for Neuromodulation and Recording**  
 Urdaneta, Morgan E (*Univ. of Florida*); Otto, Kevin\* (*Univ. of Florida*)

08:15-08:30 WeAT17.2  
**Axon-Like Nerve Interface with Low Flexural Rigidity**  
 Durand, Dominique\* (*Case Western Reserve University*); McCallum, Grant (*Case Western Reserve University*)

08:30-08:45 WeAT17.3  
**A Data Pipeline for 65,536 Channels of Extracellular Unit Recordings**  
 Khan, Aamir Ahmed\* (*Paradromics, Inc.*); Sahasrabuddhe, Kunal (*Paradromics*); Pouzzner, Daniel (*Paradromics, Inc.*); Nishimura, Kurtis (*University of Hawaii*); Angle, Matthew (*Paradromics Inc*)

08:45-09:00 WeAT17.4  
**Nanoelectronic Threads for Long-Term, Large-Scale Neural Interface**  
 Li, Xue (*University of Texas at Austin*); Zhao, Zhengtuo (*University of Texas at Austin*); Zhu, Hanlin (*University of Texas at Austin*); Luan, Lan (*University of Texas at Austin*); Xie, Chong\* (*University of Texas at Austin*)

09:00-09:15 WeAT17.5  
**High Density 8µm Carbon Fiber Electrode Arrays**  
 Patel, Paras\* (*University of Michigan*); Popov, Pavlo (*University of Michigan*); Caldwell, Ciara (*University of Michigan*); Welle, Elissa (*University of Michigan*); Egert, Daniel (*University of California, San Francisco*); Pettibone, Jeffrey (*University of California, San Francisco*); Roossien, Douglas (*University of Michigan*); Cai, Dawen (*University of Michigan*); Berke, Joshua (*University of California, San Francisco*); Chestek, Cynthia (*University of Michigan*)

WeAT18: 08:00-09:30 Meeting Room 324  
**Minisymposia: Fully Implantable Biomechatronic Organs (9fd16)** (Minisymposium)  
**Chair:** Ricotti, Leonardo (*Scuola Superiore Sant'Anna*)  
**Co-Chair:** Menciassi, Arianna (*Scuola Superiore Sant'Anna*)

08:00-08:15 WeAT18.1  
**Novel Technologies for the Development of Bionic Humanoids**  
 Arai, Fumihito\* (*Nagoya University*)

08:15-08:30 WeAT18.2  
**Is Fully Implantable Artificial Heartrealistic in Practical Use?**  
 Umez, Mitsuo\* (*Waseda University Graduate School*); Yamazaki, Kenji (*Hokkaido CardiovascularHospital*); Iwasaki, Kiyotaka (*Waseda University*); Motomura, Tadashi (*Evaheart Inc.*); Yamazaki, Shun-ichi (*Sun Medical Technology Research Corp.*)

08:30-08:45 WeAT18.3  
**Forgetting Diabetes through a Fully Implantable and Rechargeable Robotic Pancreas**  
 Ricotti, Leonardo\* (*Scuola Superiore Sant'Anna*); Iacovacci, Veronica (*Scuola Superiore Sant'Anna*); Dario, Paolo (*Scuola Superiore Sant'Anna*); Menciassi, Arianna (*Scuola Superiore Sant'Anna*)

08:45-09:00 WeAT18.4  
**Implantable Mechatronic Technologies for the Urinary System**  
 Menciassi, Arianna\* (*Scuola Superiore Sant'Anna*); Ricotti, Leonardo (*Scuola Superiore Sant'Anna*); Iacovacci, Veronica (*Scuola Superiore Sant'Anna*); Lucarini, Gioia (*Scuola Superiore Sant'Anna*); Mazzocchi, Tommaso (*The BioRobotics Institute, Scuola Superiore Sant'Anna*); Marziale, Leonardo (*The Biorobotic Institute, Scuola Superiore Sant'Anna*)

09:00-09:15 WeAT18.5  
**Which Directions for Bionic Organs?**  
 Dario, Paolo\* (*Scuola Superiore Sant'Anna*)

09:15-09:30 WeAT18.6  
**Extracardiac Augmentation of Cardiac Function with a Soft Robotic Sleeve**  
 Roche, Ellen\* (*Harvard*); Walsh, Conor (*Harvard University*)

WeAT19: 08:00-09:30 Meeting Room 325A  
**Minisymposia: Using Lasers and Polarization-Sensitive Technology in Retinal Scanning / Imaging (38biw)** (Minisymposium)  
**Chair:** Gramatikov, Boris (*Johns Hopkins Univ. School of Medicine*)  
**Co-Chair:** Irsch, Kristina (*Johns Hopkins University (USA) & UPMC-Sorbonne Universities (France)*)

08:00-08:15 WeAT19.1  
**Birefringence and Depolarization Imaging of the Retina by Polarization Sensitive Optical Coherence Tomography**  
 Hitzberger, Christoph\* (*Medical University of Vienna*)

08:15-08:30 WeAT19.2  
**Combining Retinal Birefringence Scanning with Long Working Distance OCT for Pediatric Imaging**  
 Gramatikov, Boris\* (*Johns Hopkins University School of Medicine*); Irsch, Kristina (*Johns Hopkins University (USA) & UPMC-Sorbonne Universities (France)*); Guyton, David (*Johns Hopkins University School of Medicine*)

08:30-08:45 WeAT19.3  
**Modeling and Minimizing the Effect of Corneal Birefringence in Polarization-Sensitive Retinal Scanning**  
 Irsch, Kristina\* (*Johns Hopkins University (USA) & UPMC-Sorbonne Universities (France)*); Gramatikov, Boris (*Johns Hopkins University School of Medicine*); Guyton, David (*Johns Hopkins University School of Medicine*)

08:45-09:00 WeAT19.4  
**The use of Phase Shift Subtraction to Obtain Differential Polarization Measurements with a Single Detector and Eliminate Unwanted Frequencies in Periodic Signals**  
 Guyton, David\* (*Johns Hopkins University School of Medicine*); Gramatikov, Boris (*Johns Hopkins University School of Medicine*); Irsch, Kristina (*Johns Hopkins University (USA) & UPMC-Sorbonne Universities (France)*)

09:00-09:15 WeAT19.5  
**Multi-Contrast Imaging by Jones Matrix OCT: Structure, Birefringence, Circulation, and Mechanical Property**  
 Yasuno, Yoshiaki\* (*University of Tsukuba*)

WeAT20: 08:00-09:30 Meeting Room 325B  
**Invited Session: Computational Human Models (I) Verification, Validation, and Reporting (vy572)** (Invited Session)  
**Chair:** Horner, Marc (*ANSYS, Inc.*)

08:00-08:15 WeAT20.1  
**Toward Individualized Specific Absorption Rates: Progress in Building Surface-Based Human Head Models**  
 Kozlov, Mikhail\* (*Max Planck Institute for Human Cognitive and Brain Sciences*); Horner, Marc (*ANSYS, Inc.*); Bazin, Pierre-Louis (*Max Planck Institute for Human Cognitive and Brain Sciences*); Weiskopf, Nikolaus (*Max Planck Institute for Human Cognitive and Brain Sciences*); Möller, Harald (*Max Planck Institute for Human Cognitive and Brain Sciences*)

08:15-08:30 WeAT20.2  
**Verification of the VHP-Female V.5.0 Full Body CAD Human Model**  
 Noetscher, Gregory\* (*Worcester Polytechnic Institute*); Wartman, William (*Worcester Polytechnic Institute*); Pham, Dung (*Worcester Polytechnic Institute*); Adams, Johnathan (*Worcester Polytechnic Institute*); Makarov, Sergey (*Electrical and Computer Engineering, Worcester Polytechnic Institute*)

08:30-08:45 WeAT20.3  
**Calculating MRI RF-Induced Voltages for Implanted Medical Devices using Computational Human Models**  
 Brown, James\* (*MSEI*); Qiang, Rui (*Micro System Engineering Inc. (Biotronik)*); Stadnik, Paul (*Micro Systems Engineering, Inc.*); Stotts, Larry (*Biotronik*); Von Arx, Jeffrey (*Micro Systems Engineering, Inc.*)

08:45-09:00 WeAT20.4  
**Simulations of a Birdcage Coil B1+ Field for Designing a 3T Multichannel TMS/MRI Head Coil Array**  
 Navarro de Lara, Lucia Isabel\* (*Martinos Center - MGH*); Golestanirad, Laleh (*Dept. of NeuroSciences, Cleveland Clinic, Cleveland*); Makarov, Sergey (*Electrical and Computer Engineering, Worcester Polytechnic Institute*); Stockmann, Jason P. (*Athinoula A. Martinos Center for BioMedical Imaging, Dept. of Radiology, Massachusetts General Hospital*); Wald, Lawrence L. (*A. A. Martinos Center for BioMedical Imaging, Dept. of Radiology*); Nummenmaa, Aapo (*Massachusetts General Hospital*)

09:00-09:15 WeAT20.5  
**Reporting the Dose of Non-Invasive Brain Stimulation using SimNIBS 2**  
 Bicalho Saturnino, Guilherme (*Technical University of Denmark*); Puonti, Oula (*Copenhagen University Hospital Hvidovre, Denmark & Dept. of Electrical Engineering, Technical University of Denmark, Denmark*); Antunes, Andre (*Medtronic*); Nielsen, Jesper D. (*Copenhagen University Hospital Hvidovre, Denmark & Dept. of Applied Mathematics and Computer Science, Technical University of Denmark*); Madsen, Kristoffer H. (*Copenhagen University Hospital Hvidovre, Denmark & Dept. of Applied Mathematics and Computer Science, Technical University of Denmark*); Thielscher, Axel\* (*Copenhagen University Hospital Hvidovre, Denmark & BioMedical Engineering Section*)

09:15-09:30 WeAT20.6  
**Verification and Validation of Computational Electromagnetic Modeling for Radiofrequency Safety of Medical Devices**  
 Horner, Marc\* (*ANSYS, Inc.*); Iacono, Maria Ida (*Food and Drug Administration*); Morrison, Tina M. (*Food and Drug Administration (FDA)*); Pathmanathan, Pras (*US Food and Drug Administration*); Kainz, Wolfgang (*Food and Drug Administration*); Angelone, Leonardo M. (*US Food and Drug Administration, Center for Devices and Radiological Health*)

WeBT1: 13:30-15:00 Meeting Room 311  
**Brain-Computer Interface (I) (Theme 6)** (Oral Session)

13:30-13:45 WeBT1.1  
**Near Perfect Neural Critic from Motor Cortical Activity Toward an Autonomously Updating Brain Machine Interface**  
 An, Junmo (*University of Houston*); Yadav, Taruna (*University of Houston*); Badri Ahmadi, Mohammad (*University of Houston*); Tarigoppula, Aditya (*SUNY Downstate Medical Center*); Francis, Joseph Thachil\* (*University of Houston*)

13:45-14:00 WeBT1.2  
**The Effect of Miniaturization and Galvanic Separation of EEG Sensor Devices in an Auditory Attention Detection Task**  
 Mundanad Narayanan, Abhijith\* (*KU Leuven*); Bertrand, Alexander (*KU Leuven, University of Leuven*)

14:00-14:15 WeBT1.3  
**Virtual Reality, Visual Cliffs, and Movement Disorders**  
 Kaur, Rachneet (*University of Illinois at Urbana-Champaign*); Lin, Xun (*University of Illinois at Urbana-Champaign*); Layton, Alexander (*Dept. of Physics, University of Illinois at Urbana-Champaign*); Hernandez, Manuel\* (*University of Illinois*); Sowers, Richard (*University of Illinois at Urbana-Champaign*)

14:15-14:30 WeBT1.4  
**Detection of Mental Task Related Activity in NIRS-BCI Systems using Dirichlet Energy Over Graphs**  
 Petrantonakis, Panagiotis\* (*Information Technologies Institute, Centre for Research and Technology-Hellas (CERTH)*); Kompatsiaris, Ioannis (Yannis) (*Information Technologies Institute, CERTH*)

14:30-14:45 WeBT1.5  
**Transferring Shared Responses across Electrode Montages for Facilitating Calibration in High-Speed Brain Spellers**  
 Nakanishi, Masaki\* (*University of California San Diego*); Wang, Yu-Te (*University of California San Diego*); Jung, Tzzy-Ping (*University of California San Diego*)

14:45-15:00 WeBT1.6  
**Decoding Speech from Intracortical Multielectrode Arrays in Dorsal "Arm/Hand Areas" of Human Motor Cortex**  
 Stavisky, Sergey\* (*Stanford University*); Rezaii, Paymon (*Stanford University*); Willett, Francis (*Case Western Reserve University*); Hochberg, Leigh (*VA / Brown U. / MGH / Harvard Med. School*); Shenoy, Krishna V. (*Stanford University*); Henderson, Jaimie (*Stanford University*)

WeBT2: 13:30-15:00 Meeting Room 312  
**Biomedical Signal Classification: EEG Signal Analysis (Theme 1)** (Oral Session)  
**Chair:** Bianchi, Anna Maria (*Politecnico di Milano*)

13:30-13:45 WeBT2.1  
**Single-Channel Real-Time Drowsiness Detection based on Electroencephalography**  
 Albalawi, Hassan\* (*Duke University*); Li, Xin (*Duke University*)

13:45-14:00 WeBT2.2  
**Performance Improvement of Driving Fatigue Identification based on Power Spectra and Connectivity using Feature Level and Decision Level Fusions**  
 Harvy, Jonathan (*Singapore Institute for Neurotechnology*); Sigalas, Evangelos (*Singapore Institute for Neurotechnology*); Thakor, Nitish (*Johns Hopkins University*); Bezerianos, Anastasios (*National University of Singapore*); Li, Junhua\* (*National University of Singapore*)

14:00-14:15 WeBT2.3  
**Online Automatic Artifact Rejection using the Real-Time EEG Source-Mapping Toolbox (REST)**  
 Pion-Tonachini, Luca\* (*University of California, San Diego*); Hsu, Sheng-Hsiou (*University of California, San Diego*); Chang, Chi-Yuan (*University of California, San Diego*); Jung, Tzyy-Ping (*University of California San Diego*); Makeig, Scott (*University of California San Diego*)

14:15-14:30 WeBT2.4  
**Towards the Development of Physiological Models for Emotions Evaluation**  
 Reali, Pierluigi (*Politecnico di Milano*); Cosentini, Claudia (*Politecnico di Milano*); de Carvalho, Paulo (*University of Coimbra*); Traver, Vicente (*ITACA - Universitat Politècnica de València*); Bianchi, Anna Maria\* (*Politecnico di Milano*)

14:30-14:45 WeBT2.5  
**Classification of Propofol-Induced Sedation States using Brain Connectivity Analysis**  
 Rathee, Dheeraj\* (*Ulster University*); Cecotti, Hubert (*California State University Fresno*); Prasad, Girijesh (*University of Ulster*)

14:45-15:00 WeBT2.6  
**A Parametric EEG Signal Model for BCIs with Rapid-Trial Sequences**  
 Marghi, Yeganeh M.\* (*Northeastern Univ.*); Gonzalez-Navarro, Paula (*Northeastern Univ.*); Azari, Bahar (*Northeastern Univ.*); Erdogmus, Deniz (*Northeastern Univ.*)

WeBT3: 13:30-15:00 Meeting Room 314  
**Brain Imaging (I) (Theme 2)** (Oral Session)  
**Chair:** Angelini, Elsa (*Imperial NIHR BRC, Imperial College London*)

13:30-13:45 WeBT3.1  
**Brain Morphometry Analysis with Surface Foliation Theory**  
 Wen, Chengfeng (*Stony Brook University*); Lei, Na (*Dalian University of Technology*); Ma, Ming\* (*Stony Brook University*); Qi, Xin (*Stony Brook University*); Zhang, Wen (*School of Computing, Informatics, and Decision Systems Engineering, Arizona State University*); Wang, Yalin (*Arizona State University*); Gu, David Xianfeng (*State University of New York at Stony Brook*)

13:45-14:00 WeBT3.2  
**Radiomics Features as Predictors to Predict Progression of Mild Cognitive Impairment to Alzheimer's Disease**  
 Li, Yupeng (*Shanghai University*); Jiang, Jiehui\* (*Shanghai University*); Shen, Ting (*Shanghai University*); Ping, Wu (*PET Center, Huashan Hospital, Fudan University*); Zuo, Chuantao (*PET Center, Huashan Hospital*)

14:00-14:15 WeBT3.3  
**Automatic Midline Shift Detection in Traumatic Brain Injury**  
 Hooshmand, Mohsen\* (*University of Michigan*); Soroushmehr, S.M.Reza (*University of Michigan, Ann Arbor*); Williamson, Craig (*University of Michigan*); Gryak, Jonathan (*University of Michigan*); Najarian, Kayvan (*University of Michigan - Ann Arbor*)

14:15-14:30 WeBT3.4  
**Approximating Cellular Densities from High-Resolution Neuroanatomical Imaging Data**  
 LaGrow, Theodore J.\* (*Georgia Institute of Technology*); Moore, Michael (*Georgia Institute of Technology*); Prasad, Judy (*University of Chicago*); Davenport, Mark A. (*Georgia Institute of Technology*); Dyer, Eva L. (*Georgia Institute of Technology & Emory University*)

14:30-14:45 WeBT3.5  
**A Novel MRI-Based Radiomics Model for Predicting Recurrence in Chordoma**  
 Wei, Wei (*Xi'an Polytechnic Univ.*); Wang, Ke (*Beijing Tiantan Hospital, Capital Medical Univ.*); Tian, Kaibing (*Beijing Tiantan Hospital, Capital Medical Univ.*); Liu, Zhenyu (*Institute of Automation, Chinese Academy of Sciences*); Wang, Liang (*Beijing Tiantan Hospital, Capital Medical Univ.*); Zhang, Junting (*Beijing Tiantan Hospital, Capital Medical Univ.*); Tang, Zhenchao (*Shandong Univ., Weihai*); Wang, Shuo (*Chinese Academy of Sciences*); Dong, Di (*Chinese Academy of Sciences*); Zang, Yali (*Institute of Automation, Chinese Academy of Sciences*); Gao, Yuan (*Key Lab of Molecular Imaging, Institute of Automation, Chinese Academy of Sciences*); Wu, Zhen (*Beijing Tiantan Hospital, Capital Medical Univ.*); Tian, Jie\* (*Chinese Academy of Sciences*)

14:45-15:00 WeBT3.6  
**Tracing and Analysis of the Whole Mouse Brain Vasculature with Systematic Cleaning to Remove and Consolidate Erroneous Images**  
 Lee, Junseok\* (*Texas A&M University, Dept. of Computer Science and Engineering*); Yoo, Jaewook (*Texas A&M University*); Choe, Yoonsuck (*Texas A&M University*)

WeBT4: 13:30-15:00 Meeting Room 315  
**Minisymposia: Towards P4 Medicine in Sleep Theranostics (I) (118t5)** (Minisymposium)  
**Chair:** Khoo, Michael (*University of Southern California*)

13:30-13:45 WeBT4.1  
**Development of Reliable Sleep EEG Biomarkers**  
 Penzel, Thomas\* (*Charite Univ. Berlin*); Schoebel, Christoph (*Charite Univ. Berlin*); Ludka, Ondrej (*St. Anne's University Hospital and ICRC Brno*); Glos, Martin (*Charite-Univ. Berlin*); Fietze, Ingo (*Charite-Univ. Berlin*)

13:45-14:00 WeBT4.2  
**Contactless Detection of Sleep Phases with the Help of Regression Analysis**  
 Seepold, Ralf\* (*HTWG Konstanz*); Gaiduk, Maksym (*HTWG Konstanz*); Martinez Madrid, Natividad (*Reutlingen University*); Penzel, Thomas (*Charite Universitätsmedizin Berlin*)

14:00-14:15 WeBT4.3  
**Obstructive Sleep Apnoea: Decreased Cerebral Perfusion when Awake and Investigating the Benefit of CPAP**  
 Jones, Richard D.\* (*New Zealand Brain Research Institute*); Innes, Carrie R. H. (*Canterbury District Health Board*); Buckley, Russell (*New Zealand Brain Research Institute*); Kelly, Paul (*Christchurch Hospital*); Hlavac, Michael (*Christchurch Hospital*); Beckert, Lutz (*University of Otago*)

14:15-14:30 WeBT4.4  
**Cheyne Stokes Respiration Cycle Length as a Risk Predictor in Patients with Heart Failure**  
 Schoebel, Christoph\* (*Charite Universitaetsmedizin Berlin*); Fietze, Ingo (*Charite-Universitaetsmedizin Berlin*); Penzel, Thomas (*Charite Universitätsmedizin Berlin*)

<p>WeBT5: 13:30-15:00 Meeting Room 316A</p> <p><b>Minisymposia: Mapping the Peripheral Nervous System with State-of-the-Art Nerve Interfaces (guf32)</b> (Minisymposium)</p> <p><b>Chair:</b> Seymour, John P. (<i>University of Michigan</i>)</p> <p><b>Co-Chair:</b> Ludwig, Kip (<i>Mayo Clinic</i>)</p>	
<p>13:30-13:45 WeBT5.1</p> <p><b>Soft, Conformal Wireless Optoelectronic Systems for Long-Term Neuromodulation of Bladder Function</b></p> <p>Gereau, Robert* (<i>Washington University School of Medicine</i>)</p>	
<p>13:45-14:00 WeBT5.2</p> <p><b>Multimodal Approach to Comprehensively Study Autonomic Nerve Stimulation in Swine Model</b></p> <p>Ross, Erika (<i>Cala Health</i>); Settell, Megan (<i>Mayo Clinic</i>); Nicolai, Evan (<i>Mayo Clinic</i>); Ludwig, Kip* (<i>Mayo Clinic</i>)</p>	
<p>14:00-14:15 WeBT5.3</p> <p><b>Treatment of Peripheral Nerve Injury with HF10 Therapy: Clinical Results and Potential Mechanisms</b></p> <p>Subbaroyan, Jeyakumar* (<i>Nevro Corp.</i>)</p>	
<p>14:15-14:30 WeBT5.4</p> <p><b>Functional and Anatomic Mapping of the Superior Cervical Ganglion and Cervical Sympathetic Chain</b></p> <p>Hsieh, Yee-Hsee* (<i>Case Western Reserve University</i>); Liu, YeHe (<i>Case Western Reserve University</i>); Thiagarajah, Nishanth (<i>Case Western Reserve University</i>); Hassan, Sarah (<i>Galvani Bioelectronics</i>); Jenkins, Michael W. (<i>Case Western Reserve University</i>); Lewis, Stephen (<i>Case Western Reserve University</i>)</p>	
<p>14:30-14:45 WeBT5.5</p> <p><b>Bidirectional Minimally Invasive Optogenetic Peripheral Nerve Interface</b></p> <p>Weir, Richard* (<i>Univ. of Colorado Denver\Anschutz Medical Campus</i>)</p>	
<p>14:45-15:00 WeBT5.6</p> <p><b>High-Density Flexible Penetrating Arrays in the Dorsal Root Ganglia: A Tool to Map PNS Afferents</b></p> <p>Seymour, John P.* (<i>University of Michigan</i>); Na, Kyoungwan (<i>University of Michigan</i>); Sperry, Zachariah (<i>University of Michigan</i>); Parizi, Saman (<i>University of Michigan</i>); Bruns, Tim M. (<i>University of Michigan</i>); Yoon, Euisik (<i>University of Michigan</i>)</p>	
<p>WeBT6: 13:30-15:00 Meeting Room 316B</p> <p><b>Minisymposia: Biomedical Imaging and Image Processing for Radiotherapy Application (fx381)</b> (Minisymposium)</p> <p><b>Chair:</b> Gu, Xuejun (<i>University of Texas Southwestern Medical Center</i>)</p> <p><b>Co-Chair:</b> Ji, Jim Xiuquan (<i>Texas A&amp;M University</i>)</p>	
<p>13:30-13:45 WeBT6.1</p> <p><b>Deformable Image Registration and Machine Learning based Modeling for Rectal Toxicity Prediction for Prostate Cancer</b></p> <p>Zhen, Xin* (<i>Southern Medical Univ.</i>); He, Qiang (<i>Southern Medical Univ.</i>); Long, Troy (<i>Univ. of Texas Southwestern Medical Center</i>); Kim, Nathan (<i>Univ. of Texas Southwestern Medical Center</i>); Chen, Mingli (<i>Univ. of Texas Southwestern Medical Center</i>); Lu, Weiguo (<i>Univ. of Texas Southwestern Medical Center</i>); Gu, Xuejun (<i>Univ. of Texas Southwestern Medical Center</i>)</p>	
<p>13:45-14:00 WeBT6.2</p> <p><b>Artificial Intelligence-Based Auto-Segmentation for Radiotherapy Application</b></p> <p>Gu, Xuejun* (<i>University of Texas Southwestern Medical Center</i>)</p>	
<p>14:00-14:15 WeBT6.3</p> <p><b>The Application of PET Imaging in Radiotherapy for Treatment Outcome Improvement</b></p> <p>McGuire, Sarah* (<i>Univ. of Texas Southwestern Medical Center</i>)</p>	
<p>14:15-14:30 WeBT6.4</p> <p><b>Ultrasound Imaging in Image-Guided Radiotherapy</b></p> <p>Yang, Xiaofeng* (<i>Emory University</i>)</p>	
<p>14:30-14:45 WeBT6.5</p> <p><b>The Application of Dual-Energy Computed Tomography in Proton Radiotherapy</b></p> <p>Yang, Ming* (<i>UT Southwestern Medical Center</i>)</p>	
<p>14:45-15:00 WeBT6.6</p> <p><b>Imaging and Localizing Brachytherapy Seeds using Positive Contrast MRI</b></p> <p>Vafay Eslahi, Samira (<i>Texas A&amp;M Univ.</i>); Shi, Caiyun (<i>Shenzhen Institutes of Advanced Technology, Lauterbur Research Center for BioMedical Imaging</i>); Huang, Yi (<i>Guangzhou Panyu Central Hospital</i>); Wang, Haifeng (<i>Chinese Academy of Sciences</i>); Yifeng, Ye (<i>Guangzhou Panyu Central Hospital</i>); Chen, Hanwei (<i>Guangzhou Panyu Central Hospital</i>); Xie, Guoxi (<i>Shenzhen Institutes of Advanced Technology, Lauterbur Research Center for BioMedical Imaging</i>); Ji, Jim Xiuquan* (<i>Texas A&amp;M Univ.</i>)</p>	
<p>WeBT7: 13:30-15:00 Meeting Room 316C</p> <p><b>Minisymposia: How Neurophysiology Informs Rehabilitation Engineering (h43di)</b> (Minisymposium)</p> <p><b>Chair:</b> Milosevic, Matija (<i>University of Tokyo</i>)</p>	
<p>13:30-13:45 WeBT7.1</p> <p><b>Neural Stem Cells: From Basic Biology to Tissue Repair</b></p> <p>Morshead, Cindi* (<i>University of Toronto</i>)</p>	
<p>13:45-14:00 WeBT7.2</p> <p><b>Neural Mechanisms Underlying Robot-Assisted Training</b></p> <p>Nakazawa, Kimitaka* (<i>University of Tokyo</i>)</p>	
<p>14:00-14:15 WeBT7.3</p> <p><b>Implications of Electrical Stimulation on the Central Nervous System</b></p> <p>Milosevic, Matija* (<i>University of Tokyo</i>)</p>	
<p>14:15-14:30 WeBT7.4</p> <p><b>Neurophysiological Mechanisms of Deep Brain Stimulation in Movement Disorders</b></p> <p>Milosevic, Luka* (<i>University of Toronto</i>); Hutchison, William (<i>University of Toronto</i>); Popovic, Milos R. (<i>University of Toronto</i>)</p>	
<p>14:30-14:45 WeBT7.5</p> <p><b>Neuroprostheses for Improving Upper Limb Motor Function</b></p> <p>Popovic, Milos R.* (<i>University of Toronto</i>)</p>	
<p>WeBT8: 13:30-15:00 Meeting Room 318A</p> <p><b>Minisymposia: Challenges and Clinical Unmet Needs in Cardiac MRI: From Signal Processing to Artificial Intelligence (h952q)</b> (Minisymposium)</p> <p><b>Chair:</b> Kheradvar, Arash (<i>University of California, Irvine</i>)</p> <p><b>Co-Chair:</b> Jafarkhani, Hamid (<i>University of California, Irvine</i>)</p>	
<p>13:30-13:45 WeBT8.1</p> <p><b>Effect of Blood Viscosity in Children with Univentricular Heart Defects: Challenges in Measurement</b></p> <p>Cheng, Andrew* (<i>Children's Hospital Los Angeles, University of Southern California</i>)</p>	
<p>13:45-14:00 WeBT8.2</p> <p><b>MRI-Based Measures of Left Ventricle Contractility and Intrinsic Frequency</b></p> <p>Pahlevan, Niema* (<i>University of Southern California</i>)</p>	
<p>14:00-14:15 WeBT8.3</p> <p><b>4D Multiphase Steady State Imaging with Contrast Enhancement (MUSIC) Cardiac MRI</b></p> <p>Hu, Peng* (<i>University of California Los Angeles</i>); Finn, J. Paul (<i>University of California Los Angeles</i>)</p>	
<p>14:15-14:30 WeBT8.4</p> <p><b>4D Flow Imaging: Opportunities and Challenges</b></p> <p>Callahan, Sean* (<i>University of Louisville</i>); Amini, Amir (<i>University of Louisville</i>)</p>	

WeBT9: 13:30-15:00 Meeting Room 318B  
**Minisymposia: How to Teach Robots How to Move: Lessons from Biological Motor Control (qnj6y)** (Minisymposium)  
**Chair:** Forner-Cordero, Arturo (*Polytechnic School. Univ. of Sao Paulo*)  
**Co-Chair:** Dario, Paolo (*Scuola Superiore Sant'Anna*)

13:30-13:45 WeBT9.1  
**On the Development of a Biomimetic Impedance Control Law for Lower Extremity Wearable Robots**  
 Rouse, Elliott\* (*University of Michigan*); Shorter, Amanda (*Northwestern University*)

13:45-14:00 WeBT9.2  
**Teaching Robots: Biology Helps Us to Make Robots Walk**  
 Duysens, Jacques (*KU-Leuven, FABER*); Moura, Rafael Traldi (*Polytechnic School. University of Sao Paulo*); Forner-Cordero, Arturo\* (*Escola Politécnica da Universidade de Sao Paulo*)

WeBT10: 13:30-15:00 Meeting Room 319A  
**Minisymposia: Time-Varying Estimation of Human Neuromechanics: Modern Approaches and their Applications (sfmvy)** (Minisymposium)  
**Chair:** Ludvig, Daniel (*Northwestern University*)  
**Co-Chair:** Perreault, Eric (*Northwestern University*)

13:30-13:45 WeBT10.1  
**Temporal Expansion and Nonlinear Parameter Varying Approaches to the Identification of Time-Varying Dynamic Joint Stiffness**  
 Kearney, Robert Edward\* (*McGill Univ.*); Sobhani Tehrani, Ehsan (*McGill Univ.*); Guarin, Diego Luis (*Harvard Medical School*)

13:45-14:00 WeBT10.2  
**Estimation of Time-Varying Joint Impedance using an Ensemble of Short Segments**  
 Ludvig, Daniel\* (*Northwestern University*)

14:00-14:15 WeBT10.3  
**Identification of Time-Varying Wrist Joint Impedance**  
 Mugge, Winfred\* (*Delft University of Technology*); van de Ruit, Mark (*School of Sport, Exercise and Rehabilitation Sciences, College of Life and Environmental Life Sciences, University of Birmingham*); Kerklaan, Martijn (*Delft University of Technology*); Cavallo, Gaia (*Vrije Universiteit Brussel*); Lataire, John (*Vrije Universiteit Brussel*); van der Helm, Frans C.T. (*Delft University of Technology*); van Wingerden, Jan-Willem (*Delft University of Technology*); Schouten, Alfred (*Delft University of Technology*)

14:15-14:30 WeBT10.4  
**Estimating Time-Varying Joint Dynamics: What Do We Need?**  
 Schouten, Alfred\* (*Delft University of Technology*); van de Ruit, Mark (*School of Sport, Exercise and Rehabilitation Sciences, College of Life and Environmental Life Sciences, University of Birmingham*); Mugge, Winfred (*Delft University of Technology*)

WeBT11: 13:30-15:00 Meeting Room 319B  
**Minisymposia: Microphysiological System for Drug Screening and Disease Modeling (u698e)** (Minisymposium)

13:30-13:45 WeBT11.1  
**Development of a Micro-Vessel-Containing Liver-on-a-Chip System**  
 Gu, Zhong-Ze\* (*Southeast University*); Chen, Zaozao (*Southeast University*); Zheng, Fuyin (*MIT*)

13:45-14:00 WeBT11.2  
**Microphysiological System of Cerebral Organoid for Disease Modeling of Neuropsychiatric Disorders**  
 Xu, Bin\* (*Columbia University*); Chen, Zaozao (*Southeast University*); Leong, Kam (*Columbia University*)

WeBT12: 13:30-15:00 Meeting Room 321A  
**Pharmaceutical Engineering (Theme 13)** (Oral Session)  
**Chair:** Kang, Dongwoo (*Daichi Sankyo*)

13:30-13:45 WeBT12.1  
**Parameter Optimization of Injectable Polycaprolactone Microspheres Containing Curcumin using Response Surface Methodology**  
 Barik, Anwasha (*School of Medical Science and Technology, IIT Kharagpur*); Choudhury, Indraneil (*School of Medical Science and Technology, IIT Kharagpur*); Chakravorty, Nishant\* (*School of Medical Science and Technology, IIT Kharagpur*)

13:45-14:00 WeBT12.2  
**Spiral Folded Adhesive Plaster Optimization for Laparoscopic Surgery**  
 Miura, Satoshi\* (*Waseda University*); Tsuda, Naoya (*Waseda University*); Parque, Victor (*Waseda University*); Miyashita, Tomoyuki (*Waseda University*)

14:00-14:15 WeBT12.3  
**The Inhibition of Acetylcholinesterase by a Brain-Targeting Polylysine-ApoE Peptide: Biochemical and Structural Characterizations**  
 Lu, Lu (*Wenzhou-Kean Univ.*); Michelena, Toby (*Wenzhou-Kean Univ.*); Wong, Aloysius (*Wenzhou-Kean Univ.*); Zhang, Changjiang (*Wenzhou-Kean Univ.*); Meng, Yu\* (*Wenzhou-Kean Univ.*)

14:15-14:30 WeBT12.4  
**A Model of Acetaminophen Pharmacokinetics and Its Effect on Continuous Glucose Monitoring Sensor Measurements**  
 Schiavon, Michele (*University of Padova*); Acciaroli, Giada (*University of Padova*); Vettoretti, Martina (*University of Padova*); Giarretta, Alberto (*University of Padova, Dept. of Information Engineering*); Visentin, Roberto\* (*University of Padova*)

WeBT13: 13:30-15:00 Meeting Room 321B  
**Signal Processing and Classification in Sleep Studies (Theme 1)** (Oral Session)  
**Chair:** Penzel, Thomas (*Charite Universitätsmedizin Berlin*)  
**Co-Chair:** Phan, Huy (*University of Oxford*)

13:30-13:45 WeBT13.1  
**Probabilistic Data-Driven Method for Limb Movement Detection during Sleep**  
 Cesari, Matteo\* (*Technical University of Denmark*); Christensen, Julie Anja Engelhard (*Technical University of Denmark*); Jennum, Poul (*University of Copenhagen, Demnar*); Sorensen, Helge B D (*Technical University of Denmark*)

13:45-14:00 WeBT13.2  
**Improving the Diagnostic Ability of Oximetry Recordings in Pediatric Sleep Apnea-Hypopnea Syndrome by Means of Multi-Class AdaBoost**  
 Vaquerizo-Villar, Fernando (*BioMedical Engineering Group, Univ. of Valladolid*); Álvarez, Daniel (*Univ. of Valladolid*); Kheirandish-Gozal, Leila (*Section of Sleep Medicine, Dept. of Pediatrics, Pritzker School of Medicine, The Univ. of Chicago*); Gutierrez, Gonzalo Cesar (*Univ. of Valladolid*); Barroso-García, Verónica (*BioMedical Engineering Group, E.T.S.I. de Telecomunicación, Univ. of Valladolid*); Crespo, Andrea (*Hospital Univ. Rio Hortega, Valladolid*); del Campo, Félix (*Hospital del Río Hortega. Univ. De Valladolid*); Gozal, David (*Section of Sleep Medicine, Dept. of Pediatrics, Pritzker School of Medicine, Biological Sciences Division, The Univ. o*); Hornero, Roberto\* (*Univ. of Valladolid*)

14:00-14:15 WeBT13.3  
**Multichannel Sleep Stage Classification and Transfer Learning using Convolutional Neural Networks**  
 Andreotti, Fernando\* (*Univ. of Oxford*); Phan, Huy (*Univ. of Oxford*); Cooray, Navin (*Institute of BioMedical Engineering, Univ. of Oxford*); Lo, Christine (*Sheffield Institute of Translational Neuroscience*); Hu, Michele (*Nuffield Dept. of Clinical NeuroSciences, Univ. of Oxford*); De Vos, Maarten (*Univ. of Oxford*)

14:15-14:30	WeBT13.4	<b>Bispectral Analysis to Enhance Oximetry as a Simplified Alternative for Pediatric Sleep Apnea Diagnosis</b> Gutierrez, Gonzalo Cesar* ( <i>Univ. of Valladolid</i> ); Kheirandish-Gozal, Leila ( <i>Section of Sleep Medicine, Dept. of Pediatrics, Pritzker School of Medicine, The Univ. of Chicago</i> ); Vaquerizo-Villar, Fernando ( <i>BioMedical Engineering Group, Univ. of Valladolid</i> ); Álvarez, Daniel ( <i>Univ. of Valladolid</i> ); Barroso-García, Verónica ( <i>BioMedical Engineering Group, E.T.S.I. de Telecomunicación, Univ. of Valladolid</i> ); Crespo, Andrea ( <i>Hospital Universitario Río Hortega, Valladolid</i> ); del Campo, Félix ( <i>Hospital del Río Hortega. Univ. De Valladolid</i> ); Gozal, David ( <i>Section of Sleep Medicine, Dept. of Pediatrics, Pritzker School of Medicine, Biological Sciences Division, The Univ. of</i> ); Hornero, Roberto ( <i>Univ. of Valladolid</i> )	WeBT15: 13:30-15:00 Meeting Room 323A <b>Minisymposia: Classifying Neuro-Pathological Movement Patterns (b7n22) (Minisymposium)</b> <b>Chair:</b> Dhafer, Yasin ( <i>Northwestern University</i> )
13:30-13:45	WeBT15.1	<b>Data Analytics and Machine Learning Tools: Automatic, Sensor-Based Assessment of Gait Data in Parkinson's Disease</b> Eskofier, Bjoern M* ( <i>Friedrich-Alexander-Universität Erlangen-Nürnberg</i> ); Klucken, Jochen ( <i>University Hospital Erlangen</i> )	
13:45-14:00	WeBT15.2	<b>Recognition of Perturbation Induced Locomotor Patterns using Machine Learning</b> Dhafer, Yasin* ( <i>Northwestern Univ.</i> ); Montes III, Elliot J. ( <i>Northwestern Univ.</i> ); Kim, Hyungtaek ( <i>Northwestern Univ.</i> )	
14:00-14:15	WeBT15.3	<b>Classifying Neurological Gait Disorders using Scalable and Integrative Learning of Biosensing Data</b> Papavasileiou, Ioannis* ( <i>University of Connecticut</i> ); Zhang, Wenlong ( <i>Arizona State University</i> ); Bi, Jinbo ( <i>University of Connecticut</i> ); Han, Song ( <i>University of Connecticut</i> )	
14:15-14:30	WeBT15.4	<b>Predicting Gait Parameters from a Single Video</b> Kidzinski, Lukasz* ( <i>Stanford University</i> ); Yang, Bryan ( <i>Stanford University</i> ); Delp, Scott ( <i>Stanford University</i> ); Schwartz, Michael ( <i>Gillette Children's Specialty Healthcare</i> )	
14:45-15:00	WeBT13.6	<b>Interactive Sleep Stage Labelling Tool for Diagnosing Sleep Disorder using Deep Learning</b> Lee, Woonghee ( <i>Hanyang University</i> ); Kim, Younghoon* ( <i>Hanyang University</i> )	
WeBT14: 13:30-15:00	Meeting Room 322AB	<b>Minisymposia: Recent Challenges and Advances in Cuffless Blood Pressure Measurement (II) (5m48d) (Minisymposium)</b> <b>Chair:</b> Mukkamala, Ramakrishna ( <i>Michigan State University</i> )	
13:30-13:45	WeBT14.1	<b>Smartphone-Based Blood Pressure Monitoring</b> Chandrasekhar, Anand ( <i>Indian Institute of Technology Madras</i> ); Kim, Chang-Sei ( <i>Chonnam National University</i> ); Naji, Mohammed ( <i>Michigan State University</i> ); Natarajan, Keerthana ( <i>Michigan State University</i> ); Hahn, Jin-Oh ( <i>University of Maryland</i> ); Mukkamala, Ramakrishna* ( <i>Michigan State University</i> )	
13:45-14:00	WeBT14.2	<b>Tonometry-Based Blood Pressure Measurements using a Two-Dimensional Force Sensor Array</b> Mehrotra, Sanjay* ( <i>Northwestern Univ.</i> ); Mikhelson, Ilya ( <i>Northwestern Univ.</i> ); Sahakian, Alan ( <i>Northwestern Univ.</i> )	
14:00-14:15	WeBT14.3	<b>Correlation between Arterial Blood Pressure and Pulse Transit Time Measured by a Patch-Type Wearable Device</b> Park, Jonghyun ( <i>Seoul National University, Graduate School</i> ); Lee, Joonnyong ( <i>Seoul National University</i> ); Yang, Seungman ( <i>Seoul National University</i> ); Sohn, Jangjay ( <i>Seoul National University</i> ); Lee, Saram ( <i>Seoul National University Hospital</i> ); Kim, Hee Chan* ( <i>Seoul National University</i> )	
14:15-14:30	WeBT14.4	<b>Pre-and-Post Exercise Blood Pressure Estimation from Force-Measured Ultrasound: First Results</b> Zakrzewski, Aaron M. ( <i>Massachusetts Institute of Technology</i> ); Anthony, Brian W.* ( <i>Massachusetts Institute of Technology</i> )	
WeBT16: 13:30-15:00	Meeting Room 323B	<b>Minisymposia: Challenges in Bioelectric Medicine (9mfer) (Minisymposium)</b> <b>Chair:</b> Butera, Robert ( <i>Georgia Institute of Technology</i> ) <b>Co-Chair:</b> Bouton, Chad ( <i>Northwell Health/Feinstein Institute for Medical Research</i> )	
13:30-13:45	WeBT16.1	<b>Pancreatic Neuromodulation in a Diabetic Rat Model</b> Dirr, Elliott ( <i>Univ. of Florida</i> ); Patel, Yogi ( <i>Johns Hopkins Univ.</i> ); Johnson, Richard ( <i>Univ. of Florida</i> ); Campbell-Thompson, Martha ( <i>Univ. of Florida</i> ); Otto, Kevin* ( <i>Univ. of Florida</i> )	
13:45-14:00	WeBT16.2	<b>Kilohertz Nerve Block to Enable Directional Neural Stimulation</b> Butera, Robert* ( <i>Georgia Institute of Technology</i> ); Patel, Yogi ( <i>Johns Hopkins University</i> )	
14:00-14:15	WeBT16.3	<b>Modulation of Glucose Metabolism via Electrical Inhibition of Sympathetic Nerves</b> Patel, Yogi* ( <i>Johns Hopkins University</i> ); Butera, Robert ( <i>Georgia Institute of Technology</i> )	
14:15-14:30	WeBT16.4	<b>Targeting the Neural Innervation for Ventilatory Control</b> Jung, Ranu* ( <i>Florida International University</i> ); Siu, Ricardo ( <i>Florida International University</i> ); Abbas, James ( <i>Arizona State University</i> ); Renaud, Sylvie ( <i>University Bordeaux, CNRS</i> ); Bornat, Yannick ( <i>IMS Lab</i> ); Hillen, Brian ( <i>Florida International University</i> )	
14:30-14:45	WeBT16.5	<b>Recent Advances in Neural Decoding and Stimulation Technologies for Diagnosing and Treating Organ-Related Conditions and Injury</b> Bouton, Chad* ( <i>Northwell Health/Feinstein Institute for Medical Research</i> )	



**WeBT17: 13:30-15:00** Meeting Room 323C  
**Minisymposia: Future Trends in System Design of Retinal and Cortical Visual Implants. (8617p)** (Minisymposium)  
**Chair:** Caspi, Avi (*JCT - Lev Academic Center*)

13:30-13:45 WeBT17.1  
**Mobile Object Recognition for Prosthetic Vision**  
 Katyal, Kapil\* (*Johns Hopkins University Applied Physics Lab*); Billings, Seth (*JHU/APL*); Duckworth, Dexter (*Johns Hopkins University Applied Physics Lab*)

13:45-14:00 WeBT17.2  
**Energy-Efficient Multichannel Intracortical Visual Stimulation**  
 Hasanuzzaman, Md. (*Polytechnique Montreal*); Wang, Guoxing (*Shanghai Jiao Tong University*); Raut, Rabindranath (*Concordia University*); Sawan, Mohamad\* (*Polytechnique Montreal*)

14:00-14:15 WeBT17.3  
**Eye Tracking Control in Visual Prostheses**  
 Caspi, Avi\* (*JCT - Lev Academic Center*); Roy, Arup (*Second Sight Medical Products, Inc.*)

14:15-14:30 WeBT17.4  
**Computer Vision to Improve Navigation with Retinal Implants**  
 Weiland, James\* (*University of Michigan*); Adebiyi, Aminat (*IBM*); Mante, Nii Tete (*BuzzFeed*); Hojun Son, Hojun (*University*); Cheung, Kai Ho Edgar (*University of Michigan Ann Arbor*); Johnson-Roberson, Matthew (*University of Michigan*)

**WeBT18: 13:30-15:00** Meeting Room 324  
**Minisymposia: Using Engineering Approaches for Basic Discovery in Neuroscience (1e91r)** (Minisymposium)  
**Chair:** White, John (*Boston University*)  
**Co-Chair:** Durand, Dominique (*Case Western Reserve University*)

13:30-13:45 WeBT18.1  
**Origins of Coherent Oscillatory Activity in the Brain**  
 White, John\* (*Boston University*)

13:45-14:00 WeBT18.2  
**Reading and Writing the Neural Code in Neural Circuits**  
 Stanley, Garrett\* (*Georgia Institute of Technology & Emory University*)

14:00-14:15 WeBT18.3  
**Is Ephatic Coupling Involved in Self-Propagating Non-Synaptic Waves in the Brain?**  
 Durand, Dominique\* (*Case Western Reserve University*); Wei, Xile (*Tianjin University*)

**WeBT19: 13:30-15:00** Meeting Room 325A  
**Minisymposia: Pharmacometrics Approaches and Novel Drug Delivery Systems in Pharmaceutical Engineering (h1v9g)** (Minisymposium)  
**Chair:** Park, Kyungsoo (*Yonsei University College of Medicine*)

13:30-13:45 WeBT19.1  
**Pharmaceutical Engineering for Novel Drug Delivery Systems**  
 Jung, Hyungil\* (*Yonsei University*)

13:45-14:00 WeBT19.2  
**Chronic Drug Delivery to Deep Brain Region**  
 Cho, Il-Joo\* (*Korea Institute of Science and Technology (KIST)*); Shin, Hyogeun (*Korea Institute of Science and Technology*); Chae, Uikyoo (*Korea Institute of Science and Technology (KIST)*); Roh, Donghyeon (*KIST*)

14:00-14:15 WeBT19.3  
**Precision Machine Learning Assisted Clinical Trial Eligibility Assessment using Health Record**  
 Jeon, Yoomin (*Seoul National University*); Lee, Howard\* (*Seoul National University Hospital*)

**WeBT20: 13:30-15:00** Meeting Room 325B  
**Invited Session: Computational Human Models (II) Deformable and Personalized Models. Machine Learning (mq9e6)** (Invited Session)

13:30-13:45 WeBT20.1  
**Deformation of Mesh-Type ICRP Reference Computational Phantoms in Different Statures and Postures for Personalized Dose Calculations**  
 Han, Haegun (*Hanyang University*); Yeom, Yeon Soo (*Hanyang University*); Nguyen, Thang Tat (*Hanyang University*); Choi, Chansoo (*Hanyang University*); Lee, Hanjin (*Hanyang University*); Shin, Bangho (*Hanyang University*); Zhang, Xujia (*Hanyang University*); Kim, Chan Hyeong\* (*Hanyang University*)

13:45-14:00 WeBT20.2  
**A Computational Method for Voxel to Polygon Mesh Conversion of Anatomic Computational Human Phantoms**  
 Brown, Justin (*University of Florida*); Furuta, Takuya (*Japan Atomic Energy Agency*); Wesley, Bolch\* (*University of Florida*)

14:00-14:15 WeBT20.3  
**Personalized Models and Human Growth Models for EMF Simulations**  
 Nagaoka, Tomoaki\* (*National Institute Info & Comm Tech*)

14:15-14:30 WeBT20.4  
**Modeling of the Bone Healing Process using Deep Machine Learning**  
 Ghiasi, Mohammadsadegh (*Northeastern University and Beth Israel Deaconess Medical Center at Harvard Medical*); Margaret, Babikian (*BIDMC*); Hussein Ali, Amira (*BU*); Louis, Gerstenfeld (*BU*); Nazarian, Ara\* (*Harvard Med School*)

14:30-14:45 WeBT20.5  
**Use of Xray Imaging and Machine Learning to Assess Feature Risk in Patients with Osteoporosis and Low Bone Density: A Potential Solution for Resource Constrained Settings**  
 Cubria, Maria (*BIDMC*); Oftadeh, Ramin (*BIDMC*); Lechtig, Aron (*BIDMC*); Egan, Jonathan (*BIDMC*); Hanna, Philip (*BIDMC*); Putman, Melissa (*MGH*); Elhamifar, Ehsan (*BIDMC*); Nazarian, Ara\* (*Harvard Med School*); Rodriguez, Edward (*Beth Israel Deaconess Medical Center*)

14:45-15:00 WeBT20.6  
**Breathing Sequence for CAD NELLY Model and Its Applications**  
 Noetscher, Gregory (*Worcester Polytechnic Institute*); Tran, Anh Le (*Worcester Polytechnic Institute*); Makarov, Sergey (*Electrical and Computer Engineering, Worcester Polytechnic Institute*); Prokop, Alexander\* (*CST - A Dassault Systèmes Company*)

**WePoS-01: 17:15-19:00** Exhibit Hall 2  
**Adaptive and Kalman Filtering – Poster Session (Theme 1)** (Poster Session)

17:15-19:00 WePoS-01.1  
**Analysis of the Effects of Medication for the Treatment of Epilepsy by Ensemble Iterative Extended Kalman Filtering**  
 Moontaha, Sidratul\* (*Christian-Albrechts-Univ. of Kiel, Univ. Schleswig-Holstein*); Galka, Andreas (*Christian-Albrechts-Univ. of Kiel*); Meurer, Thomas (*Faculty of Engineering, Univ. of Kiel*); Siniatchkin, Michael (*Univ. of Kiel*)

17:15-19:00 WePoS-01.2  
**Knowledge-Driven Dictionaries for Sparse Representation of Continuous Glucose Monitoring Signals**  
 Goel, Niraj (*Texas A&M Univ.*); Chaspari, Theodora\* (*Texas A&M Univ.*); Mortazavi, Bobak (*Texas A&M Univ.*); Prioleau, Temiloluwa (*Rice Univ.*); Sabharwal, Ashutosh (*Rice Univ.*); Gutierrez-Osuna, Ricardo (*Texas A&M Univ.*)

17:15-19:00	WePoS-01.3	<b>Tracking the Time Varying Neural Tuning via Adam on Point Process Observations</b> Zitong, Zhang ( <i>Zhejiang Univ.</i> ); Chen, Shuhang* ( <i>Hong Kong Univ. of Science and Technology</i> ); Yang, Zaiyue ( <i>Southern Univ. of Science and Technology</i> ); Wang, Yiwen ( <i>Hong Kong Univ. of Science and Technology</i> )	17:15-19:00	WePoS-02.8	<b>EEG Processing to Discriminate Transitive-Intransitive Motor Imagery Tasks: Preliminary Evidences using Support Vector Machines</b> Catrambone, Vincenzo* ( <i>Univ. di Pisa</i> ); Greco, Alberto ( <i>Univ. of Pisa</i> ); Averta, Giuseppe ( <i>Univ. of Pisa</i> ); Bianchi, Matteo ( <i>Univ. of Pisa</i> ); Vanello, Nicola ( <i>Univ. of Pisa</i> ); Bicchi, A. ( <i>Univ. of Pisa</i> ); Valenza, G. ( <i>Univ. of Pisa</i> ); Scilingo, E.P. ( <i>Univ. of Pisa</i> )
17:15-19:00	WePoS-01.4	<b>Pipeline for Forward Modeling and Source Imaging of Magneto cardiographic Recordings via Spatiotemporal Kalman Filtering</b> Habboush, Nawar* ( <i>University of Kiel</i> ); Hamid, Laith ( <i>University of Kiel</i> ); Siniatchkin, Michael ( <i>University of Kiel</i> ); Stephani, Ulrich ( <i>Christian-Albrechts-University of Kiel</i> ); Galka, Andreas ( <i>Christian-Albrechts-University of Kiel</i> )	17:15-19:00	WePoS-02.9	<b>Evaluation of Different Signal Processing Methods in Time and Frequency Domain for Brain-Computer Interface Applications</b> Amin, Jetsada* ( <i>University of Strathclyde</i> ); Kahani, Danial ( <i>University of Strathclyde</i> ); Lakany, Heba ( <i>University of Strathclyde</i> ); Conway, Bernard A. ( <i>University of Strathclyde</i> )
<b>WePoS-02: 17:15-19:00</b>		<b>Exhibit Hall 2</b>			
<b>Biosignal Processing for Motor Imagery Studies – Poster Session (Theme 1) (Poster Session)</b>					
17:15-19:00	WePoS-02.1	<b>Comparison of Different EEG Signal Analysis Techniques for an Offline Lower Limb Motor Imagery Brain-Computer Interface</b> Ortiz, Mario* ( <i>Universidad Miguel Hernández</i> ); Rodriguez-Ugarte, Marisol ( <i>Miguel Hernández University of Elche</i> ); Ianez, Eduardo ( <i>Universidad Miguel Hernandez de Elche</i> ); Azorin, Jose M. ( <i>Universidad Miguel Hernandez de Elche</i> )	17:15-19:00	WePoS-02.10	<b>Real-Time Human Physical Activity Recognition with Low Latency Prediction Feedback using Raw IMU Data</b> Mascret, Quentin* ( <i>Laval University</i> ); Biellmann, Mathieu ( <i>Laval University</i> ); Cheikh Latyr, Fall ( <i>Université Laval</i> ); Bouyer, Laurent ( <i>University of Laval</i> ); Gosselin, Benoit ( <i>Laval University</i> )
<b>WePoS-03: 17:15-19:00</b>		<b>Exhibit Hall 2</b>			
<b>Connectivity, Causality and Phase Locking in Biomedical Signals – Poster Session (Theme 1) (Poster Session)</b>					
17:15-19:00	WePoS-02.2	<b>Sparse Kernel Machines for Motor Imagery EEG Classification</b> Oikonomou, Vangelis ( <i>Centre for Research and Technology Hellas</i> ); Nikolopoulos, Spiros ( <i>Information Technologies Institute, Centre for Research and Technology Hellas</i> ); Petrantonakis, Panagiotis* ( <i>Information Technologies Institute, Centre for Research and Technology-Hellas (CERTH)</i> ); Kompatsiaris, Ioannis (Yannis) ( <i>Information Technologies Institute, CERTH</i> )	17:15-19:00	WePoS-03.1	<b>EEG based Network Connectivity Classification in 7 and 9 Years-Old Children</b> Almabruk, Tahani A. A.* ( <i>Omar Al-Mukhtar University</i> ); Tan, Tele ( <i>Curtin University</i> ); Khan, Masood Mehmood ( <i>Curtin University</i> )
17:15-19:00	WePoS-02.3	<b>Analysis and Classification for EEG Patterns of Force Motor Imagery using Movement Related Cortical Potentials</b> Wang, Kun* ( <i>Tianjin University</i> ); Xu, Minpeng ( <i>Tianjin University</i> ); Zhang, Shanshan ( <i>Tianjin University</i> ); Ke, Yufeng ( <i>Tianjin University</i> ); Ming, Dong ( <i>Tianjin University</i> )	17:15-19:00	WePoS-03.2	<b>Low Gamma Band Cortico-Muscular Coherence Inter-Hemisphere Difference following Chronic Stroke</b> Bao, Shi-chun* ( <i>Chinese Univ. of Hong Kong</i> ); Wong, Wan-wa ( <i>Chinese Univ. of Hong Kong</i> ); Leung, Wai Hong ( <i>Chinese Univ. of Hong Kong</i> ); Tong, Kai Yu, Raymond ( <i>Chinese Univ. of Hong Kong</i> )
17:15-19:00	WePoS-02.4	<b>FBCSP-Based Multi-Class Motor Imagery Classification using BP and TDP Features</b> Abbas, Waseem* ( <i>Lahore University of Management Sciences</i> ); Khan, Nadeem Ahmad ( <i>Signal Image and Video Processing Lab, Electrical Engineering, Syed Babar Ali School of Science and Engineering, Lahore University</i> )	17:15-19:00	WePoS-03.3	<b>Preliminary Evaluation of Fetal Congenital Heart Defects Changes on Fetal-Maternal Heart Rate Coupling Strength</b> Alangari, Haitham M.* ( <i>Khalifa University</i> ); Kimura, Yoshitaka ( <i>Tohoku University</i> ); Khandoker, Ahsan H ( <i>Khalifa University of Science, Technology and Research</i> )
17:15-19:00	WePoS-02.5	<b>DeepMI: Deep Learning for Multiclass Motor Imagery Classification</b> Abbas, Waseem* ( <i>Lahore University of Management Sciences</i> ); Khan, Nadeem Ahmad ( <i>Signal Image and Video Processing Lab, Electrical Engineering, Syed Babar Ali School of Science and Engineering, Lahore University</i> )	17:15-19:00	WePoS-03.4	<b>Complex Modulation Method for Measuring Cross-Frequency Coupling of Neural Oscillations</b> Malinowska, Urszula ( <i>Johns Hopkins University School of Medicine</i> ); Zieleniewska, Magdalena ( <i>University of Warsaw</i> ); Boatman-Reich, Dana ( <i>Johns Hopkins School of Medicine</i> ); Franaszczuk, Piotr* ( <i>U.S. Army Research Lab</i> )
17:15-19:00	WePoS-02.6	<b>Emotion Recognition for Brain Machine Interface: Non-linear Spectral Analysis of EEG Signals using Empirical Mode Decomposition</b> Esmailbeigi, Hananeh ( <i>Univ. of Illinois at Chicago (UIC)</i> ); Carella, Tommaso ( <i>Univ. of Illinois at Chicago</i> ); De Silvestri, Matteo ( <i>Univ. of Illinois at Chicago</i> ); Finedore, Mary* ( <i>Univ. of Illinois at Chicago</i> ); Haniff, Isaac ( <i>Univ. of Illinois at Chicago</i> )	17:15-19:00	WePoS-03.5	<b>Modulation of Low-Frequency Pulsed Magnetic Field on Hippocampal Neural Oscillation in Depression Rats</b> Wang, Ling ( <i>Tianjin University</i> ); Yang, Jiajia* ( <i>Tianjin University</i> ); Wang, Faqi ( <i>Tianjin University</i> ); Zhou, Peng ( <i>Tianjin University</i> ); Wang, Kun ( <i>Tianjin University</i> ); Ming, Dong ( <i>Tianjin University</i> )
17:15-19:00	WePoS-02.7	<b>Unsupervised Phase Learning and Extraction from Repetitive Movements</b> Jatesiktat, Prayook ( <i>NTU</i> ); Anopas, Dollaporn* ( <i>Nanyang Technological University</i> ); Ang, Wei Tech ( <i>Nanyang Technological University</i> )	17:15-19:00	WePoS-03.6	<b>Assessment of EEG Connectivity Patterns in Mild Cognitive Impairment using Phase Slope Index</b> Gomez, Carlos* ( <i>University of Valladolid</i> ); Ruiz, Saúl J. ( <i>BioMedical Engineering Group, University of Valladolid</i> ); Poza, Jesus ( <i>University of Valladolid</i> ); Maturana-Candelas, Aarón ( <i>University of Valladolid</i> ); Núñez, Pablo ( <i>University of Valladolid</i> ); Pinto, Nàdia ( <i>Institute of Molecular Pathology and Immunology of the University of Porto (IPATIMUP)</i> ); Tola-Arribas, Miguel A. ( <i>Dept. of Neurology, Hospital Universitario Río Hortega</i> ); Cano, Mónica ( <i>Dept. of Clinical Neurophysiology, Hospital Universitario Río Hortega</i> ); Hornero, Roberto ( <i>University of Valladolid</i> )

17:15-19:00 WePoS-03.7  
**Nonlinear Interaction Analysis of Cardiovascular-Respiratory Data by Means of Convergent Cross Mapping**  
 Schiecke, Karin\* (*Jena University Hospital, Friedrich Schiller University Jena*); Pester, Britta (*Jena University Hospital; Friedrich Schiller University Jena*); Schumann, Andy (*Psychiatric Brain & Body Research Group Jena, Dept. of Psychiatry and Psychotherapy, Jena University Hospital, Jena, Germany*); Bär, Karl-Jürgen (*Friedrich-Schiller-University of Jena*)

17:15-19:00 WePoS-03.8  
**Functional Brain Network Analysis Reveals Time-on-Task Related Performance Decline**  
 Sun, Yu\* (*Zhejiang University*); Bezerianos, Anastasios (*National University of Singapore*); Thakor, Nitish (*Johns Hopkins University*); Li, Jingsong (*Zhejiang University*)

17:15-19:00 WePoS-03.9  
**Biophysically Interpretable Recurrent Neural Network for Functional Magnetic Resonance Imaging Analysis and Sparsity based Causal Architecture Discovery**  
 Wang, Yuan\* (*New York Univ.*); Wang, Yao (*Polytechnic Institute of New York Univ.*); Lui, Yvonne (*NYU School of Medicine*)

WePoS-04: 17:15-19:00 Exhibit Hall 2  
**Data Mining for Biosignals – Poster Session (Theme 1) (Poster Session)**

17:15-19:00 WePoS-04.1  
**Adaptive Multi-Task Elastic Net based Feature Selection from Pharmacogenomics Databases**  
 Rahman, Raziur (*Texas Tech University*); Perera, Chamila (*Texas Tech University*); Ghosh, Souparno (*Texas Tech University*); Pal, Ranadip\* (*Texas Tech University*)

17:15-19:00 WePoS-04.2  
**An Approximate Nearest Neighbour System for Neonatal EEG Recall**  
 Murphy, Brian Michael\* (*Univ. College Cork*); Boylan, Geraldine (*Univ. College Cork*); Lightbody, Gordon (*Univ. College Cork*); Marnane, Liam (*Univ. College Cork*)

17:15-19:00 WePoS-04.3  
**Analysis of Features Extracted from EEG Epochs by Discrete Wavelet Decomposition and Hilbert Transform for Sleep Apnea Detection**  
 Prucnal, Monika A. (*Wrocław Univ. of Science and Technology*); Polak, Adam G.\* (*Wrocław Univ. of Science and Technology*)

17:15-19:00 WePoS-04.4  
**Multi-Modal Approach for Affective Computing**  
 Siddharth, Siddharth\* (*University of California, San Diego*); Jung, Tzzy-Ping (*University of California San Diego*); Sejnowski, Terrence J. (*The Salk Institute*)

17:15-19:00 WePoS-04.5  
**Classifying the Mental Representation of Word Meaning in Children with Multivariate Pattern Analysis of fNIRS**  
 Gemignani, Jessica\* (*NIRx Medizintechnik GmbH*); Bayet, Laurie (*Labs of Cognitive Neuroscience, Boston Children's Hospital*); Kabdebon, Claire (*Haskins Labs*); Blankertz, Benjamin (*Technische Universität Berlin*); Pugh, Kenneth R. (*Haskins Labs*); Aslin, Richard N. (*Haskins Labs*)

17:15-19:00 WePoS-04.6  
**Automating Interictal Spike Detection: Revisiting a Simple Threshold Rule**  
 Palepu, Anil (*Johns Hopkins Univ.*); Premananthan, Christine Sharmini (*Johns Hopkins Univ.*); Azhar, Feraz (*Harvard Medical School*); Vendrame, Martina (*Harvard Medical School*); Loddenkemper, Tobi (*Harvard Medical School/Children's Hospital Boston*); Reinsberger, Claus (*Harvard Medical School*); Kreiman, Gabriel (*Harvard Medical School*); Parkerson, Kimberly (*Harvard Medical School*); Sarma, Sridevi V.\* (*Johns Hopkins Univ.*); Anderson, William S. (*Johns Hopkins School of Medicine, Dept. of Neurosurgery*)

17:15-19:00 WePoS-04.7  
**Bioinformatics Identification of Drug Gene Modules: Application to Clear Cell Carcinoma of the Ovary**  
 Tchagang, Alain Beaudelaire\* (*National Research Council*)

17:15-19:00 WePoS-04.8  
**An Evaluation of EEG-Based Metrics for Engagement Assessment of Distance Learners**  
 Booth, Brandon\* (*University of Southern California*); Seamans, Taylor (*University of Southern California*); Narayanan, Shrikanth (*University of Southern California*)

17:15-19:00 WePoS-04.9  
**Spectrum and Phase Adaptive CCA for SSVEP-Based Brain Computer Interface**  
 Zhang, Zhuo\* (*A\*STAR*); Wang, Chuanchu (*Institute for Infocomm Research*); Ang, Kai Keng (*Institute for Infocomm Research*); Phyo Wai, Aung Aung (*Nanyang Technological University*); Guan, Cuntai (*Nanyang Technological University*)

17:15-19:00 WePoS-04.10  
**On the Interaction between Gaze Behavior and Physiological Responses when Viewing Garden Scenes**  
 Liu, Congcong\* (*Hong Kong Univ. of Science and Technology*); Zhang, Yawen (*Hong Kong Univ. of Science and Technology*); Herrup, Karl (*Hong Kong Univ. of Science and Technology*); Shi, Bertram E. (*Hong Kong Univ. of Science and Technology*)

17:15-19:00 WePoS-04.11  
**A Feature Selection Method based on Shapley Value to False Alarm Reduction in ICUs, a Genetic-Algorithm Approach**  
 Zaeri Amirani, Mohammad\* (*Northern Arizona University (NAU)*); Afghah, Fatemeh (*Northern Arizona University*); Mousavi, Sajad (*Northern Arizona University*)

WePoS-05: 17:15-19:00 Exhibit Hall 2  
**Neural Networks and Support Vector Machines for Biosignal Processing – Poster Session (Theme 1) (Poster Session)**

17:15-19:00 WePoS-05.1  
**A Comparison of 1-D and 2-D Deep Convolutional Neural Networks in ECG Classification**  
 Wu, Yunan\* (*Southern Medical University*); Yang, Feng (*Southern Medical University*); Liu, Ying (*Southern Medical University*); Zha, Xuefan (*Southern Medical University*); Yuan, Shaofeng (*Southern Medical University*)

17:15-19:00 WePoS-05.2  
**Recurrent Neural Network for Classification of Snoring and Non-Snoring Sound Events**  
 Arsenali, Bruno\* (*Eindhoven University of Technology*); van Dijk, Johannes (*Kempenhaghe Center for Sleep Medicine*); Ouweltjes, Okke (*Philips*); den Brinker, Bert (*Philips*); Pevernagie, Dirk (*Kempenhaghe Center for Sleep Medicine*); Krijn, Roy (*Kempenhaghe Center for Sleep Medicine*); van Gilst, Merel (*Eindhoven University of Technology*); Overeem, Sebastiaan (*Kempenhaghe Foundation, Sleep Medicine Centre*)

17:15-19:00	WePoS-05.3	<b>Deep Classification of Epileptic Signals</b> Ahmedt-Aristizabal, David* ( <i>Queensland Univ. of Technology</i> ); Fookes, Clinton ( <i>Queensland Univ. of Technology</i> ); Nguyen, Kien ( <i>Queensland Univ. of Technology</i> ); Sridharan, Sridha ( <i>Queensland Univ. of Technology</i> )	17:15-19:00	WePoS-05.13	<b>Automated Pain Assessment using Electrodermal Activity Data and Machine Learning</b> Susam, Busra* ( <i>University of Pittsburgh</i> ); Akcakaya, Murat ( <i>University of Pittsburgh</i> ); Nezamfar, Hooman ( <i>Northeastern University</i> ); Diaz, Damaris ( <i>Rady Children's Hospital, University of California San Diego</i> ); de Sa, Virginia ( <i>University of California, San Diego</i> ); Craig, Kenneth ( <i>University of British Columbia</i> ); Xu, Xiaojing ( <i>University of California, San Diego</i> ); Huang, Jeannie ( <i>Rady Children's Hospital, University of California San Diego</i> ); Goodwin, Matthew ( <i>Northeastern University</i> )
17:15-19:00	WePoS-05.4	<b>Finger ECG based Two-Phase Authentication using 1D Convolutional Neural Networks</b> Chen, Ying* ( <i>University of Aizu</i> ); Chen, Wenxi ( <i>University of Aizu</i> )	17:15-19:00	WePoS-05.14	<b>Convolutional Feature Vectors and Support Vector Machine for Animal Sound Classification</b> Ko, Kyungdeuk ( <i>Korea University</i> ); Park, Sangwook ( <i>Korea University</i> ); Ko, Hanseok* ( <i>Korea University</i> )
17:15-19:00	WePoS-05.5	<b>Optimal Insulin Bolus Dosing in Type 1 Diabetes Management: Neural Network Approach Exploiting CGM Sensor Information</b> Cappon, Giacomo* ( <i>University of Padova</i> ); Vettoretti, Martina ( <i>University of Padova</i> ); Marturano, Francesca ( <i>University of Padova</i> ); Facchinetti, Andrea ( <i>University of Padova</i> ); Sparacino, Giovanni ( <i>University of Padova</i> )	WePoS-06: 17:15-19:00 Exhibit Hall 2		
17:15-19:00	WePoS-05.6	<b>Arrhythmia Classification from Single Lead ECG by Multi-Scale Convolutional Neural Networks</b> Yao, Zhenjie* ( <i>Beijing University of Technology</i> ); Chen, Yixin ( <i>Washington University in St. Louis</i> )	<b>Nonlinear Analysis of Biosignals – Poster Session (Theme 1) (Poster Session)</b>		
17:15-19:00	WePoS-05.7	<b>Machine Learning of Spatiotemporal Bursting Behavior in Developing Neural Networks</b> Lee, YunHsuan* ( <i>Univ. of Washington Bothell</i> ); Stiber, Michael ( <i>Univ. of Washington Bothell</i> ); Si, Dong ( <i>Univ. of Washington</i> )	17:15-19:00	WePoS-06.1	<b>Enhanced Frequency Difference of Tumor Inside Vibrated Tissue by a Compression Cylinder</b> Miura, Satoshi* ( <i>Waseda Univ.</i> ); Shintaku, Yuta ( <i>Waseda Univ.</i> ); Ishiuchi, Hidekazu ( <i>Waseda Univ.</i> ); Parque, Victor ( <i>Waseda Univ.</i> ); Miyashita, Tomoyuki ( <i>Waseda Univ.</i> )
17:15-19:00	WePoS-05.8	<b>Detection of Early Stage Alzheimer's Disease using EEG Relative Power with Deep Neural Network</b> Kim, Donghyeon ( <i>Gwangju Institute of Science and Tech. (GIST)</i> ); Kim, Kiseon* ( <i>Gwangju Institute of Science and Tech.</i> )	17:15-19:00	WePoS-06.2	<b>Sample Entropy of High Frequency Oscillations for Epileptogenic Zone Localization</b> Su, Yung-Chih ( <i>National Tsing Hua University</i> ); Wu, Shun Chi* ( <i>National Tsing Hua University</i> ); Chen, Chien ( <i>Taipei Veterans General Hospital</i> ); Chou, Chen-Wei ( <i>National Tsing Hua University</i> ); Hung, Sheng-Che ( <i>University of North Carolina at Chapel Hill</i> ); Swindlehurst, A. Lee ( <i>University of California, Irvine</i> ); Kwan, Shang-Yeong ( <i>Taipei Veterans General Hospital</i> )
17:15-19:00	WePoS-05.9	<b>Crackle and Breathing Phase Detection in Lung Sounds with Deep Bidirectional Gated Recurrent Neural Networks</b> Messner, Elmar* ( <i>Graz University of Technology</i> ); Fediuk, Melanie ( <i>Medical University of Graz</i> ); Swatek, Paul ( <i>Medical University of Graz</i> ); Scheidl, Stefan ( <i>Medical University of Graz</i> ); Smolle-Jüttner, Freya-Maria ( <i>Medical University of Graz</i> ); Olschewski, Horst ( <i>Medical University of Graz</i> ); Pernkopf, Franz ( <i>Graz University of Technology</i> )	17:15-19:00	WePoS-06.3	<b>Normalization Factor for the Assessment of Elbow Spasticity with Passive Stretch Measurement: Maximum Torque vs. Body Weight</b> Wang, Lei ( <i>Shenzhen Institutes of Advanced Technology Chinese Academy of Sciences</i> ); Guo, Xin ( <i>Hebei University of Technology</i> ); Samuel, Oluwarotimi Williams ( <i>Shenzhen Institutes of Advanced Technology</i> ); Huang, Pin-Gao ( <i>Chinese Academy of Sciences</i> ); Wang, Hui* ( <i>Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences</i> ); Li, Guanglin ( <i>Shenzhen Institutes of Advanced Technology</i> )
17:15-19:00	WePoS-05.10	<b>Enhanced Error Decoding from Error-Related Potentials using Convolutional Neural Networks</b> Mayor Torres, Juan Manuel ( <i>University of Trento</i> ); Clarkson, Tessa ( <i>Stony Brook University</i> ); Stepanov, Evgeny A. ( <i>University of Trento</i> ); Luhmann, Christian C. ( <i>Stony Brook University</i> ); Lerner, Matthew D. ( <i>Stony Brook University</i> ); Riccardi, Giuseppe* ( <i>University of Trento</i> )	17:15-19:00	WePoS-06.4	<b>A Multiclass Arousal Recognition using HRV Nonlinear Analysis and Affective Images</b> Nardelli, Mimma ( <i>University of Pisa</i> ); Greco, Alberto* ( <i>University of Pisa</i> ); Valenza, Gaetano ( <i>University of Pisa</i> ); Lanata', Antonio ( <i>University of Pisa</i> ); Bailon, Raquel ( <i>University of Zaragoza</i> ); Scilingo, Enzo Pasquale ( <i>University of Pisa</i> )
17:15-19:00	WePoS-05.11	<b>Nonlinear System Identification based on Convolutional Neural Networks for Multiple Drug Interactions</b> Kashihara, Koji* ( <i>Tokushima University</i> )	17:15-19:00	WePoS-06.5	<b>Stress Effects on Exam Performance using EEG</b> Hafeez, Muhammad Adeel* ( <i>Institute of Space Technology, Islamabad, Pakistan</i> ); Shakil, Sadia ( <i>Institute of Space Technology</i> ); Jangsher, Sobia ( <i>Institute of Space Technology, Islamabad, Pakistan</i> )
17:15-19:00	WePoS-05.12	<b>Biosignal Data Augmentation based on Generative Adversarial Networks</b> Harada, Shota* ( <i>Kyushu University</i> ); Hayashi, Hideaki ( <i>Kyushu University</i> ); Uchida, Seiichi ( <i>Kyushu University</i> )	17:15-19:00	WePoS-06.6	<b>A Stimulus-Response Processing Framework for Pupil Dynamics Assessment during Iso-Luminant Stimuli</b> Brambilla, Riccardo ( <i>Politecnico di Milano</i> ); Onorati, Francesco ( <i>Politecnico di Milano</i> ); Russo, Vincenzo ( <i>IULM Univ. of Milan</i> ); Mauri, Maurizio ( <i>IULM Univ. of Milan</i> ); Magrassi, Lorenzo ( <i>Fondazione IRCCS PoliClinico S. Matteo</i> ); Mainardi, Luca ( <i>Politecnico di Milano</i> ); Barbieri, Riccardo* ( <i>Politecnico di Milano</i> )

**WePoS-07: 17:15-19:00 Exhibit Hall 2**  
**Signal Processing and Classification of Acoustic and Auditory Signals – Poster Session (Theme 1) (Poster Session)**

**17:15-19:00 WePoS-07.1**  
**Improving the Performance of Hearing Aids in Noisy Environments based on Deep Learning Technology**

Lai, Ying-Hui\* (*National Yang-Ming University*); Wei, Zhong, Zheng (*Yuan Ze University*); Tang, Shih-Tsang (*Ming Chuan University*); Fang, Shih-Hau (*Yuan-Ze University*); Liao, Wen-Huei (*National Yang-Ming University, Dept. of Otolaryngology, Taipei Veterans General Hospital*); Tsao, Yu (*Academia Sinica*)

**17:15-19:00 WePoS-07.2**  
**Fundamental Heart Sound Classification using the Continuous Wavelet Transform and Convolutional Neural Networks**

Meintjes, Andries\* (*Auckland University of Technology*); Lowe, Andrew (*Auckland University of Technology*); Leggett, Malcolm E. (*University of Auckland*)

**17:15-19:00 WePoS-07.3**  
**Low Level Texture Features for Snore Sound Discrimination**

Demir, Fatih (*Firat University*); Sengur, Abdulkadir (*Firat University*); Cummins, Nicholas\* (*University of Augsburg*); Amiriparian, Shahin (*University of Augsburg*); Schuller, Bjoern (*Imperial College London*)

**17:15-19:00 WePoS-07.4**  
**Influence of MVDR Beamformer on a Speech Enhancement based Smartphone Application for Hearing Aids**

Shankar, Nikhil\* (*Univ. of Texas at Dallas*); Kucuk, Abdullah (*Univ. of Texas at Dallas*); Karadagur Ananda Reddy, Chandan (*Univ. of Texas at Dallas*); Shreedhar Bhat, Gautam (*Univ. of Texas at Dallas*); Panahi, Issa (*Univ. of Texas at Dallas*)

**17:15-19:00 WePoS-07.5**  
**Tracheal Sounds Features Changes in Different Sleep Stages based on Complex Wavelet Analysis**

Soltanzadeh, Ramin\* (*University of Manitoba*); Shafai, Cyrus (*University of Manitoba*); Winkler, Jeff (*University of Manitoba*)

**17:15-19:00 WePoS-07.6**  
**Quantitative Assessment of Syllabic Timing Deficits in Ataxic Dysarthria**

Kashyap, Bipasha\* (*Deakin Univ.*); Pathirana, Pubudu N. (*Deakin Univ.*); Horne, Malcolm (*Florey Institute of Neuroscience and Mental Health*); Power, Laura (*Royal Victorian Eye and Ear Hospital*); Szmulewicz, David (*Victorian Eye and Ear Hospital*)

**17:15-19:00 WePoS-07.7**  
**Design of Compensated Multi-Channel Dynamic-Range Compressor for Hearing Aid Devices using Polyphase Implementation**

Zou, Ziyang\* (*University of Texas at Dallas*); Hao, Yiya (*University of Texas at Dallas*); Panahi, Issa (*University of Texas at Dallas*)

**WePoS-08: 17:15-19:00 Exhibit Hall 2**  
**Signal Processing and Classification for Wearable Systems and Smartphones – Poster Session (Theme 1) (Poster Session)**

**17:15-19:00 WePoS-08.1**  
**Real-Time Smartphone Application for Improving Spatial Awareness of Hearing Assistive Devices**

Ganguly, Anshuman\* (*University of Texas at Dallas*); Kucuk, Abdullah (*University of Texas at Dallas*); Panahi, Issa (*University of Texas at Dallas*)

**17:15-19:00 WePoS-08.2**  
**Prediction of Physiological Response Over Varying Forecast Lengths with a Wearable Health Monitoring Platform**

Mohammadzadeh, Farrokh\* (*North Carolina State University*); Nam, Chang S. (*North Carolina State University*); Lobaton, Edgar (*North Carolina State University*)

**17:15-19:00 WePoS-08.3**  
**A New Physiological Signal Acquisition Patch Designed with Advanced Respiration Monitoring Algorithm based on 3-Axis Accelerator and Gyroscope**

Wang, Sikai (*Institute of Semiconductors, Chinese Academy of Sciences; University of Chinese Academy of Sciences*); Liu, Ming\* (*Institute of Semiconductors, Chinese Academy of Sciences*); Pang, Bo (*Institute of Semiconductors, Chinese Academy of Sciences*); Li, Peng (*Institute of Semiconductors, Chinese Academy of Sciences*); Yao, Zhaolin (*Institute of Semiconductors, Chinese Academy of Sciences*); Zhang, Xu (*Tsinghu University*); Chen, hongda (*Institute of Semiconductors, CAS*)

**17:15-19:00 WePoS-08.4**  
**Smartphone based Human Breath Analysis from Respiratory Sounds**

Azam, Muhammad Awais (*Univ. of Engineering and Technology, Taxila*); Shahzadi, Aeman (*Univ. of Engineering & Technology Taxila*); Khalid, Asra (*COMSATS Institute of Information Technology, Wah Cantt*); Anwar, Syed\* (*Univ. of Engineering and Technology*); Naeem, Usman (*East London Univ., London*)

**WePoS-09: 17:15-19:00 Exhibit Hall 2**  
**Signal Processing and Classification in Sleep Studies – Poster Session (Theme 1) (Poster Session)**

**17:15-19:00 WePoS-09.1**  
**Systematic Comparison of Respiratory Signals for the Automated Detection of Sleep Apnea**

Van Steenkiste, Tom\* (*Ghent Univ. - imec*); Groenendaal, Willemijn (*imec Netherlands*); Ruysinck, Joeri (*Ghent Univ. - imec*); Dreesen, Pauline (*Future Health, Ziekenhuis Oost-Limburg*); Klerkx, Susie (*Dept. of Pneumology, Ziekenhuis Oost-Limburg*); Smeets, Christophe (*Ziekenhuis Oost-Limburg*); de Francisco, Ruben (*imec*); Deschrijver, Dirk (*Ghent Univ. - imec*); Dhaene, Tom (*Ghent Univ., Dept. of Information Technology (INTEC)*)

**17:15-19:00 WePoS-09.2**  
**DNN Filter Bank Improves 1-Max Pooling CNN for Single-Channel EEG Automatic Sleep Stage Classification**

Phan, Huy\* (*University of Oxford*); Andreotti, Fernando (*University of Oxford*); Cooray, Navin (*Institute of BioMedical Engineering, University of Oxford*); Chen, Oliver (*University of Oxford*); De Vos, Maarten (*University of Oxford*)

**17:15-19:00 WePoS-09.3**  
**Mobile Apnea Screening System for At-Home Recording and Analysis of Sleep Apnea Severity**

Pinto Bonnesen, Mathias\* (*Technical University of Denmark (DTU)*); Sorensen, Helge B D (*Technical University of Denmark*); Jennum, Poul (*University of Copenhagen, Demnar*)

**17:15-19:00 WePoS-09.4**  
**Sleep Posture Classification using Bed Sensor Data and Neural Networks**

Enayati, Moein\* (*University of Missouri*); Skubic, Marjorie (*University of Missouri*); Keller, James M (*University of Missouri*); Popescu, Mihail (*University of Missouri*); Zanjirani Farahani, Nasibeh (*University of Missouri*)

**17:15-19:00 WePoS-09.5**  
**A Two Stage Approach for the Automatic Detection of Insomnia**

Shahin, Mostafa\* (*Texas A&M University at Qatar*); Mulafer, Lamana (*Texas A&M University at Qatar*); Penzel, Thomas (*Charite Universitätsmedizin Berlin*); Ahmed, Beena (*University of New South Wales*)

**17:15-19:00 WePoS-09.6**  
**The Neurophysiological Effect of Acoustic Stimulation with Real-Time Sleep Spindle Detection**

Choi, Jinyoung (*Gwangju Institute of Science and Technology*); Han, Sangjun (*Gwangju Institute of Science and Technology*); Won, Kyungho (*Gwangju Institute of Science and Technology*); Jun, Sung Chan\* (*Gwangju Institute of Science and Technology*)

17:15-19:00 WePoS-10.1  
**Automatic Identification and Classification of Fetal Heart-Rate  
 Decelerations from Cardiotocographic Recordings**

Sbrollini, Agnese (*Univ. Politecnica delle Marche*); Carnicelli, Amalia (*Univ. Politecnica delle Marche*); Massacci, Alessandra (*Univ. Politecnica delle Marche*); Tomaiuolo, Leonardo (*Univ. Politecnica delle Marche*); Zara, Tommaso (*Univ. Politecnica delle Marche*); Marcantoni, Ilaria (*Univ. Politecnica delle Marche*); Burattini, Luca (*Univ. Politecnica delle Marche*); Morettini, Micaela (*Univ. Politecnica delle Marche*); Fioretti, Sandro (*Univ. Politecnica delle Marche*); Burattini, Laura\* (*Univ. Politecnica delle Marche*)

17:15-19:00 WePoS-10.2  
**A Simple and Robust Method for Determining the Quality of  
 Cardiovascular Signals using the Signal Similarity**

Jang, Dae-Geun\* (*Samsung Advanced Institute of Tech.*); Kwon, Uikun (*Samsung Electronics*); Yoon, Seung Keun (*Samsung Advanced Institute of Tech.*); Park, Chang Soon (*Samsung Advanced Institute of Tech.*); Ku, Yunseo (*Chungnam Natl. Univ. College of Medicine*); Noh, Seungwoo (*Interdisciplinary Program, Bioengineering, Graduate School, Seoul Natl. Univ., Seoul, Korea*); Kim, Youn Ho (*Samsung Advanced Institute of Tech.*)

17:15-19:00 WePoS-10.3  
**Pattern Analysis in Physiological Pulsatile Signals: An Aid to  
 Personalized Healthcare**

Bandyopadhyay, Soma\* (*Tata Consultancy Services*); Ukil, Arijit (*Tata Consultancy Services*); Puri, Chetanya (*Research and Innovation, Tata Consultancy Services, India*); Singh, Rituraj (*Tata Consultancy Services*); Pal, Arpan (*Tata Consultancy Services*); Murthy, C. A. (*Indian Statistical Institute*)

17:15-19:00 WePoS-10.4  
**Classification of Cardiovascular Disease via a New SoftMax Model**

Hao, L (*Guangxi Normal University National*); Ling, Sai Ho, Steve\* (*University of Technology Sydney*); Jiang, Frank (*University of Technology Sydney*)

17:15-19:00 WePoS-10.5  
**Spatio-Temporal Analysis of Multichannel Atrial Electrograms  
 based on a Concept of Active Areas**

Doessel, Olaf\* (*Karlsruhe Institute of Technology (KIT)*); Oesterlein, Tobias (*Institute of BioMedical Engineering, Karlsruhe Institute of Technology*); Unger, Laura Anna (*Institute of BioMedical Engineering, Karlsruhe Institute of Technology*); Loewe, Axel (*Karlsruhe Institute of Technology (KIT)*); Schmitt, Claus (*Staedtisches Klinikum Karlsruhe*); Luik, Armin (*Staedtisches Klinikum Karlsruhe*)

17:15-19:00 WePoS-10.6  
**Robust Heart Rate Estimation during Physical Exercise using  
 Photoplethysmographic Signals**

Motin, Mohammad Abdul (*Univ. of Melbourne*); Karmakar, Chandan\* (*Deakin Univ.*); Palaniswami, Marimuthu (*Univ. of Melbourne*)

17:15-19:00 WePoS-10.7  
**Real-Time Evaluation of ECG Acquisition Systems through  
 Signal Quality Assessment in Horses during Submaximal  
 Treadmill Test**

Nardelli, Mimma (*Univ. of Pisa*); Lanata', Antonio (*Univ. of Pisa*); Valenza, Gaetano (*Univ. of Pisa*); Sgorbini, Micaela (*Dept. of Vet. Sciences, Univ. of Pisa*); Baragli, Paolo (*Dept. of Vet. Sciences, Univ. of Pisa*); Scilingo, Enzo Pasquale\* (*Univ. of Pisa*)

17:15-19:00 WePoS-10.8  
**Performance Evaluation of Processing Methods for  
 Ballistocardiogram Peak Detection**

Suliman, Ahmad\* (*Kansas State University*); Carlson, Charles (*Kansas State University*); Warren, Steve (*Kansas State University*); Thompson, David (*Kansas State University*)

17:15-19:00 WePoS-11.1  
**Closed-Loop Administration of Analgesic Drugs based on  
 Heart Rate Variability Analysis**

De Jonckheere, Julien\* (*CHRU de Lille*); Jeanne, Mathieu (*CHRU de Lille*); Logier, Regis (*CHRU de Lille*)

17:15-19:00 WePoS-11.2  
**Insights on Spectral Measures for HRV based on a Novel  
 Approach for Data Acquisition**

Anderson, Rachele\* (*Lund University*); Jönsson, Peter (*Kristianstad University*); Sandsten, Maria (*Lund University*)

17:15-19:00 WePoS-11.3  
**CHF Detection with LSTM Neural Network**

Wang, Ludi (*Beijing University of Posts and Telecommunications*); Zhou, Wei (*Uppsala University*); Liu, Na (*Beijing University of Posts and Telecommunications*); Xing, Ying (*Beijing University of Posts and Telecommunications*); Zhou, Xiaoguang\* (*Beijing University of Posts and Telecommunications*)

17:15-19:00 WePoS-11.4  
**Model-Based Classification of Heart Rate Variability**

Leite, Argentina Maria\* (*Universidade de Trás os Montes e Alto Douro*); Silva, Maria Eduarda (*Universidade do Porto*); Rocha, Ana Paula (*Universidade do Porto, Faculdade de Ciências*)

17:15-19:00 WePoS-11.5  
**A Case for the Interspecies Transfer of Emotions: A Preliminary  
 Investigation on How Humans Odors Modify Reactions of the  
 Autonomic Nervous System in Horses**

Lanata', Antonio (*Univ. of Pisa*); Nardelli, Mimma (*Univ. of Pisa*); Valenza, Gaetano (*Univ. of Pisa*); Baragli, Paolo (*Dept. of Veterinary Sciences, Univ. of Pisa*); D' Aniello, Biagio (*Dept. of Biology, Univ. of Naples Federico II*); Alterisio, Alessandra (*Dept. of Biology, Univ. of Naples Federico II*); Scandurra, Anna (*Dept. of Biology, Univ. of Naples Federico II*); Semin, Gun Refik (*William James Center for Research, ISPA - Instituto Universitario, Lisbon, Portugal*); Scilingo, Enzo Pasquale\* (*Univ. of Pisa*)

17:15-19:00 WePoS-11.6  
**Comparative Study on Heart Rate Variability Analysis for Atrial  
 Fibrillation Detection in Short Single-Lead ECG Recordings**

Nguyen, An (*University of Michigan*); Ansari, Sardar\* (*University of Michigan*); Hooshmand, Mohsen (*University of Michigan*); Lin, Kaiwen (*University of Michigan*); Ghanbari, Hamid (*University of Michigan*); Gryak, Jonathan (*University of Michigan*); Najarian, Kayvan (*University of Michigan - Ann Arbor*)

17:15-19:00 WePoS-12.1  
**Emotion Recognition from EEG and Facial Expressions:  
 A Multimodal Approach**

Chaparro, Valentina (*Universidad EAFIT*); Gomez Montoya, Alejandro (*Universidad EAFIT*); Salgado, Alejandro (*Universidad EAFIT*); López, Natalia M (*Universidad Nacional de San Juan*); Villa Montoya, Luisa Fernanda (*Universidad de Medellín*); Quintero Montoya, Olga Lucia\* (*Universidad EAFIT*)

17:15-19:00 WePoS-12.2  
**Eigendecomposition-Based Interference Suppression for Ultra-  
 Wideband Impulse Radio Life Detection**

Li, Xin (*Shenzhen Institutes of Advanced Technology Chinese Academy of Sciences, Key Lab for Health Informatics of Chinese Academy of Sciences*); Liu, Jikui (*Shenzhen Institutes of Advanced Technology Chinese Academy of Sciences, Key Lab for Health Informatics of Chinese Academy of Sciences*); Li, Ye\* (*Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences*)

17:15-19:00 WePoS-12.3  
**Quantitative Characteristics of Hypsarrhythmia in Infantile Spasms**  
 Smith, Rachel J. (*University of California, Irvine*); Shrey, Daniel W. (*Children's Hospital of Orange County*); Hussain, Shaun A. (*University of California Los Angeles*); Lopour, Beth\* (*University of California, Irvine*)

17:15-19:00 WePoS-12.4  
**Dengue Fever Detecting System using Peak-Detection of Data from Contactless Doppler Radar**  
 Yang, Xiaofeng\* (*The University of Electro-Communications*); Ishibashi, Koichiro (*The University of Electro-Communications*); Hoi, Le (*National Hospital for Tropical Diseases*); Vu, Trung Nguyen (*National Hospital for Tropical Diseases*); Van, Kinh Nguyen (*National Hospital for Tropical Diseases*); Sun, Guanghao (*The University of Electro-Communications*)

WePoS-13: 17:15-19:00 Exhibit Hall 2  
**Brain Imaging (II) – Poster (Theme 2)** (Poster Session)

17:15-19:00 WePoS-13.1  
**Brain-to-Brain Synchronization of the Expectation of Cooperation Behavior: A fNIRS Hyperscanning Study**  
 Zhang, Mingming\* (*Southeast University*); Ding, Keya (*Southeast University*); Jia, Huibin (*Southeast University*); Yu, Dongchuan (*Southeast University*)

17:15-19:00 WePoS-13.2  
**Brain Tumor Segmentation on Multimodal MRI Scans using EMAP Algorithm**  
 Anwar, Syed\* (*University of Engineering and Technology*); Yousaf, Sobia (*UET Taxila*); Majid, Muhammad (*University of Engineering and Technology, Taxila*)

17:15-19:00 WePoS-13.3  
**Heritability of Nested Hierarchical Structural Brain Network**  
 Chung, Moo K.\* (*University of Wisconsin-Madison*); Luo, Zhan (*University of Wisconsin - Madison*); Adluru, Nagesh (*University of Wisconsin-Madison*); Alexander, Andrew (*University of Wisconsin*); Davidson, Richard J. (*University of Wisconsin-Madison*); Goldsmith, H. Hill (*University of Wisconsin-Madison*)

17:15-19:00 WePoS-13.4  
**Abnormal Dynamic Functional Network Connectivity and Graph Theoretical Analysis in Major Depressive Disorder**  
 Zhi, Dongmei (*Institute of Automation, Chinese Academy of Sciences, Beijing*); Ma, Xiaohong (*Psychiatric Lab and Mental Health Center, State Key Lab of Biotherapy, West China Hospital of Sichuan Univ.*); Lv, Luxian (*Dept. of Psychiatry, Henan Mental Hospital, The Second Affiliated Hospital of Xinxiang Medical Univ.*); Ke, Qing (*Dept. of Neurology, The First Affiliated Hospital, Zhejiang Univ. School of Medicine*); Yang, Yongfeng (*Dept. of Psychiatry, Henan Mental Hospital, The Second Affiliated Hospital of Xinxiang Medical Univ.*); Yang, Xiao (*Psychiatric Lab and Mental Health Center, State Key Lab of Biotherapy, West China Hospital of Sichuan Univ.*); Pan, Miao (*Dept. of Psychiatry, Henan Mental Hospital, The Second Affiliated Hospital of Xinxiang Medical Univ., Xinxiang*); Qi, Shile (*Brainnetome center & National Lab of Pattern Recognition, Institute of Automation, Chinese Academy of Sciences*); Jiang, Rongtao (*Institute of Automation, Chinese Academy of Sciences*); Du, Yuhui (*The Mind Research Network*); Yu, Qingbao (*The Mind Research Network*); Calhoun, Vince (*The Mind Research Network/Univ. of New Mexico*); Jiang, Tianzi (*Institute of Automation*); Sui, Jing\* (*Institute of Automation, Chinese Academy of Sciences*)

17:15-19:00 WePoS-13.5  
**Tracing Tubular Structures from Teravoxel-Sized Microscope Images**  
 Raghavan, Shruthi (*Kettering Univ.*); Kwon, Jaerock\* (*Kettering Univ.*)

17:15-19:00 WePoS-13.6  
**Performance of Registration Tools on High-Resolution 3D Brain Images**  
 Nazib, Abdullah\* (*Queensland University of Technology*); Galloway, James (*Queensland University of Technology*); Fookes, Clinton (*Queensland University of Technology*); Perrin, Dimitri (*Queensland University of Technology*)

17:15-19:00 WePoS-13.7  
**Towards an Open-Source Framework for the Analysis of Cerebrovasculature Structure**  
 Nowak, Michael\* (*Texas A&M University*); Choe, Yoonsuck (*Texas A&M University*)

17:15-19:00 WePoS-13.8  
**Transcranial Sonography based Diagnosis of Parkinson's Disease via Cascaded Kernel RVFL+**  
 Xue, Zeyu (*Shanghai Univ.*); Shi, Jun (*Shanghai Univ.*); Dai, Yakang (*Univ. of Minnesota*); Dong, Yun (*Shanghai East Hospital of Tongji Univ.*); Zhang, Qi\* (*Shanghai Univ.*); Zhang, Yingchun (*The Second Affiliated Hospital of Soochow Univ.*)

17:15-19:00 WePoS-13.9  
**Cold Water Pressor Test Differentially Modulates Functional Network Connectivity in Fibromyalgia Patients Compared with Healthy Controls**  
 Jarrahi, Behnaz\* (*Stanford University School of Medicine*); Martucci, Katherine (*Stanford School of Medicine*); Nilakantan, Aneesha (*Stanford School of Medicine*); Mackey, Sean (*Stanford University School of Medicine*)

17:15-19:00 WePoS-13.10  
**Detecting Intracranial Hemorrhage with Deep Learning**  
 Majumdar, Arjun (*MIT Lincoln Lab*); Brattain, Laura (*MIT Lincoln Lab*); Telfer, Brian\* (*MIT Lincoln Lab*); Farris, Chad (*Boston Medical Center*); Scalera, Jonathan (*Boston Medical Center*)

17:15-19:00 WePoS-13.11  
**Structural Connectome of the Human Vestibular, Pre-Motor, and Navigation Network**  
 Indovina, Iole (*Lab of Neuromotor Physiology, IRCCS Santa Lucia Foundation*); Riccelli, Roberta (*Lab of Neuromotor Physiology, IRCCS Santa Lucia Foundation*); Passamonti, Luca (*University of Cambridge*); Maffei, Vincenzo (*IRCCS Santa Lucia Foundation*); Bosco, Gianfranco (*Dept. of Systems Medicine, University of Rome "Tor Vergata", Rome, Italy*); Lacquaniti, Francesco (*Dept. of Neuromotor Physiology Fondazione Santa Lucia IRCCS*); Toschi, Nicola\* (*University of Rome "Tor Vergata", Faculty of Medicine*)

WePoS-14: 17:15-19:00 Exhibit Hall 2  
**Cardiac Imaging (II) – Poster (Theme 2)** (Poster Session)

17:15-19:00 WePoS-14.1  
**Mechanical Activation Computation from Fluoroscopy for Guided Cardiac Resynchronization Therapy**  
 Thomas, Emily (*King's College London*); Toth, Daniel\* (*King's College London*); Kurzendorfer, Tanja (*Friedrich-Alexander University Erlangen-Nuremberg*); Rhode, Kawal (*King's College London*); Mountney, Peter (*Siemens*)

17:15-19:00 WePoS-14.2  
**An Iterative Diffeomorphic Algorithm for Registration of Subdivision Surfaces: Application to Congenital Heart Disease**  
 Mauger, Charlene Alice\* (*University of Auckland*); Gilbert, Kathleen (*University of Auckland*); Suinesiaputra, Avan (*University of Auckland*); Pontre, Beau (*University of Auckland*); Omens, Jeffrey (*UCSD*); McCulloch, Andrew (*University of California, San Diego*); Young, Alistair (*University of Auckland*)



17:15-19:00	WePoS-14.3	<b>Lumen Segmentation in Optical Coherence Tomography Images using Convolutional Neural Network</b> Miyagawa, Makoto ( <i>Federal University of Amazonas</i> ); Costa Filho, Cicero F. F.* ( <i>Universidade Federal do Amazonas</i> ); Gutierrez, Marco ( <i>Heart Institute, University of Sao Paulo Medical School</i> ); Costa, Marly G. F. ( <i>Federal University of Amazonas - UFAM</i> ); Costa, Joao Pedro ( <i>Universidade Federal do Amazonas</i> )	17:15-19:00	WePoS-15.3	<b>Automatic Detection and Segmentation of Mitochondria from SEM Images using Deep Neural Network</b> Liu, Jing ( <i>Institute of Automation, Chinese Academy of Sciences</i> ); Li, Weifu ( <i>Institute of Automation, Chinese Academy of Sciences</i> ); Xiao, Chi ( <i>Institute of Automation, Chinese Academy of Sciences</i> ); Hong, Bei ( <i>Institute of Automation, Chinese Academy of Sciences</i> ); Xie, Qiwei ( <i>Institute of Automation, Chinese Academy of Sciences</i> ); Han, Hua* ( <i>Institute of Automation, Chinese Academy of Sciences</i> )
17:15-19:00	WePoS-14.4	<b>Corner Detection based Automatic Segmentation of Bioresorbable Vascular Scaffold Struts in IVOCT Images</b> Cao, Yihui* ( <i>Xi'an Institute of Optics and Precision Mechanics, Chinese Academy of Sciences</i> ); Yao, Linlin ( <i>State Key Lab of Transient Optics and Photonics, Xi'an Institute of Optics and Precision Mechanics, Chinese Academy of Sciences</i> ); Jin, Qinhua ( <i>Chinese PLA General Hospital</i> ); Jing, Jing ( <i>Dept. of Cardiology, Chinese PLA General Hospital, Beijing, P. R. China</i> ); Chen, Yundai ( <i>Dept. of Cardiology, Chinese PLA General Hospital, Beijing, P. R. China</i> ); Qin, Xianjing ( <i>Fourth Military Medical Univ.</i> ); Li, Jianan ( <i>Xi'an Institute of Optics and Precision Mechanics, Chinese Academy of Sciences</i> ); Zhu, Rui ( <i>Xi'an Institute of Optics and Precision Mechanics, Chinese Academy of Sciences</i> )	17:15-19:00	WePoS-15.4	<b>Cell Classification in ER-Stained Whole Slide Breast Cancer Images using Convolutional Neural Network</b> Jamaluddin, Mohammad Fareed ( <i>Multimedia University</i> ); Ahmad Fauzi, Mohammad Faizal* ( <i>Multimedia University</i> ); Abas, Fazly Salleh ( <i>Multimedia University</i> ); Lee, Jenny T H ( <i>University Malaya Medical Center</i> ); Khor, See Yee ( <i>University Malaya Medical Center</i> ); Teoh, Kean H ( <i>University Malaya Medical Center</i> ); Looi, Lai Meng ( <i>University Malaya Medical Center</i> )
17:15-19:00	WePoS-14.5	<b>Coronary Artery Segmentation by Deep Learning Neural Networks on Computed Tomographic Coronary Angiographic Images</b> Huang, Weimin* ( <i>Institute for Infocomm Research, Agency for Science Technology and Research</i> ); Huang, Lu ( <i>Nanyang Technological University</i> ); Lin, Zhiping ( <i>Nanyang Technological University</i> ); Huang, Su ( <i>Institute for Infocomm Research, A*STAR, Singapore</i> ); Chi, Yanling ( <i>Institute for Infocomm Research</i> ); Zhou, Jiayin ( <i>Institute for Infocomm Research</i> ); Zhang, Jun-Mei ( <i>National Heart Center</i> ); Tan, Ru San ( <i>National Heart Center</i> ); Zhong, Liang ( <i>National Heart Centre Singapore</i> )	17:15-19:00	WePoS-15.5	<b>A Framework for Automatic Recognition of Cell Damage on Microscopic Images using Artificial Neural Networks</b> Souza, Mirayr ( <i>Universidade Federal do Rio Grande do Sul</i> ); Ruschel dos Santos, Raphael* ( <i>Universidade Federal do Rio Grande do Sul</i> ); Amadeu, Susin, Altamiro ( <i>Universidade Federal do Rio Grande do Sul</i> ); Boeira, Jane ( <i>Universidade Estadual do Rio Grande do Sul</i> ); Vieira Guimaraes, Leticia ( <i>UERGS</i> ); Parraga, Adriane ( <i>UERGS</i> )
17:15-19:00	WePoS-14.6	<b>CardioXNet: Automated Detection for Cardiomegaly based on Deep Learning</b> Que, Qiwen ( <i>NUS</i> ); Ze, Tang ( <i>NUS, A*STAR</i> ); Wang, Ruoshi ( <i>NUS</i> ); Wang, Jie ( <i>National University of Singapore, Agency for Science Technology and Research (A*STAR)</i> ); Chua, Matthew ( <i>National University of Singapore</i> ); Teo, Sin Gee ( <i>Institute for Infocomm Research</i> ); Veeravalli, Bharadwaj ( <i>National University of Singapore</i> ); Zeng, Zeng* ( <i>I2R, A*STAR</i> ); Yang, Xulei ( <i>Institute for Infocomm Research, A*STAR</i> )	17:15-19:00	WePoS-15.6	<b>Colorization of H&amp;E Stained Tissue using Deep Learning</b> Samsi, Siddharth* ( <i>Massachusetts Institute of Technology</i> ); Jones, Michael ( <i>MIT Lincoln Lab</i> ); Kepner, Jeremy ( <i>MIT Lincoln Lab</i> ); Reuther, Albert ( <i>MIT Lincoln Lab</i> )
17:15-19:00	WePoS-14.7	<b>Quantitative Descriptions of Extended Volume Cardiac Tissue Architecture from Multiple Large Hearts</b> Trew, Mark L.* ( <i>University of Auckland</i> ); Caldwell, Bryan ( <i>University of Auckland</i> ); Smaill, Bruce ( <i>University of Auckland</i> )	17:15-19:00	WePoS-15.7	<b>Patch-Level Tumor Classification in Digital Histopathology Images with Domain Adapted Deep Learning</b> Xia, Tian ( <i>University of Sydney</i> ); Kumar, Ashnil ( <i>University of Sydney</i> ); Feng, Dagan ( <i>University of Sydney</i> ); Kim, Jinman* ( <i>University of Sydney</i> )
17:15-19:00	WePoS-14.8	<b>Deep Learning Models Differentiate Tumor Grades from H&amp;E Stained Histology Sections</b> Khoshdeli, Mina ( <i>University of Nevada, Reno</i> ); Borowsky, Alexander ( <i>University of California, Davis</i> ); Parvin, Bahram* ( <i>University of Nevada, Reno</i> )	17:15-19:00	WePoS-15.8	<b>Assessment of Disease Severity in a Canine Model of Duchenne Muscular Dystrophy: Classification of Quantitative MRI</b> Eresen, Aydin* ( <i>Texas A&amp;M University</i> ); Alic, Lejla ( <i>Texas A&amp;M University at Qatar</i> ); Kornegay, Joe ( <i>Texas A&amp;M University</i> ); Ji, Jim Xiuquan ( <i>Texas A&amp;M University</i> )
WePoS-15: 17:15-19:00	Exhibit Hall 2	<b>Digital Pathology – Poster (Theme 2)</b> (Poster Session)	WePoS-16: 17:15-19:00	Exhibit Hall 2	<b>Image Analysis: Machine Learning – Poster (Theme 2)</b> (Poster Session)
17:15-19:00	WePoS-15.1	<b>Deep Learning Models Differentiate Tumor Grades from H&amp;E Stained Histology Sections</b> Khoshdeli, Mina ( <i>University of Nevada, Reno</i> ); Borowsky, Alexander ( <i>University of California, Davis</i> ); Parvin, Bahram* ( <i>University of Nevada, Reno</i> )	17:15-19:00	WePoS-16.1	<b>A Comparative Study of Automatic Approaches for Preclinical MRI-Based Brain Segmentation in the Developing Rat</b> Sargolzaei, Saman* ( <i>University of California Los Angeles</i> ); Cai, Yan ( <i>UCLA Neurosurgery</i> ); Wolahan, Stephanie M ( <i>UCLA Neurosurgery</i> ); Sargolzaei, Arman ( <i>Florida Polytechnic University</i> ); Giza, Christopher ( <i>UCLA Brain Injury Research Center, Dept of Neurosurgery and Division of Pediatric Neurology, Mattel Children's Hospital, Los Angeles</i> ); Harris, Neil G ( <i>UCLA</i> ); Gaonkar, Bilwaj ( <i>University of California Los Angeles</i> )
17:15-19:00	WePoS-15.2	<b>Temporal Detection of Changes in the Vascularity and Concentration of Pigment Structures of a Skin Lesion</b> Dhinagar, Nikhil* ( <i>Ohio Univ.</i> ); Celenk, Mehmet ( <i>Ohio Univ.</i> )	17:15-19:00	WePoS-16.2	<b>Fully Convolutional Mandible Segmentation on a Valid Ground-Truth Dataset</b> Egger, Jan* ( <i>Graz University of Technology</i> ); Pfarrkirchner, Birgit ( <i>TU Graz</i> ); Gsaxner, Christina ( <i>TU Graz</i> ); Lindner, Lydia ( <i>TU Graz</i> ); Schmalstieg, Dieter ( <i>Graz University of Technology</i> ); Wallner, Jürgen ( <i>Medical University of Graz</i> )

WePoS-15: 17:15-19:00 Exhibit Hall 2  
**Digital Pathology – Poster (Theme 2)** (Poster Session)

WePoS-16: 17:15-19:00 Exhibit Hall 2  
**Image Analysis: Machine Learning – Poster (Theme 2)** (Poster Session)



- 17:15-19:00 WePoS-16.3  
**Fully Convolutional DenseNets for Segmentation of Microvessels in Two-Photon Microscopy**  
 Damseh, Rafat\* (*Polytechnique Montreal*); Cheriet, Farida (*Ecole Polytechnique of Montreal*); Lesage, F. (*Polytechnique Montreal*)
- 17:15-19:00 WePoS-16.4  
**An Mmr-SVM Approach for Opto-Fluidic Microorganism Classification**  
 Luo, Jiawen (*Nanyang Technological Univ.*); Liu, Ai Qun (*Nanyang Technological Univ.*); Yap, Peng Huat (*Nanyang Technological Univ.*); Liedberg, Bo Gunnar (*Nanyang Technological Univ.*); Ser, Wee\* (*Nanyang Technological Univ.*)
- 17:15-19:00 WePoS-16.5  
**Fusing Results of Several Deep Learning Architectures for Automatic Classification of Normal and Diabetic Macular Edema in Optical Coherence Tomography**  
 Chan, Genevieve C Y (*Universiti Teknologi Petronas*); Kamble, Ravi (*SGGS India*); Müller, Henning (*University of Applied Sciences Western Switzerland (HES-SO)*); Shah, Syed (*COMSATS Institute of Information Technology Abbottabad, Pakistan*); Tang, Tong Boon (*Universiti Teknologi Petronas*); Meriaudeau, Fabrice\* (*Universite de Bourgogne*)
- 17:15-19:00 WePoS-16.6  
**Automated Assessment of Bone Age using Deep Learning and Gaussian Process Regression**  
 Van Steenkiste, Tom\* (*Ghent University - imec*); Ruysinck, Joeri (*Ghent University - imec*); Janssens, Olivier (*Ghent University - imec*); Vandersmissen, Baptist (*Ghent University - imec*); Vandecasteele, Florian (*Ghent University - imec*); Devolder, Pieter (*University Hospital (UZ) Ghent*); Achten, Eric (*University Hospital (UZ) Ghent*); Van Hoecke, Sofie (*Ghent University - imec*); Deschrijver, Dirk (*Ghent University - imec*); Dhaene, Tom (*Ghent University, Dept. of Information Technology (INTEC)*)
- 17:15-19:00 WePoS-16.7  
**A 3D Convolutional Neural Network Framework for Polyp Candidates Detection on the Limited Dataset of CT Colonography**  
 Chen, Yizhi (*Shanghai Jiao Tong University*); Ren, Yacheng (*Shanghai Jiao Tong University*); Fu, Ling (*Shanghai Jiao Tong University*); Xiong, Junfeng (*Shanghai Jiao Tong University*); Larsson, Rasmus (*Shanghai Jiao Tong University*); Xu, Xiaowei (*Shanghai Jiao Tong University*); Sun, Jianqi (*Shanghai Jiao Tong University*); Zhao, Jun\* (*Shanghai Jiao Tong University*)
- 17:15-19:00 WePoS-16.8  
**Analysis of DCE-MRI for Early Prediction of Breast Cancer Therapy Response**  
 Machireddy, Archana\* (*Oregon Health & Science University*); Thibault, Guillaume (*Oregon Health & Science University*); Huang, Wei (*Oregon Health & Science University*); Song, Xubo (*Oregon Health & Science University*)
- 17:15-19:00 WePoS-16.9  
**Using Multi-Level Convolutional Neural Network for Classification of Lung Nodules on CT Images**  
 Lyu, Juan (*Harbin Engineering University*); Ling, Sai Ho, Steve\* (*University of Technology Sydney*)
- 17:15-19:00 WePoS-16.10  
**Osteosarcoma Patients Classification using Plain X-Rays and Metabolomic Data**  
 Shen, Rebecca (*University of Michigan, Ann Arbor*); Li, Zhi (*University of Michigan*); Zhang, Linglin (*University of Michigan, Ann Arbor*); Hua, Yingqi (*Shanghai Jiao Tong University*); Mao, Min (*Shanghai Bone Tumor Institute, Shanghai General Hospital, Shanghai Jiao Tong University School of Medicine, Shanghai, China*); Li, Zhicong (*Shanghai Jiao Tong University*); Cai, Zhengdong (*Shanghai Jiao Tong University*); Qiu, Yunping (*Albert Einstein College of Medicine*); Gryak, Jonathan\* (*University of Michigan*); Najarian, Kayvan (*University of Michigan - Ann Arbor*)
- 17:15-19:00 WePoS-16.11  
**Performance Evaluation of Age Estimation from T1-Weighted Images using Brain Local Features and CNN**  
 Ito, Koichi\* (*Tohoku Univ.*); Fujimoto, Ryuichi (*Tohoku Univ.*); Huang, Tzu-Wei (*National Tsing-Hua Univ.*); Chen, Hwann-Tzong (*National Tsing-Hua Univ.*); Wu, Kai (*South China Univ. of Technology*); Sato, Kazunori (*Tohoku Univ.*); Taki, Yasuyuki (*Tohoku Univ.*); Fukuda, Hiroshi (*Tohoku Pharmaceutical Univ.*); Aoki, Takafumi (*Tohoku Univ.*)
- 17:15-19:00 WePoS-16.12  
**Mahalanobis Outlier Removal for Improving the Non-Viable Detection on Human Injuries**  
 Heredia Juesas, Juan (*Northeastern Univ.*); Graham, Katherine (*Northeastern Univ.*); Thatcher, Jeffrey (*Spectral MD*); Wensheng, Fan (*Spectral MD*); DiMaio, J. Michael (*UT Southwestern Medical Center of Dallas*); Martinez Lorenzo, J.A.\* (*Northeastern Univ.*)
- 17:15-19:00 WePoS-16.13  
**A New and Improved Method for Automated Screening of Age-Related Macular Degeneration using Ensemble Deep Neural Networks**  
 Govindaiah, Arun\* (*iHealthScreen Inc.*); Bhuiyan, Alauddin (*iHealthScreen Inc.*); Smith, Roland Theodore (*Professor*)
- 17:15-19:00 WePoS-16.14  
**Automated Classification using End-to-End Deep Learning**  
 Sandeep Jaipurkar, Shobhit\* (*National University of Singapore*); Wang, Jie (*National University of Singapore, Agency for Science Technology and Research (A\*STAR)*); Zeng, Zeng (*I2R, A\*STAR*); Teo, Sin Gee (*Institute for Infocomm Research*); Veeravalli, Bharadwaj (*National University of Singapore*); Chua, Matthew (*National University of Singapore*)
- WePoS-17: 17:15-19:00 Exhibit Hall 2  
**Image Classification (Theme 2) (Poster Session)**  
 Chair: An, Jingzhi (*MIT*)
- 17:15-19:00 WePoS-17.1  
**Semi-Supervised Multi-Task Learning for Lung Cancer Diagnosis**  
 Khosravan, Naji\* (*Center for Research in Computer Vision-Univ. of Central Florida*); Bagci, Ulas (*Univ. of Central Florida*)
- 17:15-19:00 WePoS-17.2  
**Human-Level Performance on Automatic Head Biometrics in Fetal Ultrasound using Fully Convolutional Neural Networks**  
 Sinclair, Matthew\* (*Imperial College London*); Baumgartner, Christian Frederik (*ETH Zürich*); Matthew, Jacqueline (*King's College London*); Bai, Wenjia (*Imperial College London*); Cerrolaza, Juan J. (*Imperial College London*); Li, Yuanwei (*Imperial College London*); Smith, Sandra (*King's College London*); Knight, Caroline (*King's College London*); Kainz, Bernhard (*Imperial College London*); Hajnal, Joseph V. (*King's College London*); King, Andrew Peter (*King's College London*); Rueckert, Daniel (*Imperial College London*)
- 17:15-19:00 WePoS-17.3  
**A Novel Stacked Generalization of Models for Improved TB Detection in Chest Radiographs**  
 Rajaraman, Sivaramakrishnan\* (*National Library of Medicine*); Candemir, Sema (*National Library of Medicine*); Xue, Zhiyun (*National Library of Medicine*); Alderson, Philip (*St. Louis University*); Kohli, Marc (*Dept. of Radiology and BioMedical Imaging, University of California San Francisco*); Abuya, Joseph (*Dept. of Radiology and Imaging, School of Medicine, Moi University*); Thoma, George (*National Library of Medicine, NIH*); Antani, Sameer (*National Library of Medicine*)
- 17:15-19:00 WePoS-17.4  
**Ischemic Stroke Clinical Outcome Prediction based on Image Signature Selection from Multimodality Data**  
 Cui, Hui (*University of Sydney*); Wang, Xiu Ying\* (*University of Sydney*); Bian, Yu (*University of Sydney*); Song, Shaoli (*Shanghai Jiao Tong University*); Feng, Dagan (*University of Sydney*)

- 17:15-19:00 WePoS-17.5  
**Merging of Classifiers for Enhancing Viable vs Non-Viable Tissue Discrimination on Human Injuries**  
 Heredia Juesas, Juan (*Northeastern University*); Graham, Katherine (*Northeastern University*); Thatcher, Jeffrey (*Spectral MD*); Wensheng, Fan (*Spectral MD*); DiMaio, J. Michael (*UT Southwestern Medical Center of Dallas*); Martinez Lorenzo, Jose A.\* (*Northeastern University*)
- 17:15-19:00 WePoS-17.6  
**Automated Assessment of Loss of Consciousness using Whisker and Paw Movements during Anesthetic Dosing in Head-Fixed Rodents**  
 An, Jingzhi\* (*MIT*); Flores, Francisco Javier (*Massachusetts General Hospital*); Kodandaramaiah, Suhasa (*University of Minnesota - Twin Cities*); Betta, Isabella Dalla (*Wellesley College*); Nikolaeva, Ksenia (*Massachusetts Institute of Technology*); Boyden, Edward (*MIT*); Forest, Craig R. (*University of Minnesota-Twin Cities*); Brown, Emery N. (*MGH-Harvard Medical School-MIT*)
- WePoS-18: 17:15-19:00 Exhibit Hall 2  
**Magnetic Resonance Imaging – Poster (Theme 2) (Poster Session)**
- 17:15-19:00 WePoS-18.1  
**Robotic Path Planning using A\* Algorithm for Automatic Navigation in Magnetic Resonance Angiography**  
 Chang, Yuchou (*University of Houston – Downtown*); Wang, Xiaoyan\* (*Yuxi Normal University*); An, Zhenzhou (*Yuxi Normal University*); Wang, Haifeng (*Chinese Academy of Sciences*)
- 17:15-19:00 WePoS-18.2  
**Decision Supporting Model for One-Year Conversion Probability from MCI to AD using CNN and SVM**  
 Shen, Ting (*Shanghai Univ.*); Jiang, Jiehui\* (*Shanghai Univ.*); Li, Yupeng (*Shanghai Univ.*); Ping, Wu (*PET Center, Huashan Hospital, Fudan Univ.*); Zuo, Chuantao (*PET Center, Huashan Hospital*); Yan, Zhuangzhi (*Shanghai Univ.*)
- 17:15-19:00 WePoS-18.3  
**Symmetry Determined Superpixels for Efficient Lesion Segmentation of Ischemic Stroke from MRI**  
 Vupputuri, Anusha\* (*Indian Institute of Technology Kharagpur*); Dighade, Susheelkumar (*Indian Institute of Technology, Kharagpur*); Peddakota, Sandhya Prasanth (*Indian Institute of Technology, Kharagpur*); Ghosh, Nirmalya (*Indian Institute of Technology (IIT), Kharagpur*)
- 17:15-19:00 WePoS-18.4  
**A Stringent Fiber Distance Measure for dMRI Tractography Clustering and Segmentation**  
 Pinto, Daniela (*University of Concepcion*); Román, Claudio (*Universidad de Concepcion*); Guevara, Miguel (*University of Concepcion*); Poupon, Cyril (*CEA I2BM NeuroSpin*); Mangin, Jean-François (*CEA I2BM NeuroSpin*); Guevara, Pamela\* (*University of Concepción*)
- 17:15-19:00 WePoS-18.5  
**Breast Region Segmentation using Convolutional Neural Network in Dynamic Contrast Enhanced MRI**  
 Xu, Xiaowei (*Shanghai Jiao Tong University*); Fu, Ling (*Shanghai Jiao Tong University*); Chen, Yizhi (*Shanghai Jiao Tong University*); Larsson, Rasmus (*Shanghai Jiao Tong University*); Suo, Shiteng (*Renji Hospital, School of Medicine, Shanghai Jiao Tong University*); Hua, Jia (*Renji Hospital, School of Medicine, Shanghai Jiao Tong University*); Zhang, Dandan (*Dept. of Radiology, Renji Hospital, Shanghai Jiao Tong University School of Medicine*); Zhao, Jun\* (*Shanghai Jiao Tong University*)
- 17:15-19:00 WePoS-18.6  
**A Novel Multimodal MRI Analysis for Alzheimer's Disease based on Convolutional Neural Network**  
 Wang, Yan (*Harbin Institute of Technology Shenzhen Graduate School*); Yang, Yanwu (*Harbin Institute of Technology Shenzhen Graduate School*); Guo, Xin (*Harbin Institute of Technology Shenzhen Graduate School*); Ye, Chenfei (*Harbin Institute of Technology Shenzhen Graduate School*); Gao, Na (*Harbin Institute of Technology*); Fang, Yuan (*Harbin Institute of Technology (Shenzhen)*); Ma, Heather Ting\* (*Harbin Institute of Technology Shenzhen Graduate School*)
- 17:15-19:00 WePoS-18.7  
**A Coupled Modified Reaction Diffusion and Biomechanical Models for Cerebral Tumor Growth Modeling in Presence of Treatment**  
 Elazab, Ahmed (*Shenzhen University*); Le, Minh Hung (*School of BioMedical Engineering, Health Science Center, Shenzhen University*); Wang, Tianfu (*Shenzhen University*); Lei, Baiying\* (*Shenzhen University*); Hu, Qingmao (*Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences*); Bai, Hongmin (*Dept. of Neurosurgery, Guangzhou General Hospital of Guangzhou Military Command, Guangzhou, China*); Yang, Mengya (*Shenzhen University*)
- 17:15-19:00 WePoS-18.8  
**Effects of Non-Linear Correlation Measures on Brain Functional Connectivity in Parkinson's Disease**  
 Akbari, Shirin (*Shahid Beheshti University of Medical Sciences*); Fatemizadeh, Emad\* (*Sharif University of Technology*)
- WePoS-19: 17:15-19:00 Exhibit Hall 2  
**New Imaging Methods and Applications (II) – Poster (Theme 2) (Poster Session)**
- 17:15-19:00 WePoS-19.1  
**Spread Spectrum Steganographic Capacity Improvement for Medical Image Security in Teleradiology**  
 Eze, Peter\* (*University of Melbourne*); Udaya, Paramalli (*University of Melbourne*); Evans, Robin John (*University of Melbourne*); Liu, Dongxi (*CSIRO Data61*)
- 17:15-19:00 WePoS-19.2  
**Exudates Segmentation using Fully Convolutional Neural Network and Auxiliary Codebook**  
 Chudzik, Piotr\* (*University of Lincoln*); Al-Diri, Bashir (*The University of Lincoln*); Caliva', Francesco (*University of Lincoln*); Ometto, Giovanni (*Aarhus University Hospital*); Hunter, Andrew (*University of Lincoln*)
- 17:15-19:00 WePoS-19.3  
**Automatic Vessel Detection Technique in Laparoscopic Surgical Imaging Including Surgical Instruments**  
 Jo, Kyungmin (*Asan Institute for Life Sciences, Asan Medical Center*); Choi, Jaesoon\* (*Asan Institute for Life Sciences, Asan Medical Center*)
- 17:15-19:00 WePoS-19.4  
**Pose-Invariant Face Detection by Replacing Deep Neurons with Capsules for Thermal Imagery in Telemedicine**  
 Kwasniewska, Alicja\* (*Gdansk Univ. of Technology*); Ruminski, Jacek (*Gdansk Univ. of Technology*); Szankin, Maciej (*Intel Corp.*); Czuszyński, Krzysztof (*Gdansk Univ. of Technology*)
- 17:15-19:00 WePoS-19.5  
**Use of Apparent Diffusion Coefficient Images to Predict Response to Induction Chemotherapy in Head and Neck Cancer**  
 Bologna, Marco\* (*Politecnico di Milano*); Montin, Eros (*Politecnico di Milano*); Corino, Valentina (*Politecnico di Milano*); Bossi, Paolo (*Istituto Nazionale dei Tumori*); Calareso, Giuseppina (*Istituto Nazionale dei Tumori*); Licitra, Lisa (*Fondazione IRCCS Istituto Nazionale dei Tumori*); Mainardi, Luca (*Politecnico di Milano*)

17:15-19:00 WePoS-19.6  
**Development of Software for Obtaining Image Attributes for Evaluation of the Wound Cicatricial Process**  
 Costa, Alexandre (*Universidade Tecnológica Federal do Paraná*); Mehl, Adriano (*Federal University of Technology of Parana*); Schneider, Jr., Bertoldo (*Federal University of Technology of Parana - Brazil*); Abatti, Paulo J. (*Federal University of Technology of Parana*); Stadnik, Adriana Maria Wan (*UTFPR - Federal Technological University of Paraná*); De Faria, Rubens Alexandre\* (*Federal University of Technology of Parana*)

17:15-19:00 WePoS-19.7  
**Mathematical Model for Body Fat Percentage in Military using Thermal Imaging and Circumferences**  
 Neves, Eduardo Borba (*Federal Technological Univ. of Paraná (UTFPR)*); Salamunes, Ana Carla Chierighini (*Universidade Tecnológica Federal do Paraná*); Stadnik, Adriana Maria Wan\* (*UTFPR - Federal Technological Univ. of Paraná*)

17:15-19:00 WePoS-19.8  
**Co-Sparse Analysis Model based Image Registration to Compensate Brain Shift by using Intra-Operative Ultrasound Imaging**  
 Farnia, Parastoo (*Tehran University of Medical Sciences*); Najafzadeh, Ebrahim (*Tehran University of Medical Sciences*); Ahmadian, Alireza (*Tehran University of Medical Sciences*); Makki Abadi, Bahador (*Tehran University of Medical Sciences*); Maysam, Alimohamadi (*Tehran University of Medical Sciences*); Alirezaie, Javad\* (*Ryerson University, University of Waterloo*)

17:15-19:00 WePoS-19.9  
**Reversible Image Watermarking for Health Informatics Systems using Distortion Compensation in Wavelet Domain**  
 Zarabi, Hamidreza (*Isfahan Univ. of Technology*); Hajabdollahi, Mohsen (*Isfahan Univ. of Technology*); Soroushmehr, S.M.Reza\* (*Univ. of Michigan, Ann Arbor*); Karimi, Nader (*Isfahan Univ. of Technology*); Samavi, Shadrokh (*McMaster Univ.*); Najarian, Kayvan (*Univ. of Michigan - Ann Arbor*)

17:15-19:00 WePoS-19.10  
**MRI based Brain-Specific 3D-Printed Model Aligned to Stereotactic Space for Registering Histology to MRI**  
 Boopathy Jegathambal, Sethu Kovendhan (*McGill University*); Mok, Kelvin (*McGill University*); Rudko, David A. (*McGill University, Dept. of BioMedical Engineering, Dept. of Neurology and Neurosurgery*); Shmuel, Amir\* (*McGill University*)

WePoS-20: 17:15-19:00 Exhibit Hall 2  
**Optical Imaging and Microscopy – Poster (Theme 2) (Poster Session)**

17:15-19:00 WePoS-20.1  
**Background Modeling Method to Identify Interactions between Circulating Tumor Cells and Dendritic Cells**  
 Zeng, Xuejiao (*Shanghai Jiao Tong University*); Wei, Dan (*School of BioMedical Engineering, Shanghai Jiao Tong University*); Wei, Xunbin\* (*Shanghai Jiao Tong University*)

17:15-19:00 WePoS-20.2  
**Segmentation of Overlapped Steatosis in Whole-Slide Liver Histopathology Microscopy Images**  
 Roy, Mousumi\* (*Stony Brook University*); Wang, Fusheng (*Stony Brook University*); Teodoro, George (*University of Brasilia*); Miriam, Vos (*Emory University*); Farris, Alton (*Emory University*); Kong, Jun (*Emory University*)

17:15-19:00 WePoS-20.3  
**Multiple Neutrophils Tracking in Vitro Array using High-Order Temporal Information**  
 Yang, Fan\* (*Temple University*); Soroush, Fariborz (*Temple University*); Yu, Sijia (*Temple University*); Deng, Ge (*Temple University*); Kiani, Mohammad (*Temple University*); Ling, Haibin (*Temple University*); Chu, Peng (*Temple University*)

17:15-19:00 WePoS-20.4  
**Tracking Gene Expression via Light Sheet Microscopy and Computer Vision in Living Organisms**  
 Buckner, Eli\* (*North Carolina State University*); Melvin, Charles (*North Carolina State University*); Ottley, Chanae (*North Carolina State University*); Balaguer, Angels de Luis (*North Carolina State University*); Sozzani, Rosangela (*North Carolina State University*); Williams, Cranos (*North Carolina State University*)

17:15-19:00 WePoS-20.5  
**Confocal Imaging of Cytosolic Ca<sup>2+</sup> and Fuzzy Clustering Reveal the Circuit Topology Details Underlying Synchronization in Hippocampal Neurons**  
 Swain, Sarpras (*Indian Institute of Technology, Hyderabad*); Pantula, Priyanka (*Indian Institute of Technology, Hyderabad*); Mitra, Kishalay (*Indian Institute of Technology Hyderabad*); Giri, Lopamudra\* (*Indian Institute of Technology, Hyderabad*)

17:15-19:00 WePoS-20.6  
**Enhanced Image Sensor Module for Head-Mounted Microscopes**  
 Juneau, Jill\* (*Rice Univ.*); Duret, Guillaume (*Rice Univ.*); Robinson, Jacob T. (*Rice Univ.*); Kemere, Caleb (*Rice Univ.*)

WePoS-21: 17:15-19:00 Exhibit Hall 2  
**Optical Imaging (II) – Poster (Theme 2) (Poster Session)**

17:15-19:00 WePoS-21.1  
**Detecting Ulcerative Colitis using Optical Coherence Elastography**  
 Larin, Kirill\* (*Univ. of Houston*); Mohan, Chandra (*UH*); Liu, Chih-Hao (*Univ. of Houston*); Du, Yong (*Univ. of Houston*); Soomro, Sanam (*Univ. of Houston*); Ho, ThienKim (*Univ. of California, Berkeley*); Nair, Achuth (*Univ. of Houston*)

17:15-19:00 WePoS-21.2  
**Vulnerable Plaque Recognition based on Attention Model with Deep Convolutional Neural Network**  
 Shi, Peiwen\* (*Xi'an Jiao Tong University*); Xin, Jingmin (*Xi'an Jiao Tong University*); Liu, Sijie (*Xi'an Jiao Tong University*); Deng, Yang-Yang (*Xi'an Jiao Tong University*); Zheng, Nanning (*Xi'an Jiao Tong University*)

17:15-19:00 WePoS-21.3  
**Comparing Immunofluorescent versus H&E Glandular Architecture Features in Prognostic Models from Prostate Biopsies**  
 Khan, Faisal\* (*Rutgers, The State University of New Jersey*); Scott, Richard (*Icahn School of Medicine at Mount Sinai*); Donovan, Michael (*Icahn School of Medicine at Mount Sinai*); Fernandez, Gerardo (*Icahn School of Medicine at Mount Sinai*)

17:15-19:00 WePoS-21.4  
**Cell Counting and Segmentation of Immunohistochemical Images in the Spinal Cord: Comparing Deep Learning and Traditional Approaches**  
 Pham, Bau\* (*UCLA*); Gaonkar, Bilwaj (*University of California Los Angeles*); Whitehead, William (*University of California Los Angeles*); Moran, Steven (*University of California Los Angeles*); Dai, Qing (*UCLA*); Macyszyn, Luke (*University of California Los Angeles*); Edgerton, V Reggie (*University of California Los Angeles*)

17:15-19:00 WePoS-21.5  
**Non-Contact Remote Measurement of Heart Rate Variability using Near-Infrared Photoplethysmography Imaging**  
 Yu, Xinchu\* (*RWTH Aachen University*); Paul, Michael (*RWTH Aachen University*); Hoog Antink, Christoph (*RWTH Aachen University, Aachen, Germany*); Venema, Boudewijn (*Philips Chair for Medical Information Technology, RWTH Aachen University*); Blazek, Vladimir (*Philips Chair for Medical Information Technology, RWTH Aachen University*); Bollheimer, Cornelius (*RWTH Aachen University Hospital*); Leonhardt, Steffen (*RWTH Aachen University*); Teichmann, Daniel (*RWTH Aachen University*)

17:15-19:00	WePoS-21.6	<b>Super-Resolution in Optical Coherence Tomography</b> Wang, Qifan ( <i>University of Bristol</i> ); Zheng, Rencheng ( <i>University of Bristol</i> ); Achim, Alin* ( <i>University of Bristol</i> )	17:15-19:00	WePoS-22.4	<b>Fetal Skull Reconstruction via Deep Convolutional Autoencoders</b> Cerroloza, Juan J.* ( <i>Imperial College London</i> ); Li, Yuanwei ( <i>Imperial College London</i> ); Biffi, Carlo ( <i>Imperial College London</i> ); Gomez, Alberto ( <i>King's College London</i> ); Matthew, Jacqueline ( <i>King's College London</i> ); Sinclair, Matthew ( <i>Imperial College London</i> ); Gupta, Chandni ( <i>King's College London</i> ); Knight, Caroline ( <i>King's College London</i> ); Rueckert, Daniel ( <i>Imperial College London</i> )
17:15-19:00	WePoS-21.7	<b>Dynamic Analysis of Mental Sweating of the Sweat Glands and Peripheral Vessels by Optical Coherence Tomography</b> Ohmi, Masato* ( <i>Osaka University</i> ); Wada, Yuki ( <i>Osaka University</i> )	17:15-19:00	WePoS-22.5	<b>Improved Real-Time Capability for Nonlinear Separable Harmonic Filtering of Ultrasound Images using a Damped Regularization Method with In-Vivo Results</b> Cunningham, James ( <i>Penn State University</i> ); Zheng, Yi ( <i>Penn State University</i> ); Subramanian, Thyagarajan ( <i>Penn State University</i> ); Almekkawy, Mohamed* ( <i>Penn State University</i> )
17:15-19:00	WePoS-21.8	<b>Diffuse Speckle Contrast Analysis Assisted Intraoperative Blood Flow Monitoring in the Rat Model of Femoral Arterial Occlusion</b> Yeo, Chaebeom ( <i>DGIST</i> ); Kim, Heejaung ( <i>DGMIF</i> ); Jo, Woori ( <i>DGMIF</i> ); Song, Cheol* ( <i>DGIST</i> )	17:15-19:00	WePoS-22.6	<b>Using Filter Factors for Regularization in Ultrasound Tomography</b> Carevic, Anita ( <i>University of Split</i> ); Abdou, Ali E. ( <i>Penn State University</i> ); Barlow, Jesse ( <i>Penn State University</i> ); Almekkawy, Mohamed* ( <i>Penn State University</i> )
17:15-19:00	WePoS-21.9	<b>Optic Disc and Cup Segmentation with Blood Vessel Removal from Fundus Images for Glaucoma Detection</b> Jiang, Yuming* ( <i>Univ. of Electronic Science and Technology of China</i> ); Xia, Hu ( <i>Univ. of Electronic Science and Technology of China</i> ); Xu, Yanwu ( <i>Guangzhou Shiyuan Ltd. Co</i> ); Cheng, Jun ( <i>Institute of BioMedical Engineering, Chinese Academy of Sciences</i> ); Fu, Huazhu ( <i>Institute for Infocomm Research, A*STAR</i> ); Duan, Lixin ( <i>Univ. of Electronic Science and Technology of China</i> ); Meng, Zhigang ( <i>Changsha Univ.</i> ); Liu, Jiang ( <i>Ningbo Institute of Materials Technology and Engineering, CAS</i> )	17:15-19:00	WePoS-22.7	<b>Comparison of 3D Reconstruction Methods based on Different Cardiovascular Imaging: A Study of Multimodality Reconstruction Method</b> Tsompou, Panagiota ( <i>Unit of Medical Technology and Intelligent Information Systems, Dept. of Materials Science and Engineering, University of Ioannina</i> ); Sakellarios, Antonis ( <i>Unit of Medical Technology and Application Systems, Dept of Material Science, University of Ioannina</i> ); Siogkas, Panagiotis ( <i>FORTH-IMBB</i> ); Andrikos, Ioannis ( <i>University of Ioannina</i> ); Kigka, Vassiliki ( <i>University of Ioannina</i> ); Lemos, Pedro ( <i>Dept. of Interventional Cardiology at the Heart Institute (InCor) University of Sao Paulo Medical School</i> ); Michalis, Lampros ( <i>University of Ioannina</i> ); Fotiadis, Dimitrios I.* ( <i>University of Ioannina</i> )
17:15-19:00	WePoS-21.10	<b>High Resolution Volumetric Imaging of Primary and Secondary Tumor Spheroids using Multi-Angle Light Sheet Fluorescence Microscopy (LSFM)</b> Psycharakis, Stylianos ( <i>FORTH-IESL</i> ); Liapis, Evangelos ( <i>Institute of Electronic Structure and Laser, Foundation for Research and Technology - Hellas</i> ); Zacharopoulos, Athanasios ( <i>FORTH</i> ); Papamatheakis, Joseph ( <i>FORTH-IMBB</i> ); Oraipoulou, Mariam-Eleni ( <i>ICS-FORTH</i> ); Sakkalis, Vangelis* ( <i>ICS-FORTH</i> ); Zacharakis, Giannis ( <i>FORTH</i> )	17:15-19:00	WePoS-22.8	<b>Multiview Three-Dimensional Echocardiography Image Fusion using a Passive Measurement Arm</b> Punithakumar, Kumaradevan* ( <i>Univ. of Alberta</i> ); Whittle, Andrew Brian ( <i>Univ. of Alberta</i> ); Choy, Marina ( <i>Univ. of Alberta Hospital</i> ); Rakkunedeth Hareendranathan, Abhilash ( <i>Univ. of Alberta</i> ); Noga, Michelle ( <i>Univ. of Alberta</i> ); Boulanger, Pierre ( <i>Univ. of Alberta</i> ); Becher, Harald ( <i>Mazankowski Alberta Heart Institute, Univ. of Alberta, Edmonton</i> )
17:15-19:00	WePoS-21.11	<b>Retinal Artery and Vein Classification for Automatic Vessel Caliber Grading</b> Bhuiyan, Alauddin* ( <i>iHealthScreen Inc.</i> ); Wong, Tien Yin ( <i>National University of Singapore</i> ); Klein, Ronald ( <i>University of Wisconsin</i> ); Hussain, Md Akter ( <i>iHealthScreen Inc.</i> )	17:15-19:00	WePoS-22.9	<b>Coherence Plane-Wave Compounding with Angle Coherence Factor for Ultrafast Ultrasound Imaging</b> Du, Bin ( <i>Shenzhen University</i> ); Wu, Xiang ( <i>Shenzhen University</i> ); Zheng, Haoteng ( <i>Shenzhen University</i> ); Siyuan Fang, Tony ( <i>Shenzhen University</i> ); Lu, Minhua* ( <i>Shenzhen University</i> ); Mao, Rui ( <i>Shenzhen University</i> )
WePoS-22: 17:15-19:00 Exhibit Hall 2 <b>Ultrasound Imaging (II) – Poster (Theme 2) (Poster Session)</b>					
17:15-19:00	WePoS-22.1	<b>Speckle Suppression of Ultrasonography using Maximum Likelihood Estimation and Weighted Nuclear Norm Minimization</b> Xu, Haohao ( <i>Shanghai University</i> ); Zhang, Qi* ( <i>Shanghai University</i> ); Dong, Huaipeng ( <i>Shanghai University</i> ); Jiang, Xiyuan ( <i>Shanghai University</i> ); Shi, Jun ( <i>Shanghai University</i> )	17:15-19:00	WePoS-22.10	<b>Phase-Shift Depth Migration for Plane-Wave Ultrasound Imaging</b> Albulayli, Mohammed ( <i>University of Victoria</i> ); Rakhmatov, Daler* ( <i>University of Victoria</i> )
17:15-19:00	WePoS-22.2	<b>Fast and Simple Automatic 3D Ultrasound Probe Calibration based on 3D Printed Phantom and an Untracked Marker</b> Shen, Jun* ( <i>LIRMM &amp; LTSI-University of Rennes 1</i> ); Zemiti, Nabil ( <i>Université Montpellier</i> ); Dillenseger, Jean-Louis ( <i>Université de Rennes 1</i> ); Poignet, Philippe ( <i>LIRMM, UMR CNRS 5506, University of Montpellier II</i> )	17:15-19:00	WePoS-22.11	<b>Automatic Recognition of Complete Atrioventricular Activity in Fetal Pulsed-Wave Doppler Signals</b> Sulas, Eleonora* ( <i>University of Cagliari</i> ); Ortu, Emanuele ( <i>University of Cagliari</i> ); Raffo, Luigi ( <i>University of Cagliari</i> ); Urru, Monica ( <i>Division of Pediatric Cardiology, S. Michele Hospital</i> ); Tumbarello, Roberto ( <i>Division of Pediatric Cardiology, S. Michele Hospital</i> ); Pani, Danilo ( <i>University of Cagliari</i> )
17:15-19:00	WePoS-22.3	<b>A Visual Probe Positioning Tool for 4D Ultrasound-Guided Radiotherapy</b> Ipsen, Svenja* ( <i>University of Luebeck</i> ); Bruder, Ralf ( <i>University of Luebeck</i> ); Kuhlemann, Ivo ( <i>University of Luebeck</i> ); Jauer, Philipp ( <i>University of Luebeck</i> ); Motisi, Laura ( <i>University Clinic Schleswig Holstein, Campus Luebeck</i> ); Cremers, Florian ( <i>University Clinic Schleswig Holstein, Campus Luebeck</i> ); Ernst, Floris ( <i>University of Luebeck</i> ); Schweikard, Achim ( <i>University of Luebeck, Germany</i> )			

17:15-19:00 WePoS-22.12  
**Compact and Programmable Ultrasound Front-End Processing Module for Research Activities**  
 Ramkrishna, Bharath\* (*Indian Institute of Tech. Hyderabad*); Kumar, Punit (*IIT Hyderabad*); Dhendi, Santhosh Reddy (*IIT-Hyderabad*); P, Rajalakshmi (*Indian Institute of Tech. Hyderabad*)

WePoS-23: 17:15-19:00 Exhibit Hall 2  
**Point of Care Technologies and Translation (III) – Poster (Theme 12)** (Poster Session)

17:15-19:00 WePoS-23.1  
**Fall Risk Estimation for Inpatients on Beds using 3D Vision Sensor**  
 Isomoto, Keisuke (*Tottori University*); Kushida, Daisuke\* (*Tottori University*)

17:15-19:00 WePoS-23.2  
**Development of a Load-Cell based Palpation Sensor Suitable for Ophthalmic Anesthesia Training**  
 Jagadeesh Kumar, Nimal\* (*Indian Institute of Tech. Madras, Chennai*); George, Bobby (*Indian Institute of Tech. Madras*); Sivaprakasam, Mohanasankar (*Indian Institute of Tech. Madras*)

17:15-19:00 WePoS-23.3  
**Instrumentation of Surgical Tools to Measure Load and Position during Incision, Tissue Retraction, and Suturing**  
 Schimmoeller, Tyler\* (*Cleveland Clinic*); Cho, Ki-Hyun (*1980*); Colbrunn, Robb (*Cleveland Clinic*); Nagle, Tara (*Cleveland Clinic*); Neumann, Erica (*Cleveland Clinic*); Erdemir, A. (*Cleveland Clinic*)

17:15-19:00 WePoS-23.4  
**Preliminary Assessment of a Microwave System to Detect Contrast Enhancing Agents**  
 Rahman, Mohammed\* (*King's College London*); Ahsan, Syed (*King's College London*); Lahri, Rachita (*King's College London*); Thanou, Maya (*King's College London*); Kosmas, Panagiotis (*Kings College London*)

17:15-19:00 WePoS-23.5  
**Innovation in Medical Technology Driven by Advances in Aerospace**  
 Cinelli, Ilaria\* (*NUI of Galway*); Brown, Lisa (*Univ. of Auckland*)

17:15-19:00 WePoS-23.6  
**Enhanced Control to Improve Navigation and Manipulation of Power Wheelchairs**  
 Carey, Stephanie\* (*Univ. of South Florida*); Aguirrezabal, Andoni (*Univ. of South Florida*); Alqasemi, Redwan (*Univ. of South Florida*); Dubey, Rajiv (*Univ. of South Florida*)

17:15-19:00 WePoS-23.7  
**The Development of a Benchtop Breast Reconstruction Surgical Simulator**  
 Viezel-Mathieu, Alex\* (*McGill University Health Centre*); Kazan, Roy (*McGill University Health Centre*); Cyr, Shantale (*Dept. of Anesthesia and Experimental Surgery, McGill University*); Gilardino, Mirko (*McGill University Health Centre*); Hemmerling, Thomas (*McGill University*)

17:15-19:00 WePoS-23.8  
**Determination of Saccade Latency Distributions using Video Recordings from Consumer-Grade Devices**  
 Saavedra Pena, Gladynel (*Massachusetts Institute of Tech.*); Lai, Hsin-Yu (*MIT*); Sze, Vivienne (*Massachusetts Institute of Tech.*); Heldt, Thomas\* (*Massachusetts Institute of Tech.*)

17:15-19:00 WePoS-23.9  
**Lung Consolidation Detection through Analysis of Vocal Resonance Signals**  
 Thomas, Dennis C.\* (*Indian Institute of Tech.*); K, Prakash (*Indian Institute of Tech.*); HariGovind, Gautam (*Indian Institute of Tech.*); Sen, Debashis (*Indian Institute of Tech.*)

17:15-19:00 WePoS-23.10  
**Design and Evaluation of Haptic Constraints for Laparoscopic Instrument Handling**  
 Ulhaq, Nawal (*University of Texas at Dallas*); Wadi, Husam (*University of Texas at Dallas*); Amlee, Thomas (*University of Texas at Dallas*); Diesen, Diana (*UT Southwestern Medical Center*); Majewicz, Ann\* (*University of Texas Dallas*)

17:15-19:00 WePoS-23.11  
**Feasibility Study of a Syringe Angulation Measurement System Suitable for Ophthalmic Regional Anesthesia Training**  
 Jagadeesh Kumar, Nimal\* (*Indian Institute of Technology Madras, Chennai*); George, Bobby (*Indian Institute of Technology Madras*); Sivaprakasam, Mohanasankar (*Indian Institute of Technology Madras*)

17:15-19:00 WePoS-23.12  
**Volume Manipulation based on 3D Reconstructed Surfaces for Joint Function Evaluation and Surgery Simulation**  
 Tsai, Ming-Dar\* (*Chung-Yuan Christian University*); Hsieh, Ming-Shium (*Dept. of Orthopaedic Surgery, En Chu Kong Hospital, Taiwan*); Yokota, Hideo (*RIKEN Center for Advanced Photonics*)

17:15-19:00 WePoS-23.13  
**Space Medicine Requirements Open to Innovation in BioMedical Engineering**  
 Cinelli, Ilaria\* (*NUI of Galway*)

WePoS-24: 17:15-19:00 Exhibit Hall 2  
**Wednesday 1 Page Research Poster Paper (I)** (Poster Session)

17:15-19:00 WePoS-24.1  
**Nocturnal Hypoglycemia Alarm Device using EEG Sensors**  
 Aggarwal, Anu\* (*Central Michigan University*)

17:15-19:00 WePoS-24.2  
**Research on Dynamic and Driving Forces of Human Lower Limbs based on 3D Motion Capture**  
 Run, Ji\* (*NRRA*); Tao, Chunjing (*National Research Center for Rehabilitation Technical Aids*); Fan, Yubo (*Beihang University*)

17:15-19:00 WePoS-24.3  
**Neural Spike Detection IC with 29 nW Self-Biased Instrumentation Amplifier and Adjacent Spike Merger**  
 Kim, Jong Pal\* (*Samsung Advanced Institute of Technology*); Lee, Hankyu (*Samsung Electronics*); Ko, Hyounggho (*Chungnam National University*)

17:15-19:00 WePoS-24.4  
**The Development of Ride-On Toy Cars Program for Kids with Movement Disabilities**  
 Briggs, Tokini (*University of Regina*); Okonkwo, Victor (*University of Regina*); Schaan, Kim (*Wascana Rehabilitation Centre*); Paranjape, Raman\* (*University of Regina*)

17:15-19:00 WePoS-24.5  
**Screening Support System for Cervical Cancer by Multi-Focus Imaging Processing**  
 Iwai, Ayaka\* (*Keio Univ.*); Tanaka, Toshiyuki (*Keio Univ.*)

17:15-19:00 WePoS-24.6  
**Photo-Responsive Microcapsules for Biosensor Signal Amplification**  
 Yamaguchi, Masaki\* (*Shinshu University*)

- 17:15-19:00 WePoS-24.7  
**Multimodal Study of Neurovascular Coupling in 0.1 Hz Frequency Range**  
 Lachert, Piotr\* (*Nalecz Institute of Biocybernetics and BioMedical Engineering Polish Academy of Sciences*); Janusek, Dariusz (*Inst of Biocybernetics & Biomed Engineering*); Pulawski, Przemyslaw (*Nalecz Institute of Biocybernetics and BioMedical Engineering Polish Academy of Sciences*); Sawosz, Piotr (*Institute of Biocybernetics and BioMedical Engineering*); Kacprzak, Michal (*Institute of Biocybernetics and BioMedical Engineering*); Liebert, Adam (*Inst of Biocybernetics & Biomed Engineering*); Cieslak-Blinowska, Katarzyna (*Warsaw University*)
- 17:15-19:00 WePoS-24.8  
**Predicting Breast Cancer Prognosis by Combining Genomic Data and Pathological Images**  
 Li, Ao\* (*University of Science and Technology of China*); Sun, Dongdong (*University of Science and Technology of China*); Wang, Minghui (*University of Science and Technology of China*)
- 17:15-19:00 WePoS-24.9  
**Automated Segmentation of Left Ventricle in Cardiac MRI using Convolutional Neural Network and Active Contour Model**  
 Wang, Minghui\* (*University of Science and Technology of China*); Zhang, Tinghong (*University of Science and Technology of China*); Li, Ao (*University of Science and Technology of China*)
- 17:15-19:00 WePoS-24.10  
**Enhancement of P300 Amplitude by Feedback Stimulus Presentation Reflecting Evaluation Value in BCI**  
 Fukami, Tadanori\* (*Yamagata University*); Shimada, Takamasa (*Tokyo Denki University*)
- 17:15-19:00 WePoS-24.11  
**A Dressing Kit Containing Haemostatic Wound Dressings based on Chitosan**  
 Madej-Kielbik, Longina\* (*Institute of Security Technologies MORATEX*); Zielińska, Dorota (*Institute of Security Technologies MORATEX*); Struszczyk, Marcin (*Institute of Security Technologies MORATEX*)
- 17:15-19:00 WePoS-24.12  
**SMART4MD M-Health Application to Support People with Mild Dementia and Their Caregivers: A Large-Scale Pilot**  
 Garcia-Betances, Rebeca I. (*Universidad Politécnica de Madrid*); Quintana, Maria (*Consorci Sanitari de Terrassa*); Garolera, Maite (*Consorci Sanitari de Terrassa*); Barnestein-Fonseca, Pilar (*IBIMA*); Mayoral, Fermin, Fermin (*Andalusian Health Service*); Arredondo, María Teresa\* (*Universidad Politécnica de Madrid*)
- 17:15-19:00 WePoS-24.13  
**Honeycomb-Shaped Array for Enhanced Stimulation Efficacy and Scalability of Subretinal Prosthesis**  
 Flores, Thomas\* (*Stanford University*); Huang, Tiffany (*Stanford University*); Lorach, Henri (*Stanford University*); Dalal, Roopa (*Stanford University*); Lei, Xin (*Stanford University*); Galambos, Ludwig (*Stanford University*); Kamins, Ted (*Stanford University*); Mathieson, Keith (*University of Strathclyde*); Palanker, Daniel (*Stanford University*)
- 17:15-19:00 WePoS-24.14  
**Numerical Simulation of Ocular Response to Projectile Impact**  
 Horak, Zdenek\* (*College of Polytechnics Jihlava*); Baca, Vaclav (*College of Polytechnics Jihlava*); Bacova, Tereza (*Dept. of Anatomy, 3rd Faculty of Medicine, Charles University in Prague*)
- 17:15-19:00 WePoS-24.15  
**Arugula Sprouting Behavior under Chlorophyll Spectrum-Matched LEDs for Potential Liver Benefits**  
 Lam, Lawrence\* (*University of Washington Bothell*); Xu, Tina (*University of Washington*); Bergman, Eir (*None*)
- 17:15-19:00 WePoS-24.16  
**Low Melting Point Metal based 3D Printing of Flexible Biomedical Microneedle Electrode Array**  
 Guo, Shengxin (*Tsinghua Univ.*); Liu, Ran\* (*Tsinghua Univ.*)
- 17:15-19:00 WePoS-24.17  
**Proposal for a New Surgical Device based on the Concept of Virtual Incision for Thoracoscopic Surgery**  
 Horise, Yuki\* (*Tokyo Women's Medical University*); Kanzaki, Masato (*Dept. of Surgery I, Chest Institute at Tokyo Women's Medical University*); Iseki, Hiroshi (*Tokyo Women's Medical University*); Masamune, Ken (*University of Tokyo*); Muragaki, Yoshihiro (*Tokyo Women's Medical University*)
- 17:15-19:00 WePoS-24.18  
**IoMT Skin Model for Explaining to a Patient using a Urethane Resin Molding and IoT Sensor**  
 Yamada, Saki\* (*Nagoya Kougakuin College of Technology*); Kamiya, Naoki (*Aichi Prefectural University*)
- 17:15-19:00 WePoS-24.19  
**Predictive Modeling of 30-Day Readmissions with a Neural Network Learning Approach**  
 Liu, Nan\* (*National University of Singapore*); Low, Lian Leng (*Singapore General Hospital*); Lam, Shao Wei (*SingHealth*); Thumboo, Julian (*Singapore General Hospital*); Ong, Marcus Eng Hock (*Singapore General Hospital*)
- 17:15-19:00 WePoS-24.20  
**A Mobile System for PD Patients based on Music Therapy**  
 Villanueva-Mascato, Samanta\* (*Universidad Politécnica de Madrid*); Abril-Jimenez, Patricia (*Universidad Politécnica de Madrid*); de los Ríos, Silvia (*Universidad Politécnica de Madrid*); Rojo, Javier (*Technical University of Madrid*); Arredondo, María Teresa (*Universidad Politécnica de Madrid*)
- 17:15-19:00 WePoS-24.21  
**Semi-Automated Radiomic Characterization of Pancreatic Ductal Adenocarcinoma in CT Images**  
 Khalvati, Farzad\* (*University of Toronto*); Lobo-Mueller, Edrize M. (*University of Alberta*); Gallinger, Steven (*University of Toronto*); Haider, Masoom (*University of Toronto*)
- 17:15-19:00 WePoS-24.22  
**Towards New Technologies and Applications for Smart Home Assisted Living: Enhancing Cognitive Rehabilitation for People with Mild Cognitive Impairments**  
 Liappas, Nikolaos (*Universidad Politécnica de Madrid*); Cabrera-Umpierrez, Maria Fernanda\* (*Universidad Politécnica de Madrid*); Arredondo, María Teresa (*Universidad Politécnica de Madrid*)
- 17:15-19:00 WePoS-24.23  
**Towards Personalized In-Home Self-Management and Intervention for Patients with Chronic Diseases**  
 Terius-Padron, Jose G. (*Univ. Politécnica de Madrid*); Garcia-Betances, Rebeca I. (*Univ. Politécnica de Madrid*); Cabrera-Umpierrez, Maria Fernanda\* (*Univ. Politécnica de Madrid*); Arredondo, María Teresa (*Univ. Politécnica de Madrid*)
- 17:15-19:00 WePoS-24.24  
**A Preliminary Study on a Statistical Deformation Model of Multiple Organs for Reconstructing Respiratory Displacement**  
 Iwai, Taiji\* (*Kyoto Univ.*); Nakao, Megumi (*Kyoto Univ.*); Nakamura, Mitsuhiro (*Kyoto Univ.*); Matsuda, Tetsuya (*Kyoto Univ.*)
- 17:15-19:00 WePoS-24.25  
**Diagnosis Support System for Colon Cancer based on Convolutional Neural Network**  
 Tanaka, Toshiyuki\* (*Keio University*)

- 17:15-19:00 WePoS-24.26  
**Stroke Volume Measurement by Pulse Contour Analysis under Passive Leg Raising Test**  
 Liu, Shing-Hong\* (*Chaoyang University of Technology, Taichung*);  
 Tan, Tan-Hsu (*National Taipei University of Technology*);  
 Huang, Yung-Fa (*Chaoyang University of Technology*)
- 17:15-19:00 WePoS-24.27  
**A Novel CMOS-Based 3D Nanoelectrode Array as a Sensor for Hydrogen Peroxide**  
 Lien, Chun Lung (*National Chiao Tung University*);  
 Yuan, Chiun-Jye\* (*National Chiao Tung University*)
- 17:15-19:00 WePoS-24.28  
**An Experiment to Distinguish between Parkinson's Disease and Major Depression using Voice**  
 Omiya, Yasuhiro\* (*PST Inc.*); Hagiwara, Naoki (*PST Inc.*);  
 Takano, Takeshi (*PST Inc.*); Shinohara, Shuji (*Univ. of Tokyo*);  
 Nakamura, Mitsuteru (*Univ. of Tokyo*); Higuchi, Masakazu (*Univ. of Tokyo*); Mitsuyoshi, Shunji (*Dept. of Verbal Analysis of Pathophysiology Graduate School of Medicine, Univ. of Tokyo*);  
 Takayama, Eiji (*Asahi Univ.*); Terashi, Hiroo (*Tokyo Medical Univ.*); Mitoma, Hiroshi (*Tokyo Medical Univ.*); Toda, Hiroyuki (*National Defense Medical College*); Saito, Taku (*National Defense Medical College*); Tokuno, Shinichi (*Univ. of Tokyo*)
- 17:15-19:00 WePoS-24.29  
**Preparation of Bioactive Titanium Oxide Nanotubes**  
 Lee, HyeRan (*Daelim University*); Yun, Yonghyeon (*Daelim University*); Lee, Deuk Yong\* (*Daelim University*)
- 17:15-19:00 WePoS-24.30  
**Preliminary Study: Real-Time Sleep Staging using Ballistocardiogram Signal**  
 Choi, Sang Ho (*Seoul National University*); Yoon, Heenam (*Seoul National University*); Kwon, Hyunbin (*Seoul National University*);  
 Oh, Sung Min (*Seoul National University Hospital*); Lee, Yujin (*Seoul National University Hospital*); Park, Kwang S.\* (*Seoul National University*)
- 17:15-19:00 WePoS-24.31  
**Piloting a Novel Communication System for Mechanically Ventilated Critical Care Patients**  
 Goldberg, Miriam A.\* (*Univ. of Massachusetts MD/PhD Program*);  
 Hochberg, Leigh (*VA / Brown U. / MGH / Harvard Med. School*);  
 Carpenter, Dawn (*Univ. of Massachusetts Medical School*);  
 Mangiameli, Daniel (*Univ. of Massachusetts Medical School*);  
 Celik, Ugur (*Univ. of Massachusetts Medical School*);  
 Walz, J. Matthias (*Univ. of Massachusetts Medical School*)
- 17:15-19:00 WePoS-24.32  
**A Novel, Multifunctional Digital Platform for Home Telehealth**  
 Xu, Andrew (*Sharon High School*); Xiao, Qiwei\* (*Dowyn LLC*);  
 Li, Baojun (*Boston University Medical Center*)
- 17:15-19:00 WePoS-24.33  
**Social Event Memory Test [SEMT]: A Sensitive Cognitive Test that can Detect Early Stage Dementia**  
 Choi, Jongdoo\* (*Samsung Medical Center*);  
 Kim, Jinho (*Samsung Medical Center*)
- 17:15-19:00 WePoS-24.34  
**Personal Identification by Walking Vibration on Veneer Board**  
 Sugimoto, Ryosuke (*University of Toyama*); Kim, Juhyon (*University of Toyama*); Kanayama, Yoshio (*NEC Solution Innovators, Ltd.*); Nakajima, Kazuki\* (*University of Toyama*)
- 17:15-19:00 WePoS-24.35  
**What's Absolute Humidity Affected during Noninvasive Ventilation?**  
 Fueda, Yuri\* (*Himeji Dokkyo University*); Kataoka, Takuya (*Himeji Dokkyo University*); Matsuda, Fuka (*Himeji Dokkyo University*)
- 17:15-19:00 WePoS-24.36  
**Unipolar Intracardiac Signal Morphology as a Parameter for Catheter Contact Evaluation**  
 Jovicic, Ivana\* (*BioSig Technologies Inc*); Padmanabhan, Deepak (*Mayo Clinic*); Sugrue, Alan (*Mayo Clinic*); Vaidya, Vaibhav (*Mayo Clinic*); Vlainic, Branislav (*BioSig Technologies Inc*); Mikolaitis, Lora (*BioSig Technologies Inc*); Krstic, Djordje (*BioSig Technologies Inc*); Foxall, Tom (*BioSig Technologies Inc*); Drakulic, Budimir (*BioSig Technologies Inc*); Venkatachalam, K.L. (*Mayo Clinic*); Asirvatham, Samuel (*Mayo Clinic*); Fakhar, Sina (*BioSig Technologies Inc*)
- 17:15-19:00 WePoS-24.37  
**Technical Image Quality Concerns in Radiology**  
 Mabotuwana, Thusitha\* (*Philips Healthcare*); Bhandarkar, Varun (*Univ. of Washington*); Hall, Christopher (*Philips Healthcare, Univ. of Washington*); Gunn, Martin (*Univ. of Washington*)
- 17:15-19:00 WePoS-24.38  
**Measurement of Tongue Force with Different Artificial Nipples during Infant Sucking**  
 Nishi, Eri\* (*Setsunan University*); Hiraoka, Katsuyuki (*JEX Co., Ltd.*); Okuda, Ryosuke (*Setsunan University*); Niikawa, Takuya (*Osaka Electro-Communication University*); Rikoh, Katsuhisa (*JEX Co., Ltd.*)
- 17:15-19:00 WePoS-24.39  
**Seizure Prediction Algorithms for Realizing Closed-Loop Treatment of Refractory Epilepsy**  
 Sakane, Fumiya\* (*Kyoto Univ.*); Fujiwara, Koichi (*Kyoto Univ.*);  
 Miyajima, Miho (*Tokyo Medical and Dental Univ.*); Suzuki, Yoko (*Univ. of Tsukuba*); Yamakawa, Toshitaka (*Kumamoto Univ.*);  
 Kano, Manabu (*Kyoto Univ.*); Maehara, Taketoshi (*Tokyo Medical and Dental Univ.*)
- 17:15-19:00 WePoS-24.40  
**Stiffness Estimation of the Medial Gastrocnemius Muscle in Toe Walking**  
 Fukumori, Daichi\* (*Graduate School of Science and Technology, Keio University*); Uchiyama, Takanori (*Keio University*)
- 17:15-19:00 WePoS-24.41  
**An N200 Brain-Computer Interface based on Retinotopic Mapping**  
 Chen, Jingjing (*Tsinghua University*); Li, Zhuoran (*Tsinghua University*); Zhang, Dan\* (*Tsinghua University*)
- 17:15-19:00 WePoS-24.42  
**Towards a Flexible Microfluidic Test Strip for IL-8 Detection**  
 Siu, Vince\* (*IBM T.J. Watson Research Center*); Lu, Minhua (*IBM T.J. Watson Research Center*); Colgan, Evan (*IBM T.J. Watson Research Center*); Knickerbocker, John (*IBM T.J. Watson Research Center*)
- 17:15-19:00 WePoS-24.43  
**Optogenetic Position Control of Murine Limb**  
 Srinivasan, Shriya\* (*MIT*); Maimon, Benjamin (*MIT*); Song, Hyun-Geun (*MIT*); Diaz, Maurizio (*MIT*); Herr, Hugh (*MIT*)
- 17:15-19:00 WePoS-24.44  
**Prediction of Depressive Tendency from Multidimensional Health Data Collected through Crowdsourcing**  
 Yamaguchi, Shiori\* (*Nara Institute of Science and Technology*);  
 Tanaka, Hiroki (*Nara Institute of Science and Technology*); Maki, Hayato (*Nara Institute of Science and Technology*); Kanaya, Shigehiko (*Nara Institute of Science and Technology*); Suzuki, Nobutaka (*Kanazawa University*); Satoshi, Nakamura (*Nara Institute of Science and Technology*)



17:15-19:00 WePoS-24.45  
**Study on Characteristics of Unintended Indwelling Needle Dislodgement Detection Circuit**  
 Nakaya, Naofumi\* (*Tsukuba International Univ.*); Watanabe, Satoshi (*International Univ. of Health and Welfare*); Mori, Yukio (*Salesian Polytechnic*); Shirahama, Naruki (*National Institute of Technology, Kitakyushu College*); Abe, Takayuki (*Tokyo Women's Medical Univ.*); Aoki, Kazuo (*Nihon Univ.*)

17:15-19:00 WePoS-24.46  
**Detection of Relaxing Kawaii using Stuffed Animals and ECG**  
 Ohkura, Michiko\* (*Shibaura Institute of Technology*); Tombe, Takafumi (*Shibaura Institute of Technology*); Ito, Kodai (*Shibaura Institute of Technology*)

17:15-19:00 WePoS-24.47  
**Survival Prediction of Hepatocellular Carcinoma Patients Treated by Transarterial Chemoembolization using CT Radiomics Analysis**  
 Kim, Jonghoon (*Sungkyunkwan Univ.*); Park, Bo-yong (*Sungkyunkwan Univ.*); Park, Hyunjin\* (*Sungkyunkwan Univ.*)

17:15-19:00 WePoS-24.48  
**Wrist-Wearable Bioelectrical Impedance Analyzer with Miniature Electrodes for Wellness Applications**  
 Jung, Myoung Hoon (*Samsung Advanced Institute of Technology*); Namkoong, Kak\* (*Samsung Advanced Institute of Technology, Samsung Electronics Co., Ltd.*)

17:15-19:00 WePoS-24.49  
**Feasibility Study on Screening for Dementia using Voice Analysis**  
 Nakamura, Mitsuteru\* (*University of Tokyo*); Shinohara, Shuji (*University of Tokyo*); Omiya, Yasuhiro (*PST Inc.*); Higuchi, Masakazu (*University of Tokyo*); Hagiwara, Naoki (*PST Inc.*); Takano, Takeshi (*PST Inc.*); Mitsuyoshi, Shunji (*Dept. of Verbal Analysis of Pathophysiology Graduate School of Medicine, University of Tokyo*); Nozaki, Yuki (*Tokyo Medical and Dental University*); Yoshitake, Miki (*Tokyo Medical and Dental University*); Sanjo, Nobuo (*Tokyo Medical and Dental University*); Tokuno, Shinichi (*University of Tokyo*)

17:15-19:00 WePoS-24.50  
**Decoding EEG with Capsules: A Preliminary Study**  
 Ha, Kwon Woo (*Kumoh National Institute of Technology*); Jeong, Jin-Woo\* (*Kumoh National Institute of Technology*)

WePoS-25: 17:15-19:00 Exhibit Hall 2  
**Wednesday 1 Page Research Poster Paper (II) (Poster Session)**

17:15-19:00 WePoS-25.1  
**A Reagent-Less System for Monitoring Urinary Multi-Components using Near-Infrared Spectroscopy**  
 Suzuki, Ikuto\* (*Graduate School of Natural Science & Technology, Kanazawa University*); Seino, Kimihiro (*Kanazawa University*); Nogawa, Masamichi (*Kanazawa University*); Naito, Hisashi (*Kanazawa University*); Ikarashi, Akira (*Aino University*); Ogawa, Mitsuhiro (*Teikyo University*); Yamakoshi, Ken-ichi (*Kanazawa University*); Tanaka, Shinobu (*Kanazawa University*)

17:15-19:00 WePoS-25.2  
**Detection of Transient and Dynamic Changes in Large-Scale Brain Networks during Microsleeps**  
 Poudel, Govinda\* (*University of Sydney*); Jones, Richard D. (*New Zealand Brain Research Institute*); Innes, Carrie R. H. (*Canterbury District Health Board*)

17:15-19:00 WePoS-25.3  
**Synaptic Responses by Planar Coil-Based Contact-Mode Magnetic Stimulation in the Acute Hippocampal Slices**  
 Park, Heejin\* (*Gwangju Institute of Science and Tech.*); Jo, Jihoon (*Chonnam National Univ. Medical School*); Kim, Sohee (*Daegu Gyeongbuk Institute of Science and Tech. (DGIST)*); Chung, Euiheon (*Gwangju Institute of Science and Tech.*)

17:15-19:00 WePoS-25.4  
**Cuff-Less Blood Pressure Measurement using Wearable Device**  
 Gil, Yeongjoon\* (*Huinno, Inc.*); Jung, Sunghoon (*Huinno, Inc.*); Agarwal, Rajeev (*Concordia University*)

17:15-19:00 WePoS-25.5  
**The Influence of the Astrocyte Activity on the Synaptic Input**  
 Piekut, Roman (*Laboratoire Le2i, FRE CNRS, Université de Bourgogne Franche Comté*); Lorenzo, Jhunlyn (*Laboratoire Le2i, FRE CNRS, Université de Bourgogne Franche Comté*); Binczak, Stéphane (*Université de Bourgogne*); Jacquir, Sabir\* (*Laboratoire LE2I UMR CNRS 6306, Université de Bourgogne*)

17:15-19:00 WePoS-25.6  
**Evaluation of Suicidal Ideation based on the Pitch Detection Rate**  
 Shinohara, Shuji\* (*University of Tokyo*); Negrea, Aurelian Denis (*University of Pitești*); Taicu, Marian (*University of Pitești*); Săvoiu, Gheorghe (*University of Pitești*); Omiya, Yasuhiro (*PST Inc.*); Nakamura, Mitsuteru (*University of Tokyo*); Higuchi, Masakazu (*University of Tokyo*); Takano, Takeshi (*PST Inc.*); Hagiwara, Naoki (*PST Inc.*); Mitsuyoshi, Shunji (*Dept. of Verbal Analysis of Pathophysiology Graduate School of Medicine, University of Tokyo*); Tokuno, Shinichi (*University of Tokyo*)

17:15-19:00 WePoS-25.7  
**Development of Brain-Machine Interface using Optical Illusion**  
 Tateyama, Naoki\* (*University of Tokyo*); Ueda, Kazutaka (*University of Tokyo*); Nakao, Masayuki (*University of Tokyo*); Nishi, Kazuhiko (*University of Tokyo*)

17:15-19:00 WePoS-25.8  
**Pediatric Respiratory Rate Estimation through Deep Neural Nets**  
 Starkov, Pierre\* (*Swiss Center for Electronics and Microtechnologies (CSEM)*); Sergio, Manzano (*University Hospitals of Geneva*); Hugon, Florence (*University Hospitals of Geneva*); Braun, Fabian (*CSEM SA*); Lemkaddem, Alia (*CSEM*); Verjus, Christophe (*CSEM*); Delgado-Gonzalo, Ricard (*CSEM*); Sola, Josep (*CSEM - Centre Suisse d'Electronique et Microtechnique*); Alain, Gervais (*University Hospitals of Geneva*); Mohamed-Rida, Benissa (*University of Geneva*)

17:15-19:00 WePoS-25.9  
**Evaluation of Mind Monitoring System (MIMOSYS) by Subjects with Romanian and Russian as Their Native Language**  
 Uraguchi, Tomotaka\* (*PST Inc.*); Shinohara, Shuji (*University of Tokyo*); Negrea, Aurelian Denis (*University of Pitești*); Taicu, Marian (*University of Pitești*); Săvoiu, Gheorghe (*University of Pitești*); Omiya, Yasuhiro (*PST Inc.*); Nakamura, Mitsuteru (*University of Tokyo*); Higuchi, Masakazu (*University of Tokyo*); Takano, Takeshi (*PST Inc.*); Hagiwara, Naoki (*PST Inc.*); Mitsuyoshi, Shunji (*Dept. of Verbal Analysis of Pathophysiology Graduate School of Medicine, University of Tokyo*); Tokuno, Shinichi (*University of Tokyo*)

17:15-19:00 WePoS-25.10  
**Simulated Microgravity Exposure Strikingly Attenuates the Baroreflex Total Loop Gain and Induces Orthostatic Hypotension**  
 Kamada, Kazuhiro\* (*Kyushu Univ.*); Saku, Keita (*Kyushu Univ.*); Mannoji, Hiroshi (*Kyushu Univ.*); Tohyama, Takeshi (*Kyushu Univ.*); Nishikawa, Takuya (*Kyushu Univ.*); Sunagawa, Genya (*Kyushu Univ.*); Abe, Kiyokazu (*Kyushu Univ.*); Kishi, Takuya (*Kyushu Univ. Graduate School of Medical Sciences*); Sunagawa, Kenji (*Kyushu Univ.*)

17:15-19:00 WePoS-25.11  
**A Novel Framework to Identify the Baroreflex Total Loop Gain by the Power Spectral Density of Arterial Pressure Time Series**  
 Mannoji, Hiroshi\* (*Kyushu University*); Saku, Keita (*Kyushu University*); Kinoshita, Hiroyuki (*Omron Healthcare Co., Ltd.*); Nishikawa, Takuya (*Kyushu University*); Tohyama, Takeshi (*Kyushu University*); Kamada, Kazuhiro (*Kyushu University*); Sunagawa, Genya (*Kyushu University*); Abe, Kiyokazu (*Kyushu University*); Kishi, Takuya (*Kyushu University Graduate School of Medical Sciences*); Sunagawa, Kenji (*Kyushu University*)

- 17:15-19:00 WePoS-25.12  
**Reperfusion Therapy with Delayed Vagal Nerve Stimulation in Acute Myocardial Infarction Strikingly Reduces Infarct Size and Improves Left Ventricular Function in the Long-Term**  
 Sunagawa, Genya (Kyushu University); Saku, Keita\* (Kyushu University); Kishi, Takuya (Kyushu University Graduate School of Medical Sciences); Sunagawa, Kenji (Kyushu University)
- 17:15-19:00 WePoS-25.13  
**Deep Learning based Breast Cancer Diagnosis based on Protein Expression Array Data**  
 Ji, Dongjin (Korea Advanced Institute of Science and Technology); Song, Yong-Joon (Korea Advanced Institute of Science and Technology (KAIST)); Han, Gyu-Bum (Korea Advanced Institute of Science and Technology (KAIST)); Cho, Dong-Ho\* (Korea Advanced Institute of Science and Technology (KAIST))
- 17:15-19:00 WePoS-25.14  
**Intervention Subject Selection based on Medical Cost Prediction by using Bayesian Networks**  
 Hasegawa, Yasutaka\* (Hitachi, Ltd.); Tarumi, Shinji (Research and Development Group, Hitachi, Ltd.); Miyoshi, Toshinori (Central Research Lab, Hitachi Co. Ltd.); Ban, Hideyuki (Central Research Lab, Hitachi, Ltd.); Negishi, Shouji (Hitachi Health Insurance Society); Kunichika, Norihito (Hitachi Health Insurance Society)
- 17:15-19:00 WePoS-25.15  
**Using One-Channel EEG Features from Multiple Task Conditions for Classifying ADHD vs. Non-ADHD Children**  
 Huang, Shiuann (National Taipei Univ. of Technology); Chen, Mu-Hong (Taipei Veterans General Hospital); Tsai, Chia-Fen (Taipei Veterans General Hospital); Wu, Chien-Te (National Taiwan Univ.); Liu, Yi-Hung\* (National Taipei Univ. of Technology)
- 17:15-19:00 WePoS-25.16  
**Eye Movements in Facial Expression Recognition using Hidden Markov Models: Comparison of Younger and Older Adults**  
 Noh, Soo Rim\* (Chungnam National University); Kim, Sang-Ho (Engineering Center of Hyundai Engineering, co); Lee, Eunbyul (Dept. of Psychology, Chungnam National University); Han, KyungHun (Division of Sport Science, Pusan National University)
- 17:15-19:00 WePoS-25.17  
**Localized Bioimpedance during Abduction and Adduction of Vocal Folds: Pilot Pediatric Patient**  
 Freeborn, Todd\* (University of Alabama); Gosa, Memorie (University of Alabama)
- 17:15-19:00 WePoS-25.18  
**Modified Fast Fully Adaptive Beamforming for Source Localization**  
 Ravan, Maryam\* (New York Institute of Technology)
- 17:15-19:00 WePoS-25.19  
**Predictive Multiscale Approach (3D-1D) for Blood Flow Simulations in Cardiovascular Networks**  
 Seyed Vahedein, Yashar\* (Rochester Institute of Technology); Karnam, Yogesh (Rochester Institute of Technology); Liberson, Alexander (Rochester Institute of Technology)
- 17:15-19:00 WePoS-25.20  
**Aging Dulls Frontal-Theta Increase during Memory Maintenance**  
 Takase, Ryoken (Hokkaido University); Kuriki, Shinya (Tokyo Denki University); Yokosawa, Koichi\* (Hokkaido University)
- 17:15-19:00 WePoS-25.21  
**Pilot Clinical Trial for a New Deep Brain Stimulation Device with Enhanced Magnetic Resonance Imaging Compatibility**  
 Jiang, Changqing\* (Tsinghua University); Zhang, Feng (Tsinghua University); Gong, Chen (Tsinghua University); Wan, Sen (Tsinghua University); Yao, Chen (Tsinghua University); Li, Linze (Tsinghua University); He, Changgeng (Tsinghua University); Li, Luming (Tsinghua University)
- 17:15-19:00 WePoS-25.22  
**Sparse Principal Components used as Structural Features in Alzheimer's Disease Identification**  
 Liu, Yan\* (University of Chinese Academy of Sciences); Zeng, Xiangzhu (Peking University Third Hospital); Wang, Ling (University of Electronic Science and Technology of China); Wang, Zheng (Capital University of Medical Sciences); Wang, Qiang (Beijing Union University)
- 17:15-19:00 WePoS-25.23  
**Influence of Slight Changes in Electrode Locations Upon the Classification Accuracy of a SSVEP-Based BCI**  
 Kim, Hodam (Hanyang Univ.); Im, Chang-Hwan\* (Hanyang Univ.)
- 17:15-19:00 WePoS-25.24  
**Assessing Circuit Design Parameters for Lower-Power Clinically-Viable Intracortical Brain-Computer Interfaces**  
 Even-Chen, Nir\* (Stanford University); Muratore, Dante (Stanford University); Murmann, Boris (Stanford University); Shenoy, Krishna V. (Stanford University)
- 17:15-19:00 WePoS-25.25  
**Development of a Data Selection Method for the Learning of a Brain-Machine Interface**  
 Shibata, Mahoko\* (Waseda Univ.); Ishiyama, Atsushi (Waseda Univ.)
- 17:15-19:00 WePoS-25.26  
**Classification of Two Motor Imagery using Customized Frequency and Electrodes Suitable for Each Subject**  
 Hoshino, Kei\* (Waseda Univ.); Ishiyama, Atsushi (Waseda Univ.)
- 17:15-19:00 WePoS-25.27  
**Performance Comparison of Classification Algorithms for SSVEP-Based BCI in Terms of Robustness to Mental States**  
 Park, Seonghun (Hanyang University); Kwon, Jinuk (Hanyang University); Kim, Hodam (Hanyang University); Chae, Younsoo (Hanyang University); Im, Chang-Hwan\* (Hanyang University)
- 17:15-19:00 WePoS-25.28  
**Mental Wellness Evaluation based on Heart Rate Rhythm**  
 Jamalipournokandeh, Omid\* (Hosei University); Shibui, Toyohito (Hosei University Graduate School); Yoshikawa, Reina (Hosei University); Yana, Kazuo (Hosei University); Asakawa, Kiyoshi (Hosei University); Momoi, Emi (University of Electro-Communications); Moon, Chiho (ISID-AO, Ltd.); Yokochi, Jun (ISID-AO, Ltd.); Oshirabe, Katsuyuki (ISID-AO, Ltd.)
- 17:15-19:00 WePoS-25.29  
**Droplet based Microfluidic System for Multicellular Tumor Spheroid Formation**  
 Kwak, Bongseop\* (Korea Institute of Machinery & Materials)
- 17:15-19:00 WePoS-25.30  
**Profiles of Normal Sinus Heart Rhythm and Arrhythmias based on Symbolic Dynamics and Shannon Entropy**  
 Tian, Zhaoyin (Nara Institute of Science and Tech.); Kido, Koshiro (Nara Institute of Science and Tech.); Huang, Ming\* (Nara Institute of Science and Tech.); Tamura, Toshiyo (Waseda University); Ono, Naoaki (Nara Institute of Science and Tech.); Yoshimura, Takumi (Tokyo Metropolitan College of Industrial Tech.); Kanaya, Shigehiko (Nara Institute of Science and Tech.); Altaf-Ul-Amin, MD. (Nara Institute of Science and Tech.)

- 17:15-19:00 WePoS-25.31  
**An Augmentation Method Specific for X-Ray Images used in Image-Guided Navigation**  
 Liu, Shiqi (*State Key Lab of Management and Control for Complex Systems, Institute of Automation, Chinese Academy of Science*); Xie, Xiao-Liang (*Chinese Academy of Sciences*); Bian, Gui-Bin (*Institute of Automation, Chinese Academy of Sciences*); Hou, Zeng-Guang\* (*Institute of Automation, Chinese Academy of Sciences*); Cui, Chengkun (*Institute of Automation, Chinese Academy of Sciences*); Wu, Yu-Dong (*Institute of Automation, Chinese Academy of Sciences*); Cheng, Xiaoran (*State Key Lab of Management and Control for Complex Systems, Institute of Automation, Chinese Academy of Science*); Wang, Qiaoli (*State Key Lab of Management and Control for Complex Systems, Institute of Automation, Chinese Academy of Science*); Chen, Sheng (*Institute of Automation, Chinese Academy of Sciences*)
- 17:15-19:00 WePoS-25.32  
**Cell Membrane Extraction in H&E Stained Histological Sections using Deep Learning**  
 Sugimoto, Keita\* (*Graduate School of Engineering and Science, Shibaura Institute of Technology*); Takahashi, Masanobu (*Shibaura Institute of Technology*); Nakano, Masayuki (*Shonan Fujisawa Tokushukai Hospital*)
- 17:15-19:00 WePoS-25.33  
**Cortical Current Estimation based on Standard Brain Model using EEG Signals during Motor Imagery**  
 Takase, Yuya\* (*Shibaura Institute of Tech.*); Ogata, Yousuke (*Tokyo Institute of Tech.*); Yoshimura, Natsue (*Tokyo Institute of Tech.*); Koike, Yasuharu (*Tokyo Institute of Tech.*); Kanoh, Shin'ichiro (*Shibaura Institute of Tech.*)
- 17:15-19:00 WePoS-25.34  
**Investigation of Event-Related Potentials Elicited by Virtually Located Auditory Tones**  
 Asai, Miyako\* (*Shibaura Institute of Technology*); Kanoh, Shin'ichiro (*Shibaura Institute of Technology*); Sakamoto, Shuichi (*Tohoku University*); Suzuki, Yoiti (*Tohoku University*)
- 17:15-19:00 WePoS-25.35  
**Automated Classification of Pulmonary Nodule in CT Images: Development of Analysis Method using Multi DCNNs**  
 Onishi, Yuya (*Fujita Health University*); Teramoto, Atsushi\* (*Fujita Health University*); Yamada, Ayumi (*Fujita Health University*); Tsujimoto, Masakazu (*Fujita Health University*); Inoue, Takahiro (*Fujita Health University*); Imaizumi, Kazuyoshi (*Fujita Health University*); Toyama, Hiroshi (*Fujita Health University*); Saito, Kuniaki (*Fujita Health University*); Fujita, Hiroshi (*Gifu University*)
- 17:15-19:00 WePoS-25.36  
**Validation of the Temporal Accuracy of a Capacitive Electrocardiogram**  
 Kido, Koshiro (*Nara Institute of Science and Technology*); Tian, Zhaoyin (*Nara Institute of Science and Technology*); Huang, Ming\* (*Nara Institute of Science and Technology*); Tamura, Toshiyo (*Waseda University*); Ono, Naoki (*Nara Institute of Science and Technology*); Yoshimura, Takumi (*Tokyo Metropolitan College of Industrial Technology*); Kanaya, Shigehiko (*Nara Institute of Science and Technology*); Altaf-UI-Amin, MD. (*Nara Institute of Science and Technology*)
- 17:15-19:00 WePoS-25.37  
**Voice-Based Emotion Model for Identifying Major Depression**  
 Higuchi, Masakazu\* (*University of Tokyo*); Shinohara, Shuji (*University of Tokyo*); Nakamura, Mitsuteru (*University of Tokyo*); Omiya, Yasuhiro (*PST Inc.*); Hagiwara, Naoki (*PST Inc.*); Takano, Takeshi (*PST Inc.*); Toda, Hiroyuki (*National Defense Medical College*); Saito, Taku (*National Defense Medical College*); Terashi, Hiroo (*Tokyo Medical University*); Mitoma, Hiroshi (*Tokyo Medical University*); Mitsuyoshi, Shunji (*Dept. of Verbal Analysis of Pathophysiology Graduate School of Medicine, University of Tokyo*); Tokuno, Shinichi (*University of Tokyo*)
- 17:15-19:00 WePoS-25.38  
**Effects of Magnetic Field on Permeability and Heating Properties of Hyperthermia Implant using Micro-/Nano-Magnetic Particles**  
 Tonthat, Loi\* (*Akita Univ.*); Yamamoto, Yoshiyuki (*Akita Univ.*); Saito, Hajime (*Akita Univ.*); Mitobe, Kazutaka (*Akita Univ.*)
- 17:15-19:00 WePoS-25.39  
**Finite-Difference-Method Calculations for Effects of Amyotrophic Lateral Sclerosis on Bio-Impedance of Skeletal Muscles**  
 Sekine, Katsuhisa\* (*Kanazawa University*)
- 17:15-19:00 WePoS-25.40  
**Dynamic Neuronal Firing during High Frequency Stimulation in Brain**  
 Huang, Lu (*Zhejiang University*); Feng, Zhouyan\* (*Zhejiang University*); Wang, Zhaoxiang (*Zhejiang University*)
- 17:15-19:00 WePoS-25.41  
**User Authentication for Virtual Reality Applications based on Facial EMG Induced by Facial Expression Changes**  
 Choi, SeongJun (*Hanyang University*); Cha, Ho-Seung (*Hanyang University*); Im, Chang-Hwan\* (*Hanyang University*)
- 17:15-19:00 WePoS-25.42  
**The Different Degree of Correlation between Fluctuations of H-Wave Amplitude and Blood Pressure among Triceps Surae Muscles**  
 Taki, Chinami\* (*Kobe University*); Shiozawa, Naruhito (*Ritsumeikan University*); Kimura, Tetsuya (*Kobe University*)
- 17:15-19:00 WePoS-25.43  
**Estimation of Whole-Brain Task-Evoked Dynamic Effective Connectivity from fMRI in a Visual Oddball Experiment**  
 Zhang, Li\* (*Shenzhen University*); Li, Jiewei (*University of Hong Kong*); Liu, Chenyang (*University of Hong Kong*); Chan, Shing-Chow (*University of Hong Kong*); Chen, Xin (*Shenzhen University*); Lu, Minhua (*Shenzhen University*); Zhang, Xin-Yu (*Shenzhen University*); Zhang, Zhiguo (*Shenzhen University*)
- 17:15-19:00 WePoS-25.44  
**Development of an Unrestrained System for Estimating Urine Volume using an Electrode Matrix Sheet**  
 Tachibana, Katsunori\* (*Osaka Electro-Communication University*); Niikawa, Takuya (*Osaka Electro-Communication University*)
- 17:15-19:00 WePoS-25.45  
**Ultrasound Stimulation Elicits Action Potentials in Leech Nociceptive Cells**  
 Dedola, Francesca\* (*BioRobotics Institute Scuola Superiore Sant'Anna*); Ulloa Severino, Francesco Paolo (*Duke University*); Cutrone, Annarita (*Scuola Superiore Sant'Anna*); Torre, Vincent (*International School for Advanced Studies (SISSA)*); Mazzoni, Alberto (*Istituto di Biorobotica, Scuola Superiore Sant'Anna*); Micera, Silvestro (*Scuola Superiore Sant'Anna*)
- 17:15-19:00 WePoS-25.46  
**Impact of the Skull Model on Simulated TFUS Beam Profiles**  
 Pasquinelli, Cristina\* (*Technical University of Denmark*); Montanaro, Hazael (*IT'IS Foundation for Research on Information Technologies in Society*); Neufeld, Esra (*Foundation for Research on Information Technologies in Society (IT'IS)*); Lee, Hyunjoo Jenny (*Korea Advanced Institute of Science and Technology (KAIST)*); Thielscher, Axel (*Copenhagen University Hospital Hvidovre, Denmark & BioMedical Engineering Section*)
- 17:15-19:00 WePoS-25.47  
**Pulsation Detection with Acoustic Palpation for Robotic Surgery**  
 Chen, Chien-Hsi (*OVGU*); Sühn, Thomas (*TU Ilmenau*); Illanes, Alfredo (*Otto-von-Guericke University of Magdeburg*); Maldonado, Ivan (*OVGU, INKA*); Wex, Cora (*Otto-von-Guericke-University Magdeburg*); Croner, Roland (*Otto-von-Guericke-University Magdeburg*); Boese, Axel (*Dept. of Medical Engineering, Otto-von-Guericke-University of Magdeburg, Germany*); Friebe, Michael\* (*Otto-von-Guericke-University*)

17:15-19:00 WePoS-25.48  
**Accuracy of Sleep Arousal Response Detection using Pulse Rate Variation in Young Healthy Subjects**  
 Fujie, Tatsuro\* (*Osaka Electro-Communication University*); Tagawa, Munenori (*Osaka Electro-Communication University*); Nakamura, Hideo (*Osaka Electro-Communication University*)

17:15-19:00 WePoS-25.49  
**Motor Planning Attenuates Event-Related Spectral Power of EEG**  
 Kondo, Toshiyuki\* (*Tokyo University of Agriculture and Technology*); Tojiki, Hajime (*Tokyo University of Agriculture and Technology*); Hayashi, Yoshikatsu (*University of Reading*); Yano, Shiro (*Tokyo University of Agriculture and Technology*)

17:15-19:00 WePoS-25.50  
**Closed Loop Architecture to Assess Mood and Deliver a Personalized Intervention to Patients with Severe Somatic Disease**  
 Gonzalez-Martinez, Sergio\* (*Universidad Politécnica de Madrid*); Chen, Weiyi (*Universidad Politécnica de Madrid*); Ottaviano, Manuel (*Technical University of Madrid*); Arredondo, María Teresa (*Universidad Politécnica de Madrid*)

WePoS-26: 17:15-19:00 Exhibit Hall 2  
**Wednesday 1 Page Research Poster Paper (III) (Poster Session)**

17:15-19:00 WePoS-26.1  
**Classification of Activated and Hyperactivated Human Sperm by 3D+t Metrics of the Flagellum**  
 Ehrlich, Hanna (*Universidad Autónoma del Estado de Morelos*); Montoya, Fernando (*Universidad Nacional Autónoma de México*); Hernandez-Herrera, Paul (*Universidad Nacional Autónoma de México*); Hermosillo-Valadez, Jorge (*Universidad Autónoma del Estado de Morelos*); Darszon, Alberto (*Instituto de Biotecnología, UNAM*); Corkidi, Gabriel\* (*Instituto de Biotecnología, UNAM*)

17:15-19:00 WePoS-26.2  
**Preparing of SU-8 to Build Nano-Gratings in QCM Surfaces for Micro Traces Detection**  
 De Faria, Rubens Alexandre\* (*Syracuse Univ.*); Abatti, Paulo J. (*Federal Univ. of Technology of Parana*); Spencer, James T. (*Syracuse Univ.*); Sponsler, Michael Bradley (*Syracuse Univ.*); De Faria, Rubens Alexandre (*Federal Univ. of Technology of Parana*)

17:15-19:00 WePoS-26.3  
**An Assessment Framework for Voice-Based Biometrics**  
 Cocioceanu, A.N. (*Dept. of Computational Physics and Information Technologies of Horia Hulubei National Institute for Physics and Nuclear Engineering*); Raportaru, M.C. (*Dept. of Computational Physics and Information Technologies of Horia Hulubei National Institute for Physics and Nuclear Engineering*); Spanakis, Emmanouil G.\* (*Foundation for Research and Technology – Hellas (FORTH)*); Markopoulos, Ioannis (*FORTHNET S.A.*); Nicolin, Alexandru I. (*Dept. of Computational Physics and Information Technologies of Horia Hulubei National Institute for Physics and Nuclear Engineering*)

17:15-19:00 WePoS-26.4  
**Internet of Medical Things for Healthcare in Smart Monitoring and Diverse Networking Environments**  
 Spanakis, Emmanouil G.\* (*Foundation for Research and Technology – Hellas (FORTH)*)

17:15-19:00 WePoS-26.5  
**Successful Development of a Multi-Site Photoplethysmography Device for Fast Peripheral Arterial Disease Diagnosis in Primary Care**  
 Allen, John\* (*Freeman Hospital*); Stansby, Gerard (*Newcastle Hospitals*); Lecouturier, Jan (*Newcastle Univ.*); Wilkes, Scott (*Sunderland Univ.*); Vale, Luke (*Newcastle Univ.*); McCormack, Tony (*Newcastle Hospitals*); Sims, Andrew (*Newcastle Univ.*)

17:15-19:00 WePoS-26.6  
**Potentiometric Thread based Sensor Patch for Monitoring Ammonium and Ph in Sweat**  
 Terse, Trupti (*Tufts University*); Matharu, Zimile (*Tufts University*); Lyu, Boyang (*Tufts University*); Punjiya, Meera (*Tufts University*); Sonkusale, Sameer\* (*Tufts University*)

17:15-19:00 WePoS-26.7  
**Localization of Atrial Fibrillation Rotors in Fibrotic Tissue using Circular Diagnostic Catheters**  
 Ganesan, Prasanth (*Florida Atlantic University*); Zilouchian, Hussein (*Florida Atlantic University*); Cherry, Elizabeth (*Rochester Institute of Technology*); Pertsov, Arkady (*SUNY Upstate Medical University*); Ghoraani, Behnaz\* (*Florida Atlantic University*)

17:15-19:00 WePoS-26.8  
**Molecular Dynamics Simulation Studies of Thermal Effects Created by Cell Membrane Electroporation**  
 Song, Jiahui\* (*Wentworth Institute of Technology*)

17:15-19:00 WePoS-26.9  
**Problem of Controlling Blood Flow through an Intravascular Membrane Catheter**  
 Karabegovic, Alen (*Vienna University of Technology*); Lukitsch, Benjamin (*Vienna University of Technology*); Janeczek, Christoph (*Vienna University of Technology*); Huber-Dangl, Florentine (*Vienna University of Technology*); Ecker, Paul (*TU Wien*); Harasek, Michael (*Vienna University of Technology*); Groehler, Margit\* (*TU Wien*)

17:15-19:00 WePoS-26.10  
**Cardiovascular Risk Predictors Tracking from Arm and Ankle Cuff Pulse Volume Waveform Information Fusion**  
 Ghasemi, Zahra (*Univ. of Maryland*); Lee, Jongchan (*Univ. of Maryland*); Kim, Chang-Sei (*Chonnam National Univ.*); Cheng, Hao-min (*Taipei Veterans General Hospital*); Sung, Shih-Hsien (*Taipei Veterans General Hospital*); Chen, Chen-Huan (*National Yang-Ming Univ.*); Mukkamala, Ramakrishna (*Michigan State Univ.*); Hahn, Jin-Oh\* (*Univ. of Maryland*)

17:15-19:00 WePoS-26.11  
**One-Point Calibration of Pulse Transit Time to Blood Pressure**  
 Mousavi, Azin Sadat (*University of Maryland*); Zhu, Junxi (*University of Maryland*); Carek, Andrew (*Georgia Institute of Technology*); Inan, Omer (*Georgia Institute of Technology*); Hahn, Jin-Oh\* (*University of Maryland*); Mukkamala, Ramakrishna (*Michigan State University*)

17:15-19:00 WePoS-26.12  
**Modelling Valvular Diseases using a Virtual Physiology Engine**  
 Ruales Rosero, Paul (*University of Illinois at Urbana-Champaign*); Rajeswaran, Pavithra (*University of Illinois at Urbana Champaign*); Webb, Jeffrey (*Kitware, Inc.*); Bray, Aaron (*Kitware, Inc.*); Kesavadas, Thenkurussi\* (*UIUC/HCESC*)

17:15-19:00 WePoS-26.13  
**Estimation of Body Water using Wrist-Type Bioelectrical Impedance Analyzer**  
 Lee, Yeolho (*SAIT (Samsung Advanced Institute of Technology)*); Namkoong, Kak\* (*Samsung Advanced Institute of Technology, Samsung Electronics Co., Ltd.*)

17:15-19:00 WePoS-26.14  
**Contribution of Placement in Bone Conduction Transmission – Comparison between Condyle and Mastoid**  
 Qin, Xiuyuan\* (*Chiba University*); Otsuka, Sho (*Chiba University*); Nakagawa, Seiji (*Chiba University*)

17:15-19:00 WePoS-26.15  
**Deception Detection Algorithm based on Deep Neural Networks**  
 Hwang, Layoung (*Yonsei University*); Kim, SeungChan (*Yonsei University*); Shin, Taemin\* (*Yonsei University*)

- 17:15-19:00 WePoS-26.16  
**Feature Quantities of EEG to Characterize Human Internal States of Concentration and Relaxation**  
 Sazuka, Naoya\* (*Sony Corp.*); Komoriya, Yota (*Sony Corp.*); Ezaki, Takayuki (*Sony Corp.*); Uraguchi, Maki (*Nagoya University*); Ohira, Hideki (*Nagoya University*)
- 17:15-19:00 WePoS-26.17  
**Fabrication of PDMS Microchip for Bio Mechanobiological Study**  
 Tang, Yu-Hsiang (*Instrument Technology Research Center, National Applied Research Labs*); Huang, Tsung-Tao\* (*Instrument Technology Research Center, National Applied Research Labs*)
- 17:15-19:00 WePoS-26.18  
**Optimum Amplitude Ratios for Determination of Blood Pressure**  
 Alvarado Alvarez, Mariana\* (*Univ. of Alberta*); Padwal, Raj (*Univ. of Alberta*); Sridar, Sangita (*Univ. of Alberta*); Jalali, Afrooz (*Univ. of Alberta*); Ringrose, Jennifer S. (*Univ. of Alberta*); Kobryn, Alexander E. (*NanoTechnology Research Center, National Research Council Canada*); Hiebert, Wayne K. (*NanoTechnology Research Center, National Research Council Canada*)
- 17:15-19:00 WePoS-26.19  
**Accuracy of Blood Pressure Estimation Models**  
 Alvarado Alvarez, Mariana\* (*Univ. of Alberta*); Padwal, Raj (*Univ. of Alberta*); Sridar, Sangita (*Univ. of Alberta*); Jalali, Afrooz (*Univ. of Alberta*); Ringrose, Jennifer S. (*Univ. of Alberta*); Kobryn, Alexander E. (*NanoTechnology Research Center, National Research Council Canada*); Hiebert, Wayne K. (*NanoTechnology Research Center, National Research Council Canada*)
- 17:15-19:00 WePoS-26.20  
**Comparison of Fast Strategies in Calculating Fractional Flow Reserve from Computed Tomography Coronary Angiography**  
 Zhang, Jun-Mei (*Natl. Heart Center*); Shuang, Dongsi (*Wuhan Asia Heart Hospital*); Baskaran, Lohendran (*Natl. Heart Centre Singapore*); Huang, Weimin (*Inst. for Infocomm Research, Agency for Science Technology and Research*); Teo, Soo Kng (*Inst. of High Performance Computing, A\*STAR*); Allen Jr, John Carson (*Duke-NUS Medical School Singapore*); Tan, Ru San (*Natl. Heart Center*); Su, Xi (*Wuhan Asia Heart Hospital*); Ismail, Nasrul (*Natl. Heart Centre Singapore*); Zhou, Jiayin (*Inst. for Infocomm Research*); Fam, Jiang Ming (*Natl. Heart Centre Singapore*); Chin, Chee Yang (*Natl. Heart Centre Singapore*); Keng, Yung Jih Felix (*Natl. Heart Centre Singapore*); Wong, Aaron Sung Lung (*Natl. Heart Centre Singapore*); Tan, Jack Wei Chieh (*Natl. Heart Centre Singapore*); Yeo, Khung Keong (*Natl. Heart Centre Singapore*); Wong, Philip (*Natl. Heart Centre Singapore*); Chin, C.T. (*Natl. Heart Centre Singapore*); Ho, K.W. (*Natl. Heart Centre Singapore*); Yap, J. (*Natl. Heart Centre Singapore*); Kassab, G. (*Purdue Univ.*); Chua, T. (*Natl. Heart Center*); Koh, T.H. (*Natl. Heart Centre Singapore*); Tan, S.Y. (*Natl. Heart Center*)
- 17:15-19:00 WePoS-26.21  
**Wall Shear Stress Determination using Computed Tomography Coronary Angiography and Computational Fluid Dynamics Associated with High-Risk Plaque**  
 Zhang, Jun-Mei (*Natl. Heart Center*); Shuang, Dongsi (*Wuhan Asia Heart Hospital*); Baskaran, Lohendran (*Natl. Heart Centre Singapore*); Huang, Weimin (*Inst. for Infocomm Research, Agency for Science Tech. and Research*); Teo, Soo Kng (*Inst. of High Performance Computing, A\*STAR*); Allen Jr, John Carson (*Duke-NUS Medical School Singapore*); Tan, Ru San (*Natl. Heart Center*); Su, Xi (*Wuhan Asia Heart Hospital*); Ismail, Nasrul (*Natl. Heart Centre Singapore*); Zhou, Jiayin (*Inst. for Infocomm Research*); Fam, Jiang Ming (*Natl. Heart Centre Singapore*); Chin, Chee Yang (*Natl. Heart Centre Singapore*); Keng, Yung Jih Felix (*Natl. Heart Centre Singapore*); Wong, Aaron Sung Lung (*Natl. Heart Centre Singapore*); Tan, Jack Wei Chieh (*Natl. Heart Centre Singapore*); Yeo, Khung Keong (*Natl. Heart Centre Singapore*); Wong, Philip (*Natl. Heart Centre Singapore*); Chin, Chee Tang (*Natl. Heart Centre Singapore*); Ho, Kay Woon (*Natl. Heart Centre Singapore*); Yap, Jonathan (*Natl. Heart Centre Singapore*); Kassab, Ghassan (*Purdue Univ.*); Chua, Terrance (*Natl. Heart Center*); Koh, Tian Hai (*Natl. Heart Centre Singapore*); Tan, Swee Yaw (*Natl. Heart Center*)
- 17:15-19:00 WePoS-26.22  
**An Adaptable and Rapid Sensor of Circulating D-Dimer Protein for Screening of Pulmonary Embolism**  
 Li, Shanshan (*Hebei Univ. of Technology*); Wu, Jie\* (*Univ. of Tennessee*); Eda, Shigetoshi (*Univ. of Tennessee*)
- 17:15-19:00 WePoS-26.23  
**A Method for Measuring Respiration in Exercising States using an Elastic Piezoelectric Film**  
 Sudo, Daiki\* (*Meijo University*); Sahashi, Kensuke (*Meijo University*); Mukai, Toshiharu (*Meijo University*)
- 17:15-19:00 WePoS-26.24  
**Mismatch Negativity Neurofeedback for Learning of Speech Sounds**  
 Chang, Ming\* (*National Institute of Information and Communications Technology and Osaka Univ.*); Ando, Hideyuki (*Osaka Univ., Graduate School of Information Science & Technology*); Naruse, Yasushi (*National Institute of Information and Communications Technology*); Maeda, Taro (*Osaka Univ., Graduate School of Information Science & Technology*)
- 17:15-19:00 WePoS-26.25  
**A Novel EEG Device with Wireless Time-Synchronization System**  
 Yokota, Yusuke (*National Institute of Information and Communications Technology*); Shiga, Nobuyasu (*National Institute of Information and Communications Technology*); Yasuda, Satoshi (*National Institute of Information and Communications Technology*); Naruse, Yasushi\* (*National Institute of Information and Communications Technology*)
- 17:15-19:00 WePoS-26.26  
**Reconstruction of Multiple Cortical Resting State Networks using EEG**  
 Li, Chuang (*University of Oklahoma*); Yuan, Han (*University of Oklahoma*); Shou, Guofa (*University of Oklahoma*); Cha, Yoon-Hee (*Laureate Institute of Brain Research*); Ding, Lei\* (*University of Oklahoma*)
- 17:15-19:00 WePoS-26.27  
**Effects of Surrounding Illumination on Center of Pressure Variability during Walking of Actives Seniors**  
 Choi, Dageong (*Eulji Univ.*); Shin, Young Seok (*Eulji Univ.*); Shin, I Su (*Eulji Univ.*); Kim, Woosop (*The Seongnam Senior Experience Complex, Eulji Univ.*); Chae, Seonah (*Eulji Univ.*); Kim, Ku Ho (*Eulji Univ.*); Jung, Duk Young\* (*The Seongnam Senior Experience Complex, Eulji Univ.*)
- 17:15-19:00 WePoS-26.28  
**Electrochemical Detection of Neuropeptide for Diagnosis of Alzheimer's Disease**  
 Eom, Gayoung (*Korea Advanced Institute of Science and Technology (KAIST)*); Oh, Chaerin (*Korea Advanced Institute of Science and Technology*); Kim, Mi Kyung (*Korea Advanced Institute of Science and Technology (KAIST)*); Kim, Hyojung (*Korea Advanced Institute of Science and Technology*); Lee, Hyunjoo Jenny\* (*Korea Advanced Institute of Science and Technology (KAIST)*)
- 17:15-19:00 WePoS-26.29  
**Investigating the Impact of Hearing Aid Noise Reduction Algorithms on Auditory Brainstem Response to Complex Sounds**  
 Seol, Hye Yoon (*Hearing Research Lab, Samsung Medical Center*); Kang, Soojin (*Univ. of Ulsan*); Park, Suyeon (*Hearing Research Lab, Samsung Medical Center*); Kim, Kyung-Joong (*Sungkyunkwan Univ.*); Hong, Sung Hwa (*Samsung Medical Center*); Moon, Il Joon\* (*Sungkyunkwan Univ. School of Medicine*)
- 17:15-19:00 WePoS-26.30  
**Visualization of Color Features in Whole Slide Images of Histological Sections**  
 Sugiura, Suguru\* (*Shibaura Institute of Technology, Japan*); Takahashi, Masanobu (*Shibaura Institute of Technology*); Nakano, Masayuki (*Shonan Fujisawa Tokushukai Hospital*)

17:15-19:00 WePoS-26.31  
**Electrophysiological Approach to Assess Spectral Resolution using Acoustic Change Complex**  
 Kang, Soojin (*University of Ulsan*); Woo, Jihwan (*University of Ulsan*); Seol, Hye Yoon (*Hearing Research Lab, Samsung Medical Center*); Hong, Sung Hwa (*Samsung Medical Center*); Moon, Il Joon\* (*Sungkyunkwan University School of Medicine*)

17:15-19:00 WePoS-26.32  
**Identifying Patterns of Peripheral Vasoconstriction from the Photoplethysmogram in Sickle Cell Disease**  
 Ji, Yunhua\* (*University of Southern California*); Coates, Thomas (*Children's Hospital Los Angeles, USC Keck School of Medicine*); Chalacheva, Patjanaporn (*University of Southern California*); Khoo, Michael (*University of Southern California*)

17:15-19:00 WePoS-26.33  
**Personal Recognition using Geometric Features in the Phase Space of a Single Lead Electrocardiogram**  
 Kim, Dohyun (*Hanyang University*); Kim, Sun I. (*Osong Medical Innovation foundation*); Lee, Jong-Shill\* (*Hanyang University*); Yook, Sunhyun (*Hanyang University*); Kim, Min Seong (*Hanyang University*); Lee, SeungJae (*Hanyang University*); Kim, Sunae (*Dept. of BioMedical Engineering Hanyang University*)

17:15-19:00 WePoS-26.34  
**Micro-Cast Agarose Devices for the Confinement and Alignment of Cells**  
 Tanaka, Nobuyuki\* (*RIKEN*); Tanaka, Yo (*RIKEN*)

17:15-19:00 WePoS-26.35  
**Proposal of a Zero Point Setting Method for Direct Contact Operation of High-Power Robots**  
 Kawai, Masaki\* (*Meijo Univ.*); Mukai, Toshiharu (*Meijo Univ.*)

17:15-19:00 WePoS-26.36  
**Effects of Shapes and Sizes of Permanent Magnets in Transcranial Static Magnetic Stimulation: A Numerical Simulation Study**  
 Im, Chang-Hwan\* (*Hanyang Univ.*); Lee, Chany (*Hanyang Univ.*); Lee, Sangjun (*Hanyang Univ.*); Park, Jimin (*Hanyang Univ.*)

17:15-19:00 WePoS-26.37  
**Development of Evaluation System for Von Willebrand Factor Degradation by Shear Stress of Mechanical Circulation**  
 Inoue, Yusuke\* (*Institute of Development, Aging and Cancer, Tohoku Univ.*); Hayakawa, Masaki (*Nara Medical Univ.*); Matsumoto, Masanori (*Nara Medical Univ.*); Horiuchi, Hisanori (*Tohoku Univ.*); Shiraishi, Yasuyuki (*Tohoku Univ.*); Yamada, Akihiro (*Tohoku Univ.*); Masato, Karube (*Tohoku Univ.*); Genda, Tatsuya (*Tohoku Univ.*); Yambe, Tomoyuki (*Tohoku Univ.*)

17:15-19:00 WePoS-26.38  
**Modeling of Barlow's Mitral Valve: Annular Dilation and Leaflet Thickening**  
 Jeong, Soohwan (*Sungkyunkwan Univ.*); Hong, Woojae (*Sungkyunkwan Univ.*); Kim, Hyunggun\* (*Sungkyunkwan Univ.*)

17:15-19:00 WePoS-26.39  
**High Rate Pulsatile Stimuli can Enhance the Detection of Sub-Threshold Signals in a Hippocampal CA1 Neuron Network Model**  
 Mori, Ryosuke (*Kanto Gakuin University*); Mino, Hiroyuki\* (*Kanto Gakuin University*); Kawaguchi, Minato (*Kanto Gakuin University*); Durand, Dominique (*Case Western Reserve University*)

17:15-19:00 WePoS-26.40  
**Periodontitis Detection in Panoramic Radiographs using Deep Convolutional Neural Network (DCNN)**  
 Kang, Se Ryong\* (*Seoul National University*); Yi, WonJin (*Seoul National University, School of Dentistry*)

17:15-19:00 WePoS-26.41  
**The use of Third Order Derivative of Photoplethysmography for Better Vascular Age Estimation**  
 Sakata, Kotomi (*Hosei Univ.*); Hirose, Kumi\* (*Hosei Univ.*); Kaseda, Yuto (*Hosei Univ.*); Hama, Kengo (*Hosei Univ.*); Wakabayashi, Satoshi (*Hosei Univ.*); Yana, Kazuo (*Hosei Univ.*)

17:15-19:00 WePoS-26.42  
**Connected Component Thresholding based 3D Segmentation for Coronary Artery Reconstruction from CT Coronary Angiography**  
 Pengdong, Xiao\* (*Natl. Heart Centre Singapore*); Zhang, Jun-Mei (*Natl. Heart Centre*); Baskaran, Lohendran (*Natl. Heart Centre Singapore*); Tan, Ru San (*Natl. Heart Centre*); Ismail, Nasrul (*Natl. Heart Centre Singapore*); Fam, Jiang Ming (*Natl. Heart Centre Singapore*); Chin, Chee Yang (*Natl. Heart Centre Singapore*); Keng, Yung Jih Felix (*Natl. Heart Centre Singapore*); Wong, Aaron Sung Lung (*Natl. Heart Centre Singapore*); Tan, Jack Wei Chieh (*Natl. Heart Centre Singapore*); Yeo, Khung Keong (*Natl. Heart Centre Singapore*); Wong, Philip (*Natl. Heart Centre Singapore*); Chin, Chee Tang (*Natl. Heart Centre Singapore*); Ho, Kay Woon (*Natl. Heart Centre Singapore*); Yap, Jonathan (*Natl. Heart Centre Singapore*); Chua, Terrance (*Natl. Heart Centre*); Koh, Tian Hai (*Natl. Heart Centre Singapore*); Tan, Swee Yaw (*Natl. Heart Centre*); Lim, Soo Teik (*Natl. Heart Centre Singapore*); Zhong, Liang (*Natl. Heart Centre Singapore*)

17:15-19:00 WePoS-26.43  
**Rattractor – Closed-Loop Rat Attractor by Deep Brain Stimulation**  
 Fukayama, Osamu\* (*University of Tokyo*); Sudo, Naoki (*University of Tokyo*); Mabuchi, Kunihiro (*University of Tokyo*); Isoyama, Takashi (*University of Tokyo*)

17:15-19:00 WePoS-26.44  
**New Radiation Dosimetry Application using Perovskite Quantum-Dots: Preliminary Report of Feasibility Study**  
 Kim, Sung-Woo (*Dept. of Radiation Oncology, Asan Medical Center, Seoul, Korea*); Jeong, Chiyoung (*Dept. of Radiation Oncology, Asan Medical Center, Seoul, Korea*); Cho, Byungchul (*Dept. of Radiation Oncology, Asan Medical Center, Ulsan College of Medicine*); Cho, Sangeun (*Division of Physics and Semiconductor Science, Dongguk University*); Im, Hyunsik (*Division of Physics and Semiconductor Science, Dongguk University*); Hwang, Ui-Jung (*Dept. of Radiation Oncology, Chungnam Natl. University Hospital*); Lim, Young Kyung (*Proton Therapy Center, Natl. Cancer Center, Goyang, Gyeonggi, Korea*); Cha, SeungNam (*Dept. of Engineering Science, University of Oxford, United Kingdom*); Kwak, Jungwon\* (*Dept. of Radiation Oncology, Asan Medical Center, Seoul, Korea*)

17:15-19:00 WePoS-26.45  
**Extraction of Sitting Posture Feature by Postural Muscles' EMG**  
 Nakamura, Ayano\* (*Ritsumeikan University*); Okada, Shima (*Ritsumeikan University*); Makikawa, Masaaki (*Ritsumeikan University*); Shiozawa, Narihiro (*Ritsumeikan University*)

17:15-19:00 WePoS-26.46  
**Quantitative Accuracy of Cardiac Photon Counting Tomography**  
 Juntunen, Mikael Asko Kaarlo\* (*University of Oulu*); Inkinen, Satu Irene (*University of Oulu*); Ketola, Juuso Heikki Jalmari (*University of Oulu*); Nieminen, Miika Tapio (*University of Oulu*)

17:15-19:00 WePoS-26.47  
**Evaluation of Longitudinal Wave Velocity in Bone of Diabetic Rats by a Micro-Brillouin Scattering Technique**  
 Yasui, Hirokazu\* (*Doshisha University*); Kawase, Mami (*Doshisha University*); Ichihashi, Hayato (*Doshisha University*); Kuzuhara, Yuki (*Doshisha University*); Ikegawa, Masaya (*Doshisha University*); Matsukawa, Mami (*Doshisha University*)



17:15-19:00	WePoS-26.48	<b>Highly Enhanced Photothermal Bactericidal Activity of rGO/CP750 Assembly</b> Jeong, Geumbi* ( <i>Korea Natl. University of Transportation</i> ); Park, Jongyeap ( <i>Korea Natl. University of Transportation</i> ); Choi, Cheong A. ( <i>Korea Natl. University of Transportation</i> ); Jeong, Do Hyeon ( <i>RAPHAS</i> ); Kim, Jung Dong ( <i>RAPHAS</i> ); Kim, Hong Kee ( <i>RAPHAS</i> ); In, Insik ( <i>Korea Natl. University of Transportation</i> )	17:15-19:00	WePoS-27.6	<b>Cell Polarization Lag with Fast Input Frequency Shift in Microfluidic Dielectrophoresis System</b> Lim, Jongwon* ( <i>Yonsei University</i> )
17:15-19:00	WePoS-26.49	<b>Breast Cancer Histology Classification using Deep Residual Networks</b> Ravi, Kamalakkannan ( <i>Indian Institute of Technology Madras</i> ); Selvaraj, Sakthivel ( <i>Healthcare Technology Innovation Centre, IIT Madras</i> ); J M, Poorneshwaran ( <i>Healthcare Technology Innovation Centre (HTIC), Indian Institute of Technology (IIT) Madras</i> ); Ram, Keerthi ( <i>IIT Madras</i> ); Sivaprakasam, Mohanasankar* ( <i>Indian Institute of Technology Madras</i> )	17:15-19:00	WePoS-27.7	<b>Extremely Imbalanced and Small Minority Data Analysis for Stomach Cancer Patient Detection from Health Record Data</b> Huang, Yukun ( <i>Kyoto University</i> ); Fujiwara, Koichi* ( <i>Kyoto University</i> ); Kano, Manabu ( <i>Kyoto University</i> ); Nishioji, Kenichi ( <i>Kyoto Second Red Cross Hospital</i> )
17:15-19:00	WePoS-26.50	<b>Intraoperative Rapid Quantification of Iron Accumulation in Sentinel Lymph Nodes for Breast Cancer Patients</b> Kuwahata, Akihiro* ( <i>Univ. of Tokyo</i> ); Taruno, Kanae ( <i>Showa Univ. Hospital</i> ); Chikaki, Shinichi ( <i>Univ. of Tokyo</i> ); Kaneko, Miki ( <i>Kyushu Univ.</i> ); Saito, Itsuro ( <i>Univ. of Tokyo</i> ); Yoshibe, Akinobu ( <i>Univ. of Tokyo</i> ); Matsuda, Sachiko ( <i>Keio Univ.</i> ); Kurita, Tomoko ( <i>Nippon Medical School Hospital</i> ); Makita, Masujiro ( <i>Nippon Medical School Musashikosugi Hospital</i> ); Takei, Hiroyuki ( <i>Nippon Medical School Hospital</i> ); Nakamura, Seigo ( <i>Showa Univ. Hospital</i> ); Kusakabe, Moriaki ( <i>Univ. of Tokyo</i> ); Sekino, Masaki ( <i>Univ. of Tokyo</i> )	17:15-19:00	WePoS-27.8	<b>Development of Wearable Device for Muscle Synergy Measurement</b> Jung, Hoeryong* ( <i>Konkuk Univ.</i> ); Lim, JungHwan ( <i>Konkuk Univ.</i> )
17:15-19:00	WePoS-27.9	<b>Lung Tumor 3D Reconstruction from Planar CT Scans and Registration to Micro and Macroscopic Pathology Imaging</b> Reines March, Gabriel* ( <i>NHS Greater Glasgow and Clyde</i> ); Dick, Craig ( <i>NHS Greater Glasgow and Clyde</i> ); Harrow, Stephen ( <i>NHS Greater Glasgow and Clyde</i> ); Ju, Xiangyang ( <i>NHS Greater Glasgow and Clyde</i> ); Marshall, Stephen ( <i>Univ. of Strathclyde</i> )	17:15-19:00	WePoS-27.10	<b>Improving the Interpersonal Relationship of the Elderly with Mild Cognitive Impairment by using Speaker Recognition and Social Networks</b> Tan, Tan-Hsu* ( <i>National Taipei University of Technology</i> ); Liu, Shing-Hong ( <i>Chaoyang University of Technology, Taichung</i> )
<b>WePoS-27: 17:15-19:00 Exhibit Hall 2</b>					
<b>Wednesday 1 Page Research Poster Paper (IV) (Poster Session)</b>					
17:15-19:00	WePoS-27.1	<b>Deep Residual Network based Automatic Image Grading for Diabetic Macular Edema</b> Sukumar, Santhosh Kumar ( <i>Healthcare Tech. Innovation Centre, IIT Madras</i> ); Ravi, Kamalakkannan ( <i>Indian Institute of Tech. Madras</i> ); Mulay, Supriti ( <i>Healthcare Tech. Innovation Centre, IIT Madras</i> ); Ram, Keerthi ( <i>IIT Madras</i> ); Sivaprakasam, Mohanasankar* ( <i>Indian Institute of Tech. Madras</i> )	17:15-19:00	WePoS-27.11	<b>Developing a Functional Capability Model for Patients Undergoing Rehabilitation Therapy</b> Luo, Lincong ( <i>Institute of Automation, Chinese Academy of Sciences</i> ); Peng, Liang ( <i>Institute of Automation, Chinese Academy of Sciences</i> ); Wang, Chen ( <i>Institute of Automation, Chinese Academy of Sciences</i> ); Hou, Zeng-Guang* ( <i>Institute of Automation, Chinese Academy of Sciences</i> ); Wang, Weiqun ( <i>Chinese Academy of Sciences</i> )
17:15-19:00	WePoS-27.2	<b>Effects of Dynamic Emotional Expressions on Face-Related Evoked Potentials</b> Ikai, Marie ( <i>Waseda Univ.</i> ); Kawashima, Issaku ( <i>Faculty of Human Sciences, Waseda Univ.</i> ); Momose, Keiko* ( <i>Waseda Univ.</i> )	17:15-19:00	WePoS-27.12	<b>Evaluation of Blood Phantom for Non-Invasive Blood Glucose Measurement based on Bioelectromagnetic Response</b> Muramatsu, Dairoku* ( <i>Tokyo University of Science</i> ); Kanamori, Nanami ( <i>Tokyo University of Science</i> ); Yamamoto, Takahiko ( <i>Tokyo University of Science</i> )
17:15-19:00	WePoS-27.3	<b>Development of a Mental Care System for Patients Recuperating in a Sterile Room after Hematopoietic Cell Transplantation</b> Joko, Shiho ( <i>Graduate School of Robotics and Design, Osaka Institute of Technology</i> ); Ohsuga, Mieko* ( <i>Osaka Institute of Technology</i> ); Tada, Yuma ( <i>Dept. of Hematology, Osaka International Cancer Institute</i> ); Ito, Kumiko ( <i>Dept. of Rehabilitation, Osaka International Cancer Institute</i> ); Oshima, Kazuya ( <i>Dept. of Rehabilitation, Osaka International Cancer Institute</i> ); Ishihara, Jun ( <i>Dept. of Hematology, Osaka International Cancer Institute</i> )	17:15-19:00	WePoS-27.13	<b>Electrical Conductivity of Gelatin for EEG Phantom</b> McBrearty, Michael* ( <i>DCS Corp.</i> ); Eglund, Ian ( <i>DCS Corp.</i> ); Nonte, Michael ( <i>DCS Corp.</i> ); Hairston, W. David ( <i>U.S. Army Research Lab</i> )
17:15-19:00	WePoS-27.4	<b>A Method of Determining the Pronunciation Quality of Koreans for Speech Rehabilitation</b> Lee, Keonsoo ( <i>Soonchunhyang University</i> ); Nam, Yunyoung* ( <i>Soonchunhyang University</i> )	17:15-19:00	WePoS-27.14	<b>Super-Capacitive Conducting Polymer Electrodes can Control Cell Migration via DC Stimulation</b> Boehler, Christian ( <i>University of Freiburg</i> ); Schopf, Anika ( <i>Albert-Ludwigs Universität Freiburg</i> ); Leal Ordonez, José ( <i>Albert-Ludwigs-University of Freiburg, Dept. of Microsystems Engineering, IMTEK</i> ); Asplund, Maria* ( <i>University of Freiburg</i> )
17:15-19:00	WePoS-27.5	<b>Rapid, On-Spot Analysis of Beta-Lactamase using a Hand-Held Photometer</b> Li, ShiHao* ( <i>NUS</i> )	17:15-19:00	WePoS-27.15	<b>A Multi-Window Majority Voting Strategy to Classify Different Wrist Motion using Forearm's Electromyography Signal</b> Wahid, Md. Ferdous ( <i>Texas A&amp;M Univ. at Qatar</i> ); Tafreshi, Reza* ( <i>Texas A&amp;M Univ. at Qatar</i> ); Langari, Reza ( <i>Texas A&amp;M Univ.</i> )
17:15-19:00	WePoS-27.16	<b>Detection of Functional Connectivity Dynamics in Intrinsic Connectivity Networks from Resting-State EEG</b> Shou, Guofa* ( <i>University of Oklahoma</i> ); Mosconi, Matthew ( <i>University of Kansas</i> ); Ethridge, Lauren ( <i>University of Oklahoma Health Sciences Center, University of Oklahoma</i> ); Sweeney, John ( <i>University of Cincinnati</i> ); Ding, Lei ( <i>University of Oklahoma</i> )			

- 17:15-19:00 WePoS-27.17  
**Preliminary Study on Automated Staging of Cerebral Infarction in Head MR and CT Images using Machine Learning**  
 Kudo, Kohei (*Daido Hospital*); Yamada, Ayumi (*Fujita Health Univ.*); Teramoto, Atsushi\* (*Fujita Health Univ.*); Saito, Kuniaki (*Fujita Health Univ.*); Kamiya, Satoru (*Daido Hospital*); Hirofumi, Anno (*Daido Hospital*); Fujita, Hiroshi (*Gifu Univ.*)
- 17:15-19:00 WePoS-27.18  
**Phasic Electrodermal Responses Evoked by Instantaneous Longitudinal Accelerations for a Self-Driving Car Environment**  
 Laubner, Dominic (*Saarland Univ. of Applied Sciences Germany*); Thinner, David (*Saarland Univ. of Applied Sciences Germany*); Delarber, Philip (*Saarland Univ. of Applied Sciences Germany*); Dauth, Florian (*ZF Friedrichshafen AG*); Bagci, Ilker (*ZF Friedrichshafen AG*); Corona-Strauss, Farah I. (*Saarland Univ.*); Strauss, Daniel J.\* (*Saarland Univ., Medical Faculty*)
- 17:15-19:00 WePoS-27.19  
**Autonomic Nervous System Correlates of Motion Sickness during Highly Automated Driving**  
 Thinner, David (*Saarland Univ. of Applied Sciences Germany*); Laubner, Dominic (*Saarland Univ. of Applied Sciences Germany*); Dauth, Florian (*ZF Friedrichshafen AG*); Bagci, Ilker (*ZF Friedrichshafen AG*); Strauss, Daniel J.\* (*Saarland Univ., Medical Faculty*); Corona-Strauss, Farah I. (*Saarland Univ.*)
- 17:15-19:00 WePoS-27.20  
**In Silico Design of a Mesh-Based Worm-Inspired Organobot**  
 Webster-Wood, Victoria\* (*Carnegie Mellon University*)
- 17:15-19:00 WePoS-27.21  
**The Impact of Exercise Loads on Brain Hemodynamic Response Estimated by Functional Near-Infrared Spectroscopy**  
 Yongrong, Wang (*Chongqing University*); Yun, Zhao (*Chongqing University*); Jiang, Bin (*Chongqing University*); Hou, Wensheng (*Bioengineering Inst of Chongqing University*); Chen, Lin\* (*Chongqing University*)
- 17:15-19:00 WePoS-27.22  
**3D Bioprinting Biomimetic Blood Vessels**  
 Zhou, Xuan\* (*George Washington Univ.*); Esworthy, Timothy (*George Washington Univ.*); Plesniak, Michael (*George Washington Univ.*); Zhang, Lijie Grace (*George Washington Univ.*)
- 17:15-19:00 WePoS-27.23  
**Multi-Class Malignancy Prediction with Oversampling Technique**  
 Yung, Matthew (*DePaul University*); Brown, Eli (*DePaul University*); Rasin, Alexander (*DePaul University*); Furst, Jacob D. (*DePaul University*); Raicu, Daniela S.\* (*DePaul University*)
- 17:15-19:00 WePoS-27.24  
**Anomaly Detection Method for Cystoscopic Diagnosis of Bladder Cancer based on Deep Learning**  
 Hoshino, Yutaro\* (*Toho University*); Sakanashi, Hidenori (*National Institute of Advanced Industrial Science and Technology*); Murakawa, Masahiro (*National Institute of Advanced Industrial Science and Technology*); Nosato, Hirokazu (*National Institute of Advanced Industrial Science and Technology*)
- 17:15-19:00 WePoS-27.25  
**Miniature High Resolution Multi-Axis Force Sensor for Haptic Robotic Surgery**  
 Dai, Yuan\* (*University of California Los Angeles*); Liu, Siyuan (*University of California Los Angeles*); Paydar, Omeed (*University of California Los Angeles*); Abiri, Ahmad (*University of California Los Angeles*); Sun, Songping (*University of California Los Angeles*); Tao, Anna (*University of California Los Angeles*); Dutson, Erik P. (*UCLA*); Grundfest, Warren S. (*UCLA*); Candler, Robert (*University of California Los Angeles*)
- 17:15-19:00 WePoS-27.26  
**Head-Mounted LED with a Magnetic Optical Rotary Connector**  
 Kwon, Ki Yong\* (*Plexon*); Gnade, Andrew (*Plexon Inc.*); Patten, Craig (*Plexon Inc*); Wiggins, Harvey (*Plexon*)
- 17:15-19:00 WePoS-27.27  
**A Greedy Multiple Probe Placement Algorithm for Thermal Ablation Treatment Planning**  
 Tokoutsi, Zoi\* (*Philips Research and RWTH Aachen University*); Grepl, Martin (*RWTH Aachen University*); Veroy, Karen (*RWTH Aachen University*); Baragona, Marco (*Philips Research*); Maessen, Ralph (*Philips Research*)
- 17:15-19:00 WePoS-27.28  
**Motion-Artifact Testing of Electrode Materials for Real-World Neuroimaging**  
 Nonte, Michael\* (*DCS Corp.*); McBrearty, Michael (*DCS Corp.*); Hairston, W. David (*U.S. Army Research Lab*)
- 17:15-19:00 WePoS-27.29  
**An Enhanced Sensitivity Hybrid NW-Planar FET Biosensor**  
 Kalra, Sumeet\* (*Indian Institute of Technology Delhi*); Kumar, Mamidala Jagadesh (*Indian Institute of Technology Delhi*); Dhawan, Anuj (*Indian Institute of Technology Delhi*)
- 17:15-19:00 WePoS-27.30  
**Design of a Brain-Computer Interface for Wheelchair Navigation**  
 Yu, Yih-Choung\* (*Lafayette College*); Smith, Brandon (*Lafayette College*); Du, Hongbo (*Lafayette College*); Gabel, Lisa A. (*Lafayette College*)
- 17:15-19:00 WePoS-27.31  
**Registration of Fluoroscopy and CT Images for Augmented Reality Assisted Percutaneous Cardiac Interventions**  
 Liu, Jun\* (*Weill Cornell Medicine*); Singh, Gurpreet (*Weill Cornell Medicine*); Alaref, Subhi (*Weill Cornell Medicine*); Caprio, Alexandre (*Weill Cornell Medical Center*); Min, James (*Weill Cornell Medical College*); Dunham, Simon (*Weill Cornell Medicine*); Mosadegh, Bobak (*Weill Cornell Medicine*)
- 17:15-19:00 WePoS-27.32  
**Real Time Deformation of Virtual Organs using Finite Element Method**  
 Wang, Kuocheng (*UIUC/HCESC*); Kesavadas, Thenkurussi\* (*UIUC/HCESC*)
- 17:15-19:00 WePoS-27.33  
**Effects of Adaptive Servo-Ventilation on Cardiac Efficiency and Autonomic Balance in CHF-CSR: A Computer Simulation Study**  
 Hu, Wen-Hsin\* (*University of Southern California*); Khoo, Michael (*University of Southern California*)
- 17:15-19:00 WePoS-27.34  
**Assessing Gait Impairment in Parkinson's Disease using a Single Lumbar Sensor**  
 Czech, Matthew\* (*Pfizer*); Demanuele, Charmaine (*University of Southampton*); Zhang, Hao (*Pfizer*); Ho, Bryan (*Tufts Medical Center*); Erb, Kelley (*Pfizer*); Patel, Shyamal (*MC10, Inc.*)
- 17:15-19:00 WePoS-27.35  
**Eye Movements in Schizophrenia during Facial Emotion Recognition using Hidden Markov Models**  
 Kim, Taehyun\* (*Gongju National Hospital*); Noh, Soo Rim (*Chungnam National University*); Kim, Sang-Ho (*Engineering Center of Hyundai Engineering, co*); Kim, Yohan (*Dept. of Psychology, Chungnam National University*)

17:15-19:00	WePoS-27.36	17:15-19:00	WePoS-27.46
<b>Assessment of Patients with Negative Symptoms of Schizophrenia from Movement, and Prosodic and Conversational Speech Signals</b>		<b>Development of a Real-Time and Automatic Pressure Reactivity Index Monitoring System for Diagnosis of Cerebral Autoregulation</b>	
Chakraborty, Debsubhra* ( <i>Institute for Media Innovation, Nanyang Technological Univ.</i> ); Yang, Zixu ( <i>Institute of Mental Health</i> ); Tahir, Yasir ( <i>Institute for Media Innovation, Nanyang Technological Univ.</i> ); Dauwels, Justin ( <i>NTU</i> ); Magnenat-Thalmann, Nadia ( <i>Univ. of Geneva</i> ); Tan, Bing-Leet ( <i>Health and Social Sciences, Singapore Institute of Technology</i> ); Lee, Jimmy ( <i>Institute of Mental Health</i> )		Yang, Seungman ( <i>Seoul National Univ.</i> ); Ko, Sang-Bae ( <i>Seoul National Univ. Hospital</i> ); Cho, Won-Sang ( <i>Seoul National Univ. Hospital</i> ); Kim, Hee Chan* ( <i>Seoul National Univ.</i> )	
17:15-19:00	WePoS-27.37	17:15-19:00	WePoS-27.47
<b>Segmentation and Simplification of Images for Tactile Diagrams</b>		<b>Availability of ICF for Utilization of Health Data</b>	
Ferro, Tyler ( <i>Virginia Commonwealth University</i> ); Pawluk, Dianne* ( <i>Virginia Commonwealth University</i> )		Sakurai, Risa* ( <i>National Cerebral and Cardiovascular Center Research Institute</i> ); Takemura, Tadamasa ( <i>University of Hyogo</i> ); Yamaguchi, Masakazu ( <i>Graduate School of Applied Informatics University of Hyogo, So-Hatsu.net</i> ); Mototani, Takayuki ( <i>University of Hyogo</i> ); Imazu, Takafumi ( <i>Graduate School of Applied Informatics, University of Hyogo</i> ); Asada, Tomomi ( <i>University of Hyogo</i> ); Uemura, Koji ( <i>National Cerebral and Cardiovascular Center Research Institute</i> ); Hiramatsu, Haruhiko ( <i>National Cerebral and Cardiovascular</i> ); Tsuyoshi, Yamamoto ( <i>University of Hyogo Graduate School of Applied Informatics</i> ); Narazaki, Hiroshi ( <i>University of Hyogo</i> ); Shishido, Toshiaki ( <i>National Cerebral and Cardiovascular Center Research Institute</i> )	
17:15-19:00	WePoS-27.38	17:15-19:00	WePoS-27.48
<b>Characterization of Calibration Nonlinearity for a Novel Smart Brace</b>		<b>Effects of EEG-Based Closed-Loop Transcranial Alternating Current Stimulation on Theta Power during a Cognitive Task</b>	
Young, Calvin ( <i>University of Guelph</i> ); Oliver, Michele ( <i>University of Guelph</i> ); Gordon, Karen ( <i>School of Engineering, University of Guelph</i> ); Hamilton-Wright, Andrew* ( <i>Mount Allison University</i> )		Rampersad, Sumientra* ( <i>Northeastern University</i> ); Orhan, Umut ( <i>Northeastern University</i> ); Kos, Maciej Rafal ( <i>Northeastern University</i> ); Mansfield, Karen ( <i>University of Oxford</i> ); Marghi, Yeganeh M. ( <i>Northeastern University</i> ); Sheffield, James ( <i>University of Oxford</i> ); Dillard, Michael ( <i>Honeywell</i> ); Erdogmus, Deniz ( <i>Northeastern University</i> ); Pascual-Leone, Alvaro ( <i>Harvard Medical School</i> ); Yeung, Nick ( <i>University of Oxford</i> ); Mathan, Santosh ( <i>Honeywell Labs</i> ); Cohen Kadosh, Roi ( <i>University of Oxford</i> ); Pavel, Misha ( <i>Northeastern University</i> )	
17:15-19:00	WePoS-27.39	17:15-19:00	WePoS-27.49
<b>An Improvement of Meta-Database on MicroRNA Target Genes for Statistical Integrative Analysis of MicroRNA and mRNA</b>		<b>Pre-Eclampsia Screening in High-Risk Expectant Mothers by Daily Blood Pressure Measurements Modeled with the Viterbi Algorithm</b>	
Matsubara, Megumi* ( <i>Kogakuin University</i> ); Umezu, Tomohiro ( <i>Tokyo Medical University</i> ); Ohyashiki, Junko H. ( <i>Tokyo Medical University</i> ); Fukuoka, Yutaka ( <i>Kogakuin University</i> )		Sohn, Erik* ( <i>Samsung Semiconductor, Inc.</i> ); Altini, Marco ( <i>Bloom Technologies, USA - ACTLab, University of Passau, DE</i> ); Lanssens, Dorien ( <i>ZoL</i> ); Gyselaers, Wilfried ( <i>ZoL</i> ); Penders, Julien ( <i>Bloomlife</i> )	
17:15-19:00	WePoS-27.40	17:15-19:00	WePoS-27.50
<b>Fabrication of Micro-Electrode by Screen-Printing Method and Measurement of Sensing Response</b>		<b>Reliability of Measurement of the Pectoralis Minor Muscle Thickness using Rehabilitative Ultrasound Imaging</b>	
Itagaki, Masayuki* ( <i>Tokyo Univ. of Science</i> ); Hoshi, Yoshinao ( <i>Tokyo Univ. of Science</i> ); Shitanda, Isao ( <i>Tokyo Univ. of Science</i> )		Ji Young, Lim ( <i>Dept. of Physical Therapy, Konyang University College of Medical Sciences</i> ); Se Yeong, Lee ( <i>Dept. of Physical Therapy, Konyang University College of Medical Sciences</i> ); Chang-Hyung, Lee ( <i>Pusan National University Hospital, Rehabilitation Medicine</i> ); Park, Dae-Sung* ( <i>Konyang University, College of Medical Sciences</i> )	
17:15-19:00	WePoS-27.41	WePoS-28: 17:15-19:00	Exhibit Hall 2
<b>How Deep can Hand-Crafted Features Be?</b>		<b>Wednesday 1 Page Research Poster Paper (V) (Poster Session)</b>	
Khosravan, Naji* ( <i>Center for Research in Computer Vision-University of Central Florida</i> ); Richey, Winona L. ( <i>Center for Research in Computer Vision-University of Central Florida</i> ); Bagci, Ulas ( <i>University of Central Florida</i> )		17:15-19:00	WePoS-28.1
17:15-19:00	WePoS-27.42	<b>Flexible Capacitive Force Sensor with High Signal-to-Noise Ratio Enabled by Reduction of Parasitic Capacitance of PDMS</b>	
<b>Calibration of Automated Transcranial Magnetic Stimulation Program</b>		Nagatomo, Tatsuho* ( <i>Keio University</i> ); Miki, Norihisa ( <i>University</i> )	
Westawski, Sean ( <i>Wilkes Univ.</i> ); Sabouni, Abas* ( <i>Wilkes Univ.</i> )		17:15-19:00	WePoS-28.2
17:15-19:00	WePoS-27.43	<b>A Preliminary Evaluation of Acoustic Myography for Real-Time Muscle Force Inference</b>	
<b>Automatic Detection of Tonic-Clonic Seizures in Epilepsy based on Low-Complexity Video Analysis</b>		Hallock, Laura* ( <i>UC Berkeley</i> ); Bajcsy, Ruzena ( <i>UC Berkeley, CITRIS</i> )	
Yazaki, Yoshinao* ( <i>Tokyo Univ. of Agriculture and Technology</i> ); Watanabe, Satsuki ( <i>SAITama Medical Univ. Hospital</i> ); Tanaka, Yuichi ( <i>Tokyo Univ. of Agriculture and Technology</i> )		17:15-19:00	WePoS-28.3
17:15-19:00	WePoS-27.44	<b>Feasibility of Noninvasive Real-Time Monitoring for Cardiac Output using Fast Electrical Impedance Tomography</b>	
<b>Robust Decoding Animal Forelimb Movement using Kernel Sliced Inverse Regression with Multimodal Neural Signals</b>		Jang, Geuk Young ( <i>Dept. of BioMedical Engineering, Graduate School, Kyung Hee University</i> ); Jeong, You Jeong ( <i>Kyung Hee University</i> ); Oh, Tong In* ( <i>Kyung Hee University</i> ); Woo, Eung Je ( <i>Kyung Hee University</i> )	
Yeh, Chia-Jung ( <i>National Yang-Ming University</i> ); Chou, Yi-Ting ( <i>National Yang-Ming University</i> ); Yang, Shih-Hung ( <i>Feng Chia University</i> ); Lo, Yu-Chun ( <i>Taipei Medical University</i> ); Chen, You-Yin* ( <i>National Chiao-Tung University</i> )			
17:15-19:00	WePoS-27.45		
<b>Flu-Related Tweet Classification using FastText</b>			
Alessa, Ali (1989); Faezipour, Miad* ( <i>University of Bridgeport</i> ); Alhassan, Zakhriya ( <i>Durham University</i> )			

- 17:15-19:00 WePoS-28.4  
**A Rapid Cryptosporidium Biosensor based on the Electrochemical Detection of Polyguanine**  
 Nze, Ugochukwu\* (*University of Utah*); Lambert, Chris (*University of Utah*); Gale, Bruce Kent (*University of Utah*); Sant, Himanshu Jayant (*University of Utah*)
- 17:15-19:00 WePoS-28.5  
**Effects of Aneurysms on the Pressure Wave Propagation in the Artificial Artery Model**  
 Fumiaki, Iwase\* (*Doshisha University*); Shinya, Shimada (*Doshisha University*); Natsuko, Itai (*Doshisha*); Lagr  e, Pierre-Yves (*UPMC*); Matsukawa, Mami (*Doshisha University*)
- 17:15-19:00 WePoS-28.6  
**Estimation of Brain Activity using Slorete and Evaluation of Emotion by Machine Learning**  
 Mineyama, Ryo (*Doshisha University*); Okuya, Teruhisa (*Panasonic Corp., Eco Solutions Company*); Iwakawa, Mikio (*Panasonic Corp., Eco Solutions Company*); Sasabe, Kohji (*Panasonic Corp.*); Uegaki, Yuriko (*Panasonic Corp., Eco Solutions Company*); Watanabe, Yoshiaki (*Doshisha University*); Akiyama, Iwaki\* (*Doshisha University*)
- 17:15-19:00 WePoS-28.7  
**A Neural Network Model based on the Turtle Visual System**  
 Anderson, Ronald\* (*Texas Tech University*); Ghosh, Bijoy (*Texas Tech University*)
- 17:15-19:00 WePoS-28.8  
**Development of a Handheld Medical Device for Saliva Screening**  
 Karwa, Talha\* (*California State University, Long Beach*); Mendez, Sergio (*California State University, Long Beach*); Milo, Austin (*Author*); Bernal, Marisol (*California State University Long Beach*); Tohmeh, Annas (*CSULB*)
- 17:15-19:00 WePoS-28.9  
**Blood Plasma Separation using a 3D Printed Disc for POC Test**  
 Chung, Kwang Hyo\* (*Electronics and Telecommunications Research Institute*); Kim, Jin Tae (*Electronics and Telecommunications Research Institute*); Ahn, Chang-Geun (*Electronics and Telecommunications Research Institute*); Jeong, Eunju (*Electronics and Telecommunications Research Institute*); Noh, Hyung Wook (*Electronics and Telecommunications Research Institute*); Kim, Bong Kyu (*Electronics and Telecommunications Research Institute*)
- 17:15-19:00 WePoS-28.10  
**Tuning-Free Bayesian Inference of Functional Brain Networks**  
 Yu, Hang\* (*Nanyang Technological University*); Wu, Songwei (*Nanyang Technological University*); Dauwels, Justin (*NTU*)
- 17:15-19:00 WePoS-28.11  
**Effect of Rolling Exercise using Vibration Ball on Back for Viscoelastic Properties of Back in Healthy Adult; Preliminary Study**  
 Lee, Seul (*Dept. of Physical Therapy, Konyang Univ.*); Lee, Jong Yeop (*Dept. of Physical Therapy, Konyang Univ.*); Lee, Chung Jae (*Dept. of Physical Therapy, Konyang Univ.*); Lee, Seong Joo (*Graduate School of Physical Therapy, Konyang Univ.*); Park, Dae-Sung\* (*Konyang Univ., College of Medical Sciences*)
- 17:15-19:00 WePoS-28.12  
**Correlation of Subjective Motion Sickness Level with EEG Power Bands and Phase Amplitude Coupling**  
 Sch  fer, Patrick Johannes (*Systems Neuroscience and Neurotechnology Unit, Neurocenter, Faculty of Medicine, Saarland Univ., Homburg/Saar, Germany*); Delarber, Philip (*Saarland Univ. of Applied Sciences Germany*); Laubner, Dominic (*Saarland Univ. of Applied Sciences Germany*); Thinnies, David (*Saarland Univ. of Applied Sciences Germany*); Flotho, Philipp (*Saarland Univ. Faculty of Medicine*); Dauth, Florian (*ZF Friedrichshafen AG*); Bagci, Ilker (*ZF Friedrichshafen AG*); Corona-Strauss, Farah I. (*Saarland Univ.*); Strauss, Daniel J.\* (*Saarland Univ., Medical Faculty*)
- 17:15-19:00 WePoS-28.13  
**Utilize Round-Robin based Prediction Model to Distinguish Prognostic Grade Scale in Adenocarcinoma from Pulmonary Computed Tomographic Images**  
 Chen, Bo-Wei\* (*Natl. Taiwan Univ.*); Chang, Joseph (*Natl. Taiwan Univ.*); Chen, Li Wei (*Natl. Taiwan Univ.*); Yang, Shun-Mao (*Natl. Taiwan Univ. Hospital and Natl. Taiwan Univ. College of Medicine*); Wang, Hao-Jen (*Natl. Taiwan Univ.*); Lin, Mong-Wei (*Natl. Taiwan Univ. Hospital and Natl. Taiwan Univ. College of Medicine*); Chen, Leng-Jung (*Natl. Taiwan Univ.*); Hsu, Fu-Sheng (*Natl. Taiwan Univ.*); Li, Chia-Chen (*Natl. Taiwan Univ.*); Chen, Chung-Ming (*Natl. Taiwan Univ.*)
- 17:15-19:00 WePoS-28.14  
**Neuromotor Incoordination Index as a Measure of Physical and Cognitive Fatigue**  
 Palmer, Jeffrey (*MIT Lincoln Lab*); Williamson, James\* (*MIT Lincoln Lab*); Lammert, Adam (*MIT Lincoln Lab*); McKindles, Ryan (*MIT Lincoln Lab*); Yu, Bea (*MIT Lincoln Lab*); Nolan, Michael (*MIT Institute for Medical Engineering and Science*); Perricone, Joey (*MIT Lincoln Lab*); Quatieri, Thomas (*MIT Lincoln Lab*)
- 17:15-19:00 WePoS-28.15  
**P3-Like Auditory Event-Related Potentials with Oddball Paradigm under Various Auditory Stimuli**  
 Lee, Jee Won\* (*Ewha Womans Univ.*); Lee, Youjin (*Ewha Womans Univ.*); Cho, Yoon Kyung (*Ewha Womans Univ.*); Kim, Soonyoung (*Ewha Womans Univ.*); Sung, Jee Eun (*Dept. of Communication Disorders, Graduate School, Ewha Womans Univ.*); Jun, Sang Beom (*Ewha Womans Univ.*)
- 17:15-19:00 WePoS-28.16  
**Effect of Ph on the Activity of Tissue Plasminogen Activator**  
 Labra-Odde, Isidora (*University of Auckland*); Dodd, Joanna R (*University of Auckland*); Suresh, Vinod\* (*University of Auckland*); Birch, Nigel (*University of Auckland*)
- 17:15-19:00 WePoS-28.17  
**Optimized Cavity-Shaped Magnet of Handheld Magnetic Probe for Identifying Sentinel Lymph Nodes**  
 Kuwahata, Akihiro\* (*Univ. of Tokyo*); Kusakabe, Moriaki (*Univ. of Tokyo*); Chikaki, Shinichi (*Univ. of Tokyo*); Saito, Itsuro (*Univ. of Tokyo*); Sekino, Masaki (*Univ. of Tokyo*)
- 17:15-19:00 WePoS-28.18  
**Precision of Peak Intervals between R Wave and Pulse Wave on Postural Changes**  
 Tagawa, Munenori\* (*Osaka Electro-Communication University*); Fujie, Tatsuro (*Osaka Electro-Communication University*); Nakamura, Hideo (*Osaka Electro-Communication University*)
- 17:15-19:00 WePoS-28.19  
**A Neuronal Network Approach to Analyze Cooling Effect against Epileptic Discharges**  
 Regonia, Paul Rossener (*Nara Institute of Science and Technology*); Kubo, Takatomi\* (*Nara Institute of Science and Technology*); Soriano, Jaymar (*Nara Institute of Science and Technology*); Ikeda, Kazushi (*Nara Institute of Science and Technology*)
- 17:15-19:00 WePoS-28.20  
**Diabetic Retinopathy Risk Prediction Model based on Self-Organizing Maps and Cox Hazard Regression**  
 Athanasiou, Maria (*National Technical University of Athens*); Zarkogianni, Konstantia (*National Technical University of Athens*); Thanopoulou, Anastasia (*University of Athens*); Nikita, Konstantina\* (*National Technical University of Athens*)
- 17:15-19:00 WePoS-28.21  
**Design of a Haptic Force Feedback System for Pinch**  
 Barry, Alexander\* (*Shirley Ryan AbilityLab*); Ghassemi, Mohammad (*North Carolina State Univ.*); Vaidya, Mukta (*Univ. of Chicago*); Zheng, Shuyue (*Northwestern Univ.*); Wang, Po T. (*Univ. of California Irvine*); Do, An H. (*Univ. of California Irvine*); Kamper, Derek (*North Carolina State Univ.*); Slutzky, Marc (*Northwestern Univ.*)

- 17:15-19:00 WePoS-28.22  
**The Design of a Serious Game for Evaluation of Cognition Ability and Instrumental Activities of Daily Living in Elderly People**  
Hou, Chun-Ju (*Southern Taiwan University of Science and Technology*); Huang, Min-Wei (*National Cheng Kung University*); Huang, Shuo Bin (*Dept. of Electrical Engineering, Southern Taiwan University of Science and Technology*); Wang, You-Yu (*Dept. of Psychiatry, Chiayi Branch Taichung Veterans General Hospital*); Cheng, Li-Shun (*Dept. of Psychiatry, Chiayi Branch Taichung Veterans General Hospital*); Chen, Yen-Ting\* (*Southern Taiwan University of Science and Technology*)
- 17:15-19:00 WePoS-28.23  
**Autoregressive Model in LP (p≤1) Space by LAPPS for EEG Analysis**  
Bore, Joyce Chelangat (*Univ. of Electronic, Science and Technology of China (UESTC), China*); Yi, Chanlin (*Univ. of Electronic Science and Technology of China*); Li, Peiyang (*Univ. of Electronic Science and Technology of China*); Harmah, Dennis Joe (*UESTC, China*); Zhang, Yi (*Univ. of Electronic Science and Technology of China*); Yao, Dezhong (*Univ. of Electronic Science and Technology of China*); Xu, Peng\* (*Univ. of Electronic, Science and Technology of China (UESTC), China*)
- 17:15-19:00 WePoS-28.24  
**Statistical Properties of Neural Spike Trains in Response to Rate-Amplitude-Modulated Pulsatile Electric Stimuli in an Auditory Nerve Fiber Model**  
Iwasaki, Mako (*Kanto Gakuin University*); Mino, Hiroyuki\* (*Kanto Gakuin University*)
- 17:15-19:00 WePoS-28.25  
**Study on Forceps-Mounted Measurement Device to Estimate Elasticity of Organ**  
Iwamoto, Yuki (*Teikyo Heisei Univ.*); Kamei, Shion (*Teikyo Heisei Univ.*); Kim, Daeyoung\* (*Teikyo Heisei Univ.*); Hara, Kazuaki (*Univ. of Tokyo*); Kobayashi, Etsuko (*Tokyo Women's Medical Univ.*); Sakuma, Ichiro (*Univ. of Tokyo*)
- 17:15-19:00 WePoS-28.26  
**Influence of Medical Devices on Forceps-Mounted Measurement System**  
Kamei, Shion (*Teikyo Heisei Univ.*); Iwamoto, Yuki (*Teikyo Heisei Univ.*); Kim, Daeyoung\* (*Teikyo Heisei Univ.*); Hara, Kazuaki (*Univ. of Tokyo*); Kobayashi, Etsuko (*Tokyo Women's Medical Univ.*); Sakuma, Ichiro (*Univ. of Tokyo*)
- 17:15-19:00 WePoS-28.27  
**Internal Pressure and Stress Changes of Pancreas While being Compressed**  
Kuroda, Kazusa (*Teikyo Heisei University*); Kim, Daeyoung\* (*Teikyo Heisei University*); Kobayashi, Etsuko (*Tokyo Women's Medical University*); Sakuma, Ichiro (*University of Tokyo*); Asano, Takehide (*Clinical Research Center, National Hospital Organization Chiba-East-Hospital*)
- 17:15-19:00 WePoS-28.28  
**An Elasticity-Control of Tumor Model using Agar**  
Kobayashi, Ryuki (*Teikyo Heisei University*); Kim, Daeyoung\* (*Teikyo Heisei University*); Shan, Xiang (*HeFei University of Technology*); Li, Bing Nan (*Hefei University of Technology*); Kobayashi, Etsuko (*Tokyo Women's Medical University*); Sakuma, Ichiro (*University of Tokyo*)
- 17:15-19:00 WePoS-28.29  
**Longitudinal Registration of Breast DCE-MRI: A Point Set Approach**  
Shen, I-Ting\* (*National Taiwan University*); Yang, Ai-Su (*National Taiwan University*); Chang, Yeun-Chung (*Depts. of Medical Imaging National Taiwan University Hospital and College of Medicine*); Chen, Chung-Ming (*National Taiwan University*)
- 17:15-19:00 WePoS-28.30  
**The Heart Rate Variability Extracted from Electrocardiogram as Compared with Photoplethysmogram in Major Depressive Patients**  
Hou, Chun-Ju (*Southern Taiwan Univ. of Science and Technology*); Huang, Min-Wei (*National Cheng Kung Univ.*); Wu, Yu Fang (*Dept. of Electrical Engineering, Southern Taiwan Univ. of Science and Technology*); Hu, Ling-Chen (*Fooyin Univ.*); Chen, Yen-Ting\* (*Southern Taiwan Univ. of Science and Technology*)
- 17:15-19:00 WePoS-28.31  
**Enhancing EHR-Based Clinical Decision Support Effectiveness using A/B Testing**  
Wang, Karen (*University of Texas Southwestern Medical Center*); Kannan, Vaishnavi\* (*University of Texas Southwestern Medical Center*); Burton, Michael (*University of Texas Southwestern Medical Center*); Willett, DuWayne (*University of Texas Southwestern Medical Center*); Basit, Mujeeb (*UT Southwestern*)
- 17:15-19:00 WePoS-28.32  
**Differences between Musculoskeletal Simulation and Surface EMG on Time-Frequency Coherence of Elbow Muscles during Flexion and Extension Movements on Healthy Children**  
Perez-Sanpablo, Alberto-Isaac (*CINVESTAV/INR*); Romero-Avila, Elisa (*RWTH-Aachen University*); Meneses-Peñaloza, Alicia (*INR*); Ibarra-Zannatha, Juan-Manuel (*CINVESTAV*); Disselhorst-Klug, Catherine (*RWTH-Aachen University*); Gonzalez, Mendoza\* (*CINVESTAV, Mexico*)
- 17:15-19:00 WePoS-28.33  
**NUCoach: A Modular Coaching Platform for Health and Data Scientists**  
Khaghani-Far, Iman\* (*Northeastern University*); Li, Xuan (*Northeastern University*); Kos, Maciej Rafal (*Northeastern University*); Gordon, Christine (*Northeastern University*); Williams, Haleigh (*Northeastern University*); Pavel, Misha (*Northeastern University*); Jimison, Holly (*Northeastern University*)
- 17:15-19:00 WePoS-28.34  
**Regulation of Brain Immune Cell Responses by Electrical Stimulation**  
Park, Eun Young (*Korea Advanced Institute of Science and Technology*); Shin, Jennifer Hyunjong\* (*KAIST*)
- 17:15-19:00 WePoS-28.35  
**Topic Modeling for Application to CDSS**  
Sung, David (*Yonsei University Health System*); Chang, Hyuk-Jae (*Yonsei University College of Medicine*); Sung, Jimin\* (*Yonsei University Health System*)
- 17:15-19:00 WePoS-28.36  
**Pulse Rate Variability Analysis in Fingertip and Wrist Photoplethysmography**  
Kais, Gadhoudi\* (*University of California San Francisco*); Keenan, Kevin (*University of California San Francisco*); Meisel, Karl (*University of California San Francisco*); Colorado, Rene (*University of California San Francisco*); Hu, Xiao (*University of California, San Francisco*)
- 17:15-19:00 WePoS-28.37  
**Recognition of Unbalanced Human Gait by using RNN-LSTM Algorithm**  
Lee, Deok-Won (*Yonsei Univ.*); Lee, Sanghyub (*Gwangju Institute of Science and Technology*); Jun, Kooksung (*Gwangju Institute of Science and Technology*); Kim, Mun Sang\* (*Gwangju Institute of Science and Technology*)
- 17:15-19:00 WePoS-28.38  
**Design Optimization of a Stentless Mitral Valve in Terms of Hydrodynamic Performance**  
Takada, Jumpei (*Waseda University*); Kumazawa, Ryo (*Waseda University*); Umezu, Mitsuo (*Waseda University Graduate School*); Iwasaki, Kiyotaka\* (*Waseda University*)

17:15-19:00 WePoS-28.39  
**Estimation of Signal Source Position Inside the Human Muscle during Isometric Contraction using Switching Voltage Divider**  
 Sakae, Yusuke\* (*Toray Engineering Co., Ltd.*); Inaka, Chisa (*Toray Engineering Co., Ltd.*); Shiozawa, Naruhiro (*Ritsumeikan University*); Okada, Shima (*Ritsumeikan University*); Makikawa, Masaaki (*Ritsumeikan University*)

17:15-19:00 WePoS-28.40  
**Evaluation on the Microneedle Array as Biopotential Electrodes**  
 Hong, Young-Jun\* (*Samsung Electronics Co., Ltd.*); Ebejer, Neil (*IBM Research - Zurich*); Drechsler, Ute (*IBM Research - Zurich*); Ruch, Patrick (*IBM Research - Zurich*); Michel, Bruno (*IBM Research - Zurich*)

17:15-19:00 WePoS-28.41  
**An Adaptive Rehabilitation Intervention to Train Bimanual Coordination in TBI**  
 Hoxha, Armand (*Kessler Foundation*); Yue, Guang (*Kessler Foundation*); Saleh, Soha\* (*Kessler Foundation*)

17:15-19:00 WePoS-28.42  
**Estimating Voluntary Muscle Activity during Constant and Time-Varying Electrical Stimulation**  
 Rolo, Vitor\* (*Case Western Reserve University*); Tran, Hieu (*University of Arizona*); Makowski, Nathaniel (*MetroHealth Medical Center*); Crago, Patrick (*Case Western Reserve University*); Fu, Michael J (*Case Western Reserve University*)

17:15-19:00 WePoS-28.43  
**Training and Testing of Basic Gestures using Hidden Markov Model (HMM)**  
 Contreras Alejo, Diana Alejandra\* (*Instituto Politécnico Nacional (IPN)*); Gallegos Funes, Francisco Javier (*Instituto Politécnico Nacional (IPN)*)

17:15-19:00 WePoS-28.44  
**Applied Electric Fields Promote Human Neural Precursor Migration in a Substrate Dependent Manner**  
 Ahmed, Umalkhair\* (*University of Toronto*); Popovic, Milos R. (*University of Toronto*); Ahlfors, Jan-Eric (*New World Labs*); Morshead, Cindi (*University of Toronto*)

17:15-19:00 WePoS-28.45  
**Social Media as a Networking Tool for Engineering Students**  
 Ansari, Darius (*University of Illinois at Chicago*); Esmailbeigi, Hananeh\* (*University of Illinois at Chicago (UIC)*)

17:15-19:00 WePoS-28.46  
**K-Nearest-Neighbor for Linking Clinical Data to Corneal Shape**  
 Bouazizi, Hala\* (*University of Montreal*); Brunette, Isabelle (*University of Montreal*); Meunier, Jean (*Université de Montreal*)

17:15-19:00 WePoS-28.47  
**Spatial Auditory Attention Decoded by Means of Sustained Electromyographic Postauricular Muscle Activity**  
 Corona-Strauss, Farah I.\* (*Saarland Univ.*); Schroeder, Andreas (*Saarland Univ. of Applied Sciences*); Hannemann, Ronny (*Siemens Audiologische Technik*); Hackley, Steven Allen (*Univ. of Missouri, Columbia*); Strauss, Daniel J. (*Saarland Univ., Medical Faculty*)

17:15-19:00 WePoS-28.48  
**Wearable Ultrasound Sensor for Detection of Embolic Events**  
 Celinskis, Dmitrijs\* (*Brown Univ.*); Nurmikko, Arto (*Brown Univ.*)

17:15-19:00 WePoS-28.49  
**Modulation of Brain-Based Value Signals using Electrical Stimulation**  
 Santacruz, Samantha R.\* (*University of California, Berkeley*); Zippi, Ellen L. (*University of California, Berkeley*); Carmena, Jose M. (*University of California, Berkeley*)

17:15-19:00 WePoS-28.50  
**Evaluation of Language Proficiency based on EEG Response**  
 Ihara, Aya\* (*National Institute of Information and Communications Technology*); Matsumoto, Atsushi (*National Institute of Information and Communications Technology*); Katayama, Jun'ichi (*Kwansei Gakuin University*); Ojima, Shiro (*Yokohama National University*); Naruse, Yasushi (*National Institute of Information and Communications Technology*)

WePoS-29: 17:15-19:00 Exhibit Hall 2  
**Wednesday 1 Page Research Poster Paper (VI)** (Poster Session)

17:15-19:00 WePoS-29.1  
**Non-Invasive Acoustic Device for Monitoring Low Pulsatility Blood Pressure Patients with Rotary Blood Pumps**  
 Rao, Adam\* (*Univ. of California - San Francisco*); Williams, Ryan (*Univ. of California - Berkeley*); Klein, Liviu (*Univ. of California, San Francisco*); Wieselthaler, Georg (*Univ. of California - San Francisco*); Roy, Shuvo (*Univ. of California at San Francisco*)

17:15-19:00 WePoS-29.2  
**Wireless Ir/IrOx Ph Sensor for Quantitative Dental Caries Detection**  
 Tabata, Miyuki\* (*Tokyo Medical and Dental University*); Miyahara, Yuji (*Tokyo Medical and Dental University, Institute of Biomaterials and Bioengineering*)

17:15-19:00 WePoS-29.3  
**A 15 Mbps Battery-Less Data Transmission Demonstration for Wireless Neural Recording System of BMI Applications**  
 Ishizaki, Haruya (*Medical School of Osaka Univ.*); Ando, Hiroshi\* (*NICT*); Takizawa, Kenichi (*NICT*); Suzuki, Takafumi (*National Institute of Information and Communications Technology*)

17:15-19:00 WePoS-29.4  
**Regression based Automated Scoring Technique of Mild Cognitive Impairment (MCI) Severity using Single Channel EEG Measures with Auditory Stimulus**  
 Khatun, Saleha\* (*Univ. of Memphis*); Morshed, Bashir (*Univ. of Memphis*); Bidelman, Gavin M. (*Univ. of Memphis*)

17:15-19:00 WePoS-29.5  
**Development of a Tissue-Engineered Blood Vessel based Microphysiological System**  
 Chen, Zaozao\* (*Southeast Univ.*); Leong, Kam (*Columbia Univ.*)

17:15-19:00 WePoS-29.6  
**Biomechanical Analysis of Toe Extension after a Novel Tendon Transfer Surgery for Implantable Passive Mechanisms**  
 Le, Anthony\* (*Oregon State Univ.*); Balasubramanian, Ravi (*Oregon State Univ.*); Sweeney, James (*Oregon State Univ.*)

17:15-19:00 WePoS-29.7  
**Deep Learning Framework for Predicting Food Allergy from Longitudinal Microbiome Taxonomic Profiles**  
 Metwally, Ahmed\* (*University of Illinois at Chicago*); Dai, Yang (*University of Illinois at Chicago*)

17:15-19:00 WePoS-29.8  
**Fixed-Volume System for Automation of Urine Measurements**  
 Xu, Colin (*University of Illinois at Chicago*); Xie, Katherine\* (*University of Illinois at Chicago*); Berrum, Ernesto (*University of Illinois at Chicago*); Ansari, Darius (*University of Illinois at Chicago*); Sofer, Laurel (*University of Illinois at Chicago*); Niederberger, Craig (*University of Illinois at Chicago*)



- 17:15-19:00 WePoS-29.9  
**Information Acquisition from a Communication Robot in Older Persons with Cognitive Impairments**  
 Nakayama, Yuri\* (*Ochanomizu University*); Saito, Daisuke (*Tokyo Denki University*); Nishiura, Yuko (*Research Institute of National Rehabilitation Center for Persons with Disabilities*); Mizuno, Jumpei (*National Rehabilitation Center for Persons with Disabilities*); Ohnaka, Shinichi (*NEC Corp.*); Watabe, Koichi (*Research Institute of National Rehabilitation Center for Persons with Disabilities*); Sadohara, Ken (*National Institute of Advanced Industrial Science and Technology*); Hamada, Hiromi (*France Bed Co., Ltd.*); Nihei, Misato (*University of Tokyo*); Ohta, Yuji (*Graduate School of Humanities and Sciences, Ochanomizu University*); Inoue, Takenobu (*Research Institute of National Rehabilitation Center for Persons with Disabilities*)
- 17:15-19:00 WePoS-29.10  
**Depth Extraction System for Earlobe Crease to Support Diagnosis of Arteriosclerosis**  
 Hirano, Harutoyo\* (*Shizuoka Univ.*); Uematsu, Daichi (*Shizuoka Univ.*); Futagawa, Masato (*Shizuoka Univ.*); Tsuji, Toshio (*Hiroshima Univ.*); Hashimoto, Haruki (*Graduate School of BioMedical and Health Sciences, Hiroshima Univ.*); Kishimoto, Shinji (*Hiroshima Univ.*); Oda, Nozomu (*Hiroshima Univ.*); Kajikawa, Masato (*Hiroshima Univ.*); Maruhashi, Tatsuya (*Hiroshima Univ.*); Higashi, Yukihito (*Hiroshima Univ.*)
- 17:15-19:00 WePoS-29.11  
**EEG Hyperscanning to Investigate Compassion and Altruistic Behavior**  
 Toppi, Jlenia (*University of Rome "Sapienza"*); Ciaramidaro, Angela (*Dept. of Child and Adolescent Psychiatry, Psychosomatics, and Psychotherapy, Johann Wolfgang Goethe University*); Freitag, Christine M. (*Dept. of Child and Adolescent Psychiatry, Psychosomatics, and Psychotherapy, Goethe-University, Frankfurt*); Siniatchkin, Michael (*University of Kiel*); Astolfi, Laura\* (*University of Rome Sapienza*)
- 17:15-19:00 WePoS-29.12  
**Hydrogel-Mediated Electrodeposition of Polymers with Incorporated Molecular Gradients for Biomedical Applications**  
 Mirab, Fereshhtehsadat (*University of Houston*); Majd, Sheereen\* (*University of Houston*)
- 17:15-19:00 WePoS-29.13  
**Predicting Proteins with Adverse Effect by Machine Learning**  
 Huang, Chih-Han\* (*National Taiwan University*); Hwang, Ming-Jing (*Academia Sinica*)
- 17:15-19:00 WePoS-29.14  
**Evaluation of Endoscopic Intestinal Suture Training by Time-Series Comparison with the Expert Model**  
 Aoki, Seiya\* (*Chiba Univ.*); Yamaguchi, Tomoko (*Chiba Univ.*); Uemura, Munenori (*Kyushu Univ.*); Hashizume, Makoto (*Kyushu Univ.*); Nakamura, Ryoichi (*Chiba Univ.*)
- 17:15-19:00 WePoS-29.15  
**Learning from EHR to Predict ICU Mortality and Resuscitation**  
 Villaroman, Andrea\* (*University of California, San Francisco*); Singh, Narinder (*University of California, Berkeley*); Hu, Xiao (*University of California, San Francisco*)
- 17:15-19:00 WePoS-29.16  
**Tactile Sensitivity to High-Frequency Vibratory Patterns in the Palm**  
 Park, Jaeyoung\* (*Korea Institute of Science and Technology*); Son, Bukun (*Korea Institute of Science and Technology*); Oh, Yonghwan (*Korea Institute of Science and Technology*)
- 17:15-19:00 WePoS-29.17  
**A Methodology for Classification of Activities of Daily Living based on Anatomical Data Obtained using an Infrared Camera**  
 Sharif, Hajar (*University of Illinois at Urbana-Champaign*); Chembrammel, Pramod (*University of Illinois at Urbana-Champaign*); Kesavadas, Thenkurussi\* (*UIUC/HCESC*)
- 17:15-19:00 WePoS-29.18  
**Improving and Automating Sleep Study Interpretation**  
 Leary, Eileen B (*Stanford University*); Olesen, Alexander Neergaard\* (*Technical University of Denmark*); Seeger-Zybok, Rebekka K (*Stanford University*); Sorensen, Helge B D (*Technical University of Denmark*); Jennum, Poul (*University of Copenhagen, Demnar*); Mignot, Emmanuel (*Stanford University*)
- 17:15-19:00 WePoS-29.19  
**Influence of the Oxygen Flow Rate on the pH Response of Reactively Sputter Deposited Iridium Oxide Films**  
 Barz, Falk\* (*University of Freiburg*); Ruther, Patrick (*University of Freiburg*); Asplund, Maria (*University of Freiburg*)
- 17:15-19:00 WePoS-29.20  
**Predicting Outcomes from Ischemic Stroke using Multi-Layer Perceptron Model and Stroke Registry Data**  
 Park, Jeongho (*Yonsei University College of Medicine*); Chang, Hyuk-Jae (*Yonsei University College of Medicine*); Nam, Hyosuk (*Dept. of Neurology, Yonsei University College of Medicine*); Park, Eunjeong\* (*Cardiovascular Research Institute, Yonsei University College of Medicine*)
- 17:15-19:00 WePoS-29.21  
**Rupture Prediction of ICA and MCA Cerebral Aneurysms Combining Hemodynamic, Morphology and Clinical Information**  
 Ono, Hiroshi\* (*Tokyo Univ. of Science*); Takao, Hiroyuki (*Jikei Univ. School of Medicine*); Suzuki, Takashi (*Tokyo Univ. of Science*); Fujimura, Soichiro (*Tokyo Univ. of Science*); Uchiyama, Yuya (*Tokyo Univ. of Science*); Tanaka, Kazutoshi (*Tokyo Univ. of Science*); Otani, Katharina (*Siemens Healthcare K.K.*); Ishibashi, Toshihiro (*Jikei Univ. School of Medicine, Dept. of Neurosurgery*); Fukudome, Koji (*Tokyo Univ. of Science*); Murayama, Yuichi (*Jikei Univ. School of Medicine*); Yamamoto, Makoto (*Tokyo Univ. of Science*)

Thursday, 19 July 2018

ThAT1: 08:00-09:30 Meeting Room 311  
**Neural Signal Processing (I) (Theme 6)** (Oral Session)  
**Chair:** Al-Jumaily, Adel (*University of Technology Sydney*)

08:00-08:15 ThAT1.1  
**Single-Trial Detection of Semantic Anomalies from EEG during Listening to Spoken Sentences**  
 Tanaka, Hiroki\* (*Nara Institute of Science and Technology*); Watanabe, Hiroki (*Nara Institute of Science and Technology*); Maki, Hayato (*Nara Institute of Science and Technology*); Sakriani, Sakti (*Nara Institute of Science and Technology*); Satoshi, Nakamura (*Nara Institute of Science and Technology*)

08:15-08:30 ThAT1.2  
**Single Neuron Firing Rate Statistics in Motor Cortex during Execution and Observation of Movement**  
 Jiang, Xiyuan (*University of California Los Angeles*); Ryu, Stephen (*Stanford University*); Shenoy, Krishna V. (*Stanford University*); Kao, Jonathan\* (*Stanford University*)

08:30-08:45 ThAT1.3  
**Individual Classification of Single Trial EEG Traces to Discriminate Brain Responses to Speech with Different Signal-to-Noise Ratios**  
 Fuentes Cabrera, Alvaro Rodrigo\* (*UNEEG Medical*); Petersen, Eline Borch (*Technical University of Denmark*); Graversen, Carina (*Eriksholm Research Centre*); Theil Sørensen, Allan (*UNEEG Medical*); Lunner, Thomas (*Eriksholm Research Centre - Part of Oticon*); Rank, Mike Lind (*Widex A/S*)

08:45-09:00 ThAT1.4  
**Effect of Vigilance Changes on the Incidence of High Frequency Oscillations in the Epileptic Brain**  
 Al-Bakri, Amir (*University of Kentucky*); Yaghouby, Farid (*FDA*); Besio, W. G. (*University of Rhode Island*); Ding, Lei (*University of Oklahoma*); Modur, Pradeep (*University of Texas Southwestern Medical Center*); Sunderam, Sridhar\* (*University of Kentucky*)

09:00-09:15 ThAT1.5  
**Investigation of Propagating Cortical Waves and Spirals Recorded by High Density Porous Graphene Arrays**  
 Liu, Xin (*Univ. of California San Diego*); Lu, Yichen (*Univ. of California, San Diego*); Kuzum, Duygu\* (*Univ. of California San Diego*)

09:15-09:30 ThAT1.6  
**A Deep Learning Approach for the Classification of Neuronal Cell Types**  
 Buccino, Alessio Paolo\* (*University of Oslo*); Ness, Torbjørn V. (*Norwegian University of Life Sciences*); Einevoll, Gaute (*Norwegian University of Life Sciences*); Cauwenberghs, Gert (*University of California San Diego*); Häfliger, Philipp (*University of Oslo, Dept. of Informatics*)

ThAT2: 08:00-09:30 Meeting Room 312  
**Connectivity and Causality (Theme 1)** (Oral Session)  
**Chair:** Mitsis, Georgios D. (*McGill University*)  
**Co-Chair:** Valenza, Gaetano (*University of Pisa*)

08:00-08:15 ThAT2.1  
**Tracking of Dynamic Functional Connectivity from MEG Data with Kalman Filtering**  
 Tronarp, Filip\* (*Aalto University*); Puthanmadam Subramaniam, Narayan (*Aalto University*); Särkkä, Simo (*Aalto University*); Parkkonen, Lauri (*Aalto University*)

08:15-08:30 ThAT2.2  
**Does Independent Component Analysis Influence EEG Connectivity Analyses?**  
 Pester, Britta\* (*Jena Univ. Hospital; Friedrich Schiller Univ. Jena*); Ligges, Carolin (*Dept. of Child and Adolescent Psychiatry, Psychosomatic Medicine and Psychotherapy; Jena Univ. Hospital*)

08:30-08:45 ThAT2.3  
**Increased Randomness of Functional Network Connectivity in Nicotine and Alcohol Consumers**  
 Vergara, Victor Manuel\* (*The Mind Research Network*); Hutchison, Kent (*University of Colorado Boulder*); Calhoun, Vince (*The Mind Research Network/University of New Mexico*)

08:45-09:00 ThAT2.4  
**EEG Hyperconnectivity Study on Saxophone Quartet Playing in Ensemble**  
 Greco, Alberto\* (*Univ. of Pisa*); Spada, Danilo (*Univ. of Pavia, and Le2i, Univ. de Bourgogne Franche-Comte*); Rossi, Simone (*Azienda Ospedaliera Univ. of Siena*); Perani, Daniela (*Scientific Institute San Raffaele, Milan*); Valenza, Gaetano (*Univ. of Pisa*); Scilingo, Enzo Pasquale (*Univ. of Pisa*)

09:00-09:15 ThAT2.5  
**Investigation of Interaction between Physiological Signals and fMRI Dynamic Functional Connectivity using Independent Component Analysis**  
 Nikolaou, Foivia (*University of Cyprus*); Orphanidou, Christina (*University of Cyprus*); Murphy, Kevin (*Cardiff University*); Wise, Richard G. (*Cardiff University Brain Research Imaging Center (CUBRIC), School of Psychology, Cardiff University, Cardiff*); Mitsis, Georgios D.\* (*McGill University*)

09:15-09:30 ThAT2.6  
**Identification of Time-Varying Cortico-Cortical and Cortico-Muscular Coherence during Motor Tasks with Multivariate Autoregressive Models**  
 Xifra-Porxas, Alba (*McGill Univ.*); Kostoglou, Kyriaki (*McGill Univ.*); Larivière, Sara (*McGill Univ.*); Niso, Guiomar (*McGill Univ.*); Kassanopoulos, Michalis (*McGill Univ.*); Boudrias, Marie-Helene (*McGill Univ.*); Mitsis, Georgios D.\* (*McGill Univ.*)

ThAT3: 08:00-09:30 Meeting Room 314  
**Brain Imaging: Connectivity and Networks (Theme 2)** (Oral Session)  
**Chair:** Ji, Jim Xiuquan (*Texas A&M University*)  
**Co-Chair:** Jarrahi, Behnaz (*Stanford University School of Medicine*)

08:00-08:15 ThAT3.1  
**Test-Retest Reliability of Functional Connectivity and Graph Metrics in the Resting Brain Network**  
 Jin, Dan (*University of Chinese Academy of Sciences, Institute of Automation, Chinese Academy of Sciences*); Xu, Kaibin (*National Lab of Pattern Recognition, Institute of Automation, Chinese Academy of Sciences*); Liu, Bing (*Institute of Automation, Chinese Academy of Sciences*); Jiang, Tianzi (*Institute of Automation*); Liu, Yong\* (*Chinese Academy of Sciences*)

08:15-08:30 ThAT3.2  
**Implementation of High-Performance Correlation and Mapping Engine for Rapid Generation of Brain Connectivity Networks from Big fMRI Data**  
 Lusher, John\* (*Texas A&M Univ.*); Ji, Jim Xiuquan (*Texas A&M Univ.*)

08:30-08:45 ThAT3.3  
**Dynamic Influence of Ongoing Brain Stimulation on Resting State fMRI Connectivity: A Concurrent tDCS-fMRI Study**  
 Wang, Xin\* (*Chinese Univ. of Hong Kong*); Wong, Wan-wa (*Chinese Univ. of Hong Kong*); Fang, Yuqi (*Chinese Univ. of Hong Kong*); Chu, Winnie Chiu-wing (*Chinese Univ. of Hong Kong*); Tong, Kai Yu, Raymond (*Chinese Univ. of Hong Kong*)

08:45-09:00 ThAT3.4  
**Characterizing the Effects of MR Image Quality Metrics on Intrinsic Connectivity Brain Networks: A Multivariate Approach**  
 Jarrahi, Behnaz\* (*Stanford University School of Medicine*); Mackey, Sean (*Stanford University School of Medicine*)

09:00-09:15	ThAT3.5	08:15-08:30	ThAT5.2
<b>Measuring the Influence of Physiological Noise Corrections on ICA Derived Intrinsic Connectivity Brain Networks in Rest and Task fMRI</b> Jarrahi, Behnaz* ( <i>Stanford University School of Medicine</i> ); Mackey, Sean ( <i>Stanford University School of Medicine</i> )		<b>Effects of Stimulus Frequency on Tactile Perception in a Long-Term Human Brain-Computer Interface</b> Gaunt, Robert* ( <i>University of Pittsburgh</i> ); Hughes, Christopher ( <i>University of Pittsburgh</i> ); Flesher, Sharlene N ( <i>Stanford University</i> ); Collinger, Jennifer ( <i>University of Pittsburgh</i> ); Boninger, Michael ( <i>University of Pittsburgh</i> )	
09:15-09:30	ThAT3.6	08:30-08:45	ThAT5.3
<b>Differential Amplitude of Low-Frequency Fluctuations in Brain Networks after BCI Training with and without tDCS in Stroke</b> Hu, Mengjiao* ( <i>Nanyang Technological University</i> )		<b>Peripheral Systems for Sensorimotor Restoration for Limb Prosthetics and Paralysis</b> Tyler, Dustin* ( <i>Case Western Reserve University</i> )	
<b>ThAT4: 08:00-09:30 Meeting Room 315</b> <b>Minisymposia: New Challenges in Neurorehabilitation (31nvq) (Minisymposium)</b> <b>Chair:</b> Laffranchi, Matteo ( <i>Fondazione Istituto Italiano di Tecnologia</i> ) <b>Co-Chair:</b> Semprini, Marianna ( <i>Italian Institute of Technology</i> )		<b>ThAT6: 08:00-09:30 Meeting Room 316B</b> <b>Invited Session: Next Generation Neural Interfaces for Multimodal Recording and Stimulation (1e91b) (Invited Session)</b> <b>Chair:</b> Kuzum, Duygu ( <i>University of California San Diego</i> ) <b>Co-Chair:</b> Chamanzar, Maysamreza ( <i>University of California Berkeley</i> )	
08:00-08:15	ThAT4.1	08:00-08:15	ThAT6.1
<b>A Novel Lower Limb Exoskeleton and New Neurorehabilitation-Based Application Scenarios</b> Laffranchi, Matteo* ( <i>Fondazione Istituto Italiano di Tecnologia</i> ); Semprini, Marianna ( <i>Italian Institute of Technology</i> ); Manzan, Emiliano ( <i>Fondazione Istituto Italiano di Tecnologia</i> ); Cerruti, Giulio ( <i>Fondazione Istituto Italiano di Tecnologia</i> ); Vassallo, Christian ( <i>Fondazione Istituto Italiano di Tecnologia</i> ); De Giuseppe, Samuele ( <i>Fondazione Istituto Italiano di Tecnologia</i> ); Maludrottu, Stefano ( <i>Fondazione Istituto Italiano di Tecnologia</i> ); Succi, Antonio ( <i>Fondazione Istituto Italiano di Tecnologia</i> ); Chiappalone, Michela ( <i>Istituto Italiano di Tecnologia</i> ); Gruppioni, Emanuele ( <i>INAIL Centro Protesi Budrio</i> ); De Michieli, Lorenzo ( <i>Fondazione Istituto Italiano di Tecnologia</i> )		<b>Towards High Density Parylene Neural Probe Arrays for Large Scale Recording</b> Meng, Ellis* ( <i>University of Southern California</i> ); Weltman Hirschberg, Ahuva ( <i>University of Southern California</i> ); Xu, Huijing ( <i>University of Southern California</i> ); Scholten, Kee ( <i>University of Southern California</i> ); Berger, Theodore ( <i>USC</i> ); Song, Dong ( <i>University of Southern California</i> )	
08:15-08:30	ThAT4.2	08:15-08:30	ThAT6.2
<b>A Platform to Evaluate Cortical Changes Induced by Rehabilitation with Non-Invasive Brain Stimulation</b> Semprini, Marianna* ( <i>Italian Institute of Technology</i> ); Bonassi, Gaia ( <i>Università di Genova</i> ); Pelosin, Elisa ( <i>Università di Genova</i> ); Mantini, Dante ( <i>ETH</i> ); Avanzino, Laura ( <i>Università di Genova</i> ); Chiappalone, Michela ( <i>Istituto Italiano di Tecnologia</i> )		<b>Strategies for Large-Scale Optogenetics in Non-Human Primates</b> Yazdan-Shahmorad, Azadeh* ( <i>University of Washington</i> ); Sabes, Philip N. ( <i>University of California, San Francisco</i> )	
08:30-08:45	ThAT4.3	08:30-08:45	ThAT6.3
<b>Robotic Rehabilitation in Stroke and Parkinson's Disease: Training Body Awareness to Improve Motor Function</b> Konczak, Juergen* ( <i>University of Minnesota</i> ); Elangovan, Naveen ( <i>University of Minnesota</i> ); Yeh, I-Ling ( <i>Singapore Institute of Technology</i> ); Cuppone, Anna Vera ( <i>Istituto Italiano di Tecnologia</i> )		<b>Flexible Electronic/Optoelectronic Neural Interfaces</b> Rogers, John* ( <i>University of Illinois</i> )	
08:45-09:00	ThAT4.4	08:45-09:00	ThAT6.4
<b>Body Machine Interfaces for Assistance and Rehabilitation</b> Rizzoglio, Fabio ( <i>University of Genova</i> ); Sciacchitano, Alessio ( <i>University of Genova</i> ); Pierella, Camilla ( <i>École Polytechnique Fédérale de Lausanne</i> ); Farshchiansadegh, Ali ( <i>Northwestern University</i> ); Mussa-Ivaldi, Ferdinando ( <i>Northwestern University</i> ); Casadio, Maura* ( <i>University of Genova</i> )		<b>Recent Advances in Neural Dust: Towards a Neural Interface Platform</b> Maharbiz, Michel* ( <i>University of California, Berkeley</i> )	
09:00-09:15	ThAT4.5	<b>ThAT7: 08:00-09:30 Meeting Room 316C</b> <b>Invited Session: Fostering Healthcare Transformation through Wearable Sensors and Big Data at Work: Preventive, Pervasive and Personalized Care (35viy) (Invited Session)</b> <b>Chair:</b> Seoane, Fernando ( <i>Karolinska Institutet</i> )	
<b>Non-Invasive Brain Stimulation to Enhance Neuro-Recovery and Rehabilitation</b> Harris-Love, Michelle* ( <i>George Mason University</i> ); Harrington, Rachael ( <i>Georgia State University</i> ); Chan, Evan (Chi-Pang) ( <i>MedStar Health Research Institute</i> )		08:00-08:15	ThAT7.1
<b>ThAT5: 08:00-09:30 Meeting Room 316A</b> <b>Minisymposia: Brain Computer Interface and Neurostimulation Technologies for Paralysis and Limb Prosthetic Applications (tpi95) (Minisymposium)</b> <b>Chair:</b> Bouton, Chad ( <i>Northwell Health/Feinstein Institute for Medical Research</i> )		<b>Smart Textiles Enabling Sustainable Health at Work</b> Lindecrantz, Kaj ( <i>Royal Institute of Technology</i> ); Diaz-Olivares, Jose Antonio* ( <i>Royal Institute of Technology (KTH)</i> ); Abtahi, Farhad ( <i>KTH Royal Institute of Technology</i> )	
08:00-08:15	ThAT5.1	08:15-08:30	ThAT7.2
<b>Progress in Brain-Computer Interfaces for Restoring Movement and Sensation in Paralysis: What have We Learned?</b> Bouton, Chad* ( <i>Northwell Health/Feinstein Inst. for Medical Research</i> )		<b>Wearable Sensors Enabling Personalized Occupational Healthcare</b> Abtahi, Farhad ( <i>KTH Royal Institute of Technology</i> ); Diaz-Olivares, Jose Antonio* ( <i>Royal Institute of Technology (KTH)</i> ); Lu, Ke ( <i>School of Technology and Health, KTH Royal Institute of Technology</i> ); Forsman, Mikael ( <i>Karolinska Institutet</i> ); Lindecrantz, Kaj ( <i>Royal Institute of Technology</i> )	
		08:30-08:45	ThAT7.3
		<b>We@Work: Wellbeing, Health and Safety at Work</b> Seoane, Fernando* ( <i>Karolinska Institutet</i> ); Mediavilla Martinez, César ( <i>Atos Spain S.A.</i> ); Diaz-Olivares, Jose Antonio ( <i>Royal Institute of Technology (KTH)</i> ); Abtahi, Farhad ( <i>KTH Royal Institute of Technology</i> )	

08:45-09:00 ThAT7.4  
**Mobile Applications to Enhance Self-Healthcare and Wellbeing at Work**  
 Rodríguez, Juan Mario (*Atos Spain*); Aso, Santiago (*Atos Spain, S.A.*); Cavero Barca, Carlos (*Atos Spain*); Vega-Barbas, Mario\* (*Karolinska Institutet*); Quintero, Ana María (*Atos Spain*); Ramos Maia Martins, Ivo (*Atos Spain*); Perez, Manuel (*Athos Origin SA*); Mediavilla Martínez, César (*Atos Spain S.A.*); Jordan Rodríguez, Blanca (*ATOS, Madrid*)

09:00-09:15 ThAT7.5  
**Prevention of Work-Related Ill-Health**  
 Lind, Carl\* (*Institute of Environmental Medicine, Karolinska Institutet & Unit of Ergonomics, KTH Royal Institute of Technology*); Eklund, Jörgen (*KTH Royal Institute of Technology, Unit of Ergonomics*); Yang, Liyun (*KTH, Royal Institute of Technology*); Forsman, Mikael (*Karolinska Institutet*)

09:15-09:30 ThAT7.6  
**The Need for Practical and Reliable Risk Assessment Methods for Prevention of Musculoskeletal Disorders**  
 Forsman, Mikael\* (*Karolinska Institutet*); Yang, Liyun (*KTH, Royal Institute of Technology*); Borgström, Dennis (*Karolinska Institutet*); Lind, Carl (*Institute of Environmental Medicine, Karolinska Institutet & Unit of Ergonomics, KTH Royal Institute of Technology*)

ThAT8: 08:00-09:30 Meeting Room 318A  
**Invited Session: Imaging Photoplethysmography and Remote Physiological Sensing (3cg25)** (Invited Session)  
**Chair:** Blackford, Ethan Brian (*Ball Aerospace*)  
**Co-Chair:** McDuff, Daniel Jonathan (*Microsoft*)

08:00-08:15 ThAT8.1  
**Spectral Estimation Methods for Evaluating iPPG Pulse Rate Variability**  
 McDuff, Daniel Jonathan\* (*Microsoft*); Blackford, Ethan Brian (*Ball Aerospace*); Estep, Justin Ronald (*Air Force Research Lab*)

08:15-08:30 ThAT8.2  
**On the Invariance of Remote SpO2 Measurements to the Pulsating Profile of the Skin in the Red-Infrared Diagnostic Window**  
 Moco, Andreia\* (*Eindhoven University of Technology*)

08:30-08:45 ThAT8.3  
**Assessment of Autonomic Response through Processing of Imaging Photo-Plethysmographic Signals in Psychophysiological Elicitation**  
 Mainardi, Luca\* (*Politecnico di Milano*); Iozzia, Luca (*Politecnico di Milano*); Valenza, Gaetano (*University of Pisa*); Cerina, Luca (*Politecnico di Milano*); Alberti, Chiara (*Politecnico di Milano*); Eleonora, Centanini (*Politecnico di Milano*); Colella, Angela (*Politecnico di Milano*); Barbieri, Riccardo (*Politecnico di Milano*)

08:45-09:00 ThAT8.4  
**Noncontact PPG Monitoring from the Patient's Back during Dental Treatment**  
 Teichmann, Daniel\* (*RWTH Aachen University*); Teichmann, Maren (*RWTH Aachen University*); Hoog Antink, Christoph (*RWTH Aachen University, Aachen, Germany*); Wolfart, Stefan (*University Hospital RWTH University*); Leonhardt, Steffen (*RWTH Aachen University*); Walter, Marian (*RWTH Aachen University*)

09:00-09:15 ThAT8.5  
**High-Speed Multispectral Imaging Photoplethysmography**  
 Blackford, Ethan Brian\* (*Ball Aerospace*); Estep, Justin Ronald (*Air Force Research Lab*); McDuff, Daniel Jonathan (*Microsoft*)

ThAT9: 08:00-09:30 Meeting Room 318B  
**Invited Session: Bio-Sensing in Application Environment (27t73)** (Invited Session)  
**Chair:** Lei, Kin Fong (*Chang Gung University*)  
**Co-Chair:** Yao, Da-Jeng (*National Tsing Hua University*)

08:00-08:15 ThAT9.1  
**Microengineered Systems to Modulate the Fusion of Cancer Cells**  
 Sun, Yubing\* (*University of Massachusetts Amherst*); Peyton, Shelly (*University of Massachusetts Amherst*); Zhu, Peiran (*University of Massachusetts Amherst*); Tseng, Ning-Hsuan (*University of Massachusetts Amherst*)

08:15-08:30 ThAT9.2  
**Quantitative Assessment for the Regularity of Activity of Daily Living (ADL) using MEMS-Based Accelerometers and Its Potential Applications in Medical-Care**  
 Verma, Vijay Kumar\* (*Chang Gung University*); Lin, Wen-Yen (*Chang Gung University*); Lee, Ming-Yih (*Chang Gung University*)

08:30-08:45 ThAT9.3  
**Quantitative Assessment of the Growth of Tumor Spheroids**  
 Huang, Chun-Hao (*Chang Gung University*); Lei, Kin Fong\* (*Chang Gung University*)

08:45-09:00 ThAT9.4  
**Fertilization on a Chip**  
 Huang, Yao-Hui (*National Tsing Hua Univ.*); Lai, Yun-Li (*National Tsing Hua Univ.*); Yao, Da-Jeng\* (*National Tsing Hua Univ.*)

09:00-09:15 ThAT9.5  
**Whole-Cell Biosensing System for Detecting Organic Toxicants in Food**  
 Kao, Wei-Chen (*Academia Sinica Taiwan*); Belkin, Shimshon (*Hebrew Univ. of Jerusalem*); Cheng, Ji-Yen\* (*Academia Sinica Taiwan*)

ThAT10: 08:00-09:30 Meeting Room 319A  
**Invited Session: Simulation of Neurological Disorders and their Treatment with Neuromodulation (49pq6)** (Invited Session)  
**Chair:** Dokos, Socrates (*University of New South Wales*)  
**Co-Chair:** Shils, Jay (*Rush University Medical Center*)

08:00-08:15 ThAT10.1  
**Neural Systems Modeling as Related to Intra-Operative Neuromonitoring**  
 Shils, Jay\* (*Rush University Medical Center*); Mei, Longzhi (*BIDMC*); Carlson, Kris (*BIDMC/Harvard Medical School*); Arle, Jeffrey (*Beth Israel Deaconess Medical Center*)

08:15-08:30 ThAT10.2  
**Computational Modelling of Retinal Electrical Stimulation**  
 Dokos, Socrates\* (*University of New South Wales*); Guo, Tianruo (*University of New South Wales*); Lovell, Nigel H. (*University of New South Wales*)

08:30-08:45 ThAT10.3  
**Computational Modeling Insights into Mechanisms of Action in Ultra High Frequency Spinal Cord Stimulation**  
 Arle, Jeffrey\* (*Beth Israel Deaconess Medical Center*); Carlson, Kris (*BIDMC/Harvard Medical School*); Mei, Longzhi (*BIDMC*); Shils, Jay (*Rush University Medical Center*)

08:45-09:00 ThAT10.4  
**Advancements from Multi-Scale Modeling and Computational Trials for Gliomas**  
 Fathallah-Shaykh, Hassan\* (*UAB*)

09:00-09:15 ThAT10.5  
**Simulation: A Critical Ingredient in the Electroceutical Paradigm**  
 Carlson, Kris\* (*BIDMC/Harvard Medical School*); Mei, Longzhi (*BIDMC*); Shils, Jay (*Rush University Medical Center*); Arle, Jeffrey (*Beth Israel Deaconess Medical Center*)

ThAT11: 08:00-09:30 Meeting Room 319B  
**Invited Session: The Role and Importance of Neuromechanics during Human Locomotion (6ur75)** (Invited Session)  
**Chair:** Ludvig, Daniel (*Northwestern University*)  
**Co-Chair:** Rouse, Elliott (*University of Michigan*)

08:00-08:15 ThAT11.1  
**The Confounding Effect of Continuously Varying Kinematics and Kinetics on Ankle Stiffness and Viscosity**

Ludvig, Daniel\* (*Northwestern University*); Whitmore, Mariah (*Northwestern University*); Hargrove, Levi (*Rehabilitation Institute of Chicago*); Perreault, Eric (*Northwestern University*)

08:15-08:30 ThAT11.2  
**Conceptual Diversity in Leg Mechanics Inspires Biomimetic Prostheses for Walking and Running**

Adamczyk, Peter Gabriel\* (*University of Wisconsin - Madison*)

08:30-08:45 ThAT11.3  
**Accuracy and Precision of Ankle Joint Stiffness Regulation**

Wind, Alexander (*Northwestern University*);  
Rouse, Elliott\* (*University of Michigan*)

08:45-09:00 ThAT11.4  
**A Model of Muscle Excitations Applied to Predictive Robust Control of Wearable Robots**

Pons, Jose Luis\* (*Cajal Institute, Spanish Research Council*)

09:00-09:15 ThAT11.5  
**Mimicking Human Control of Stance Leg Improves Prosthesis Control**

Thatte, Nitish (*Carnegie Mellon University*); Kyung, Timothy (*Carnegie Mellon University*); Senthilnathan, Chendur (*Carnegie Mellon University*); Geyer, Hartmut\* (*Carnegie Mellon University*)

09:15-09:30 ThAT11.6  
**Efference Copy and Its Implications for Robotic Lower Limb Prostheses**

Ferris, Daniel\* (*University of Florida*)

ThAT12: 08:00-09:30 Meeting Room 321A  
**Invited Session: Multiscale Complexity Analysis of Biomedical Signals: Methods and Applications (a2nq5)** (Invited Session)  
**Chair:** Faes, Luca (*University of Palermo*)  
**Co-Chair:** Porta, Alberto (*Università degli Studi di Milano*)

08:00-08:15 ThAT12.1  
**Circadian Rhythm of Multiscale Complexity of Short-Term Cardiac Control**

Porta, Alberto\* (*Università degli Studi di Milano*); De Maria, Beatrice (*IRCCS Fondazione Salvatore Maugeri, Milano*); Cairo, Beatrice (*Università degli Studi di Milano*); Bari, Vlasta (*IRCCS PoliClinico San Donato*)

08:15-08:30 ThAT12.2  
**Performance of Refined Multiscale Entropy in the Nociception Assessment, Implementing a Fuzzy Approach**

Valencia Murillo, Jose Fernando\* (*Universidad San Buenaventura*); Bolaños, José Daniel (*Universidad San Buenaventura*); Vallverdu, Montserrat (*Universitat Politècnica de Catalunya*); Jensen, Erik Weber (*Technical University of Catalonia*); Porta, Alberto (*Università degli Studi di Milano*); Gambus, Pedro L (*Hospital Clinic, Universidad de Barcelona*);

08:30-08:45 ThAT12.3  
**Multiscale Entropy as a Tool for Complexity Analysis and Nonlinearity Detection in Cardiovascular Oscillations**

Silva, Luiz Eduardo Virgilio (*School of Medicine of Ribeirão Preto*); Rodrigues, Fernanda L. (*School of Medicine of Ribeirão Preto*); Bari, Vlasta\* (*IRCCS PoliClinico San Donato*); Oliveira, Mauro (*School of Medicine of Ribeirão Preto*); Fazan Jr, Rubens (*School of Medicine of Ribeirão Preto*); Porta, Alberto (*Università degli Studi di Milano*)

08:45-09:00 ThAT12.4  
**Multiscale Entropy Analysis of Short Cardiovascular Variability Series during Orthostatic and Mental Stress**  
Javorka, Michal\* (*Comenius Univ., Jessenius Faculty of Medicine*); Porta, Alberto (*Università degli Studi di Milano*); Nollo, Giandomenico (*Univ. of Trento*); Faes, Luca (*Univ. of Palermo*)

09:00-09:15 ThAT12.5  
**Multiscale Partial Information Decomposition of Neural and Cardiovascular Signals**

Faes, Luca\* (*Univ. of Palermo*); Bari, Vlasta (*IRCCS PoliClinico San Donato*); Ranucci, Marco (*Dept. of Cardiothoracic, Vascular Anesthesia and Intensive Care, IRCCS PoliClinico San Donato, Milan*); Marinazzo, Daniele (*Faculty of Psychology and Educational Sciences, Dept. of Data Analysis, Ghent Univ.*); Stramaglia, Sebastiano (*Univ. of Bari, Italy, and INFN Sezione di Bari, Italy*); Porta, Alberto (*Università degli Studi di Milano*)

09:15-09:30 ThAT12.6  
**Multiscale Granger Causality of RR and QT Interval Variability**

Baumert, Mathias\* (*The Univ. of Adelaide*); Faes, Luca (*Univ. of Palermo*); Porta, Alberto (*Università degli Studi di Milano*)

ThAT13: 08:00-09:30 Meeting Room 321B  
**Invited Session: Time-Series Modelling of Physiology: Inference, Implementation, and Interpretability (j63dh)** (Invited Session)  
**Chair:** Colopy, Glen Wright (*University of Oxford*)

08:00-08:15 ThAT13.1  
**Machine Learning for Time-Series Inference when Identifying the Deteriorating Patient**

Clifton, David\* (*Univ. of Oxford*); Colopy, Glen Wright (*Univ. of Oxford*); Shamout, Farah (*Univ. of Oxford*); Clifton, Lei (*Univ. of Oxford*); Zhu, Tingting (*Univ. of Oxford*)

08:15-08:30 ThAT13.2  
**Time-Series versus IID features in Machine Learning for Vital-Sign Monitoring**

Colopy, Glen Wright\* (*University of Oxford*); Roberts, Stephen (*University of Oxford*); Clifton, David (*University of Oxford*)

08:30-08:45 ThAT13.3  
**A Multitasking Paradigm to Establish Patient Specific Changes during Everyday Activities in Parkinson's Disease**

Bergmann, Jeroen\* (*University of Oxford*)

ThAT14: 08:00-09:30 Meeting Room 322AB  
**Minisymposia: Cuffless Unobtrusive Blood Pressure Measurement: From Sensing, Mechanism, Algorithm to Standardization (99i3h)** (Minisymposium)  
**Chair:** Carey, Carole C. (*Former U.S. Food and Drug Administration*)

08:00-08:15 ThAT14.1  
**Developing Cuffless Blood Pressure Monitoring Devices in Japanese Industries**

Tamura, Toshiyo\* (*Waseda University*)

08:15-08:30 ThAT14.2  
**The Effect of Measurement Condition on Cuffless and Continuous Monitoring of Blood Pressure in Daily Life**

Maeda, Yuka\* (*University of Tsukuba*); Sekine, Masaki (*Osaka Electro-Communication University*); Tamura, Toshiyo (*Waseda University*); Mizutani, Koichi (*University of Tsukuba*)

08:30-08:45 ThAT14.3  
**Effect of Variation of Pressure Dependency of Arterial Stiffness on Estimation of Blood Pressure from Pulse Transit Time: Implications for Cuffless Measurement of Blood Pressure**

Avolio, Alberto P\* (*Macquarie Univ.*); Shirbani, Fatemeh (*Macquarie Univ., Faculty of Medicine and Health Sciences*); Tan, Isabella (*Macquarie Univ.*); Butlin, Mark (*Macquarie Univ.*)

ThAT15: 08:00-09:30 Meeting Room 323A  
**Invited Session: Analysis of Cardiac Vibrations: Methodology and Applications (718fu)** (Invited Session)  
**Chair:** Di Rienzo, Marco (*Fondazione Don Carlo Gnocchi*)  
**Co-Chair:** Inan, Omer (*Georgia Institute of Technology*)

08:00-08:15 ThAT15.1  
**Applications of Multidimensional Motion Sensors in Cardiovascular Monitoring and Medical Imaging**  
 Jafari Tadi, Mojtaba\* (*University of Turku*); Lahdenoja, Olli (*Technology Research Center, University of Turku*); Lehtonen, Eero Lennart (*University of Turku*); Humanen, Tero (*Technology Research Center, University of Turku*); Mehrang, Saeed (*Tampere University of Technology*); Pänkäälä, Mikko (*University of Turku*); Koivisto, Tero (*University of Turku*)

08:15-08:30 ThAT15.2  
**Evaluation of Relative Goodness of Seismocardiography (SCG) to ECG for Multimodal Cardiac Quiescence Prediction**  
 Yao, Jingting (*Georgia Institute of Technology*); Tridandapani, Srinu (*Emory University*); Auffermann, William (*University of Utah*); Wick, Carson A (*Camerad Technologies*); Bhatti, Pamela\* (*Georgia Institute of Technology*)

08:30-08:45 ThAT15.3  
**Caveats in the Analysis of Prolonged Seismocardiogram Recordings**  
 Di Rienzo, Marco\* (*Fondazione Don Carlo Gnocchi*); Vaini, Emanuele (*IRCCS PoliClinico San Donato*); Lombardi, Prospero (*Fondazione Don Carlo Gnocchi ONLUS*)

08:45-09:00 ThAT15.4  
**Gyrocardiography: A Preliminary Investigation of Cardiac Timings**  
 Kheirkhah Dehkordi, Parastoo\* (*University of British Columbia*); Tavakolian, Kouhyar (*Assistant Professor*); Khosrow-khavar, Farzad (*Simon Fraser University*)

09:00-09:15 ThAT15.5  
**Longitudinal Ballistocardiogram and Electrocardiogram Measurements from Patients with Heart Failure at Home: Results from the Ongoing Studies and Lessons Learned**  
 Shandhi, Md. Mobashir Hasan (*Georgia Institute of Technology*); Klein, Liviu (*Univ. of California, San Francisco*); Fan, Joanna (*Univ. of California, San Francisco*); Etemadi, Mozziyar (*Northwestern Univ.*); Inan, Omer\* (*Georgia Institute of Technology*)

ThAT16: 08:00-09:30 Meeting Room 323B  
**Invited Session: Next Steps in Real-Life Brain Monitoring: Technologies for Wearable EEG (9xrw2)** (Invited Session)  
**Chair:** Casson, Alexander James (*University of Manchester*)  
**Co-Chair:** Hairston, W. David (*U.S. Army Research Lab*)

08:00-08:15 ThAT16.1  
**Dry-Contact Electrode Ear-EEG**  
 Kappel, Simon Lind\* (*Aarhus University, Denmark*); Kidmose, Preben (*Aarhus University, Denmark*)

08:15-08:30 ThAT16.2  
**Overcoming Obstacles in Mobile EEG**  
 Nordin, Andrew D.\* (*University of Florida*); Hairston, W. David (*U.S. Army Research Lab*); Ferris, Daniel (*University of Florida*)

08:30-08:45 ThAT16.3  
**Future Challenges in Sleep Monitoring with Wearable EEG**  
 Imtiaz, Syed Anas (*Imperial College London*); Garcia Lopez, Irene\* (*Imperial College London*); Rodriguez-Villegas, Esther (*Imperial College London*)

08:45-09:00 ThAT16.4  
**Real-Time Closed Loop EEG Systems with Electrical, Auditory, and App based Visual Feedback**  
 Casson, Alexander James\* (*Univ. of Manchester*); Jacob, Nikhil Kurian (*Univ. of Manchester*); Kohli, Siddharth (*Univ. of Manchester*)

09:00-09:15 ThAT16.5  
**Comfortable and Safe Dry EEG Electrodes for Real-World Neuroimaging**  
 Bradford, J. Courtney\* (*U.S. Army Research Lab*); Bottomley, Summer (*U.S. Army Research Lab*); Slipper, Geoffrey A. (*U.S. Army Research Lab*); Hairston, W. David (*U.S. Army Research Lab*)

09:15-09:30 ThAT16.6  
**New Approaches in Validating EEG System and Electrode Performance**  
 Hairston, W. David\* (*U.S. Army Research Lab*); Yu, Alfred (*U.S. Army Research Lab*); Slipper, Geoffrey A. (*U.S. Army Research Lab*)

ThAT17: 08:00-09:30 Meeting Room 323C  
**Invited Session: Multi-Technologies-Platforms: Advanced Sensors and Actuators for Life Science Applications (7p8b4)** (Invited Session)  
**Chair:** Miled, Amine (*Laval University*)  
**Co-Chair:** Ghafar-Zadeh, Ebrahim (*York University*)

08:00-08:15 ThAT17.1  
**Low-Power, Miniature Wireless Sensor Design for Biomedical Applications: Oximeter and Heart Rate Monitor Example**  
 Boukadoum, Mounir\* (*University of Quebec at Montréal*)

08:15-08:30 ThAT17.2  
**Detecting Gold Nanoparticles Covalently Bound to Interdigitated Gold Electrode Substrates for Applications in Biosensing**  
 MacKay, Scott (*Univ. of Alberta*); Abdelrasoul Mohamed, Gaser Nagah (*Univ. of Alberta*); Tamura, Marcus (*Univ. of Alberta*); Lin, Donghai (*Univ. of Alberta*); Chen, Jie\* (*Univ. of Alberta*)

08:30-08:45 ThAT17.3  
**3rd Generation DNA Sequencing with Embedded Neural Networks**  
 Zhong, Xiaoyong (*York University*); Wu, Zhongpan (*York University*); Ghafar-Zadeh, Ebrahim (*York University*); Magierowski, Sebastian\* (*York University*)

08:45-09:00 ThAT17.4  
**Printed Sensors on Flexible Substrates for Biomedical Applications**  
 Descent, Philippe (*École de Technologie Supérieure*); Izquierdo, Ricardo\* (*École de Technologie Supérieure*)

09:00-09:15 ThAT17.5  
**Towards an Optofluidic System for Neurotransmitter Detection**  
 Niyonambaza, Shimwe Dominique (*Université Laval*); Boisselier, Elodie (*Université Laval*); Boukadoum, Mounir (*University of Quebec at Montréal*); Miled, Amine\* (*Laval University*)

09:15-09:30 ThAT17.6  
**Core-CBCM CMOS Capacitive Sensors for Life Science Applications: Recent Progresses and Future Prospects**  
 Ghafar-Zadeh, Ebrahim\* (*York University*)

ThAT18: 08:00-09:30 Meeting Room 324  
**Minisymposia: Towards P4 Medicine in Sleep Theranostics (III) (1i8t5)** (Minisymposium)  
**Chair:** Khoo, Michael (*University of Southern California*)  
**Co-Chair:** Penzel, Thomas (*Charité Universitätsmedizin Berlin*)

08:00-08:15 ThAT18.1  
**Continued Evolution of Telemedicine and Personalised Care in Sleep and Respiratory Medicine**  
 Armitstead, Jeffrey Peter\* (*ResMed Ltd., University of Sydney*); Javed, Faizan (*University of New South Wales*); Schindhelm, Klaus (*University of New South Wales*)



08:15-08:30	ThAT18.2	09:15-09:30	ThAT19.6
<b>Loop Gain as a Biomarker of Ventilatory Instability and Its Utility in Predicting the Response to Therapies for Sleep-Disordered Breathing</b> Edwards, Bradley Allan* ( <i>Monash University</i> ); Terrill, Philip Ian ( <i>University of Queensland</i> ); Landry, Shane ( <i>Monash University</i> ); Joosten, Simon ( <i>Monash Health and Monash University</i> ); Owens, Robert ( <i>Harvard Medical School</i> ); Malhotra, Atul ( <i>Brigham and Women's Hospital and Harvard Medical School</i> ); White, David P ( <i>Brigham and Women's Hospital and Harvard Medical School</i> ); Wellman, David Andrew ( <i>Harvard Medical School</i> ); Hamilton, Garun ( <i>Dept. of Respiratory and Sleep Medicine, Monash Medical Centre, Melbourne, Australia</i> ); Sands, Scott Aaron ( <i>Brigham and Women's Hospital and Harvard Medical School</i> )		<b>Application of Deep Learning in Low Dose CT Image Analysis</b> Jiang, Huiqin* ( <i>School of Information Engineering, Zhengzhou University</i> ); Gao, Jianbo ( <i>The First Affiliated Hospital of Zhengzhou University</i> ); Ma, Ling ( <i>Information Engineering Institute of Zhengzhou University</i> ); Yang, Haojin ( <i>Hasso Plattner Institute for Digital Engineering gGmbH</i> )	
ThAT19: 08:00-09:30 Meeting Room 325A <b>Minisymposia: Emerging Methods in Medical Image Analysis (I) (1agah)</b> (Minisymposium) <b>Chair:</b> Fujita, Hiroshi ( <i>Gifu University</i> ) <b>Co-Chair:</b> Lee, Gobert ( <i>Flinders University</i> )		ThAT20: 08:00-09:30 Meeting Room 325B <b>Invited Session: Computational Human Models (III). High-Frequency Simulations and Measurements (q6644)</b> (Invited Session)	
08:30-08:45	ThAT18.3	08:00-08:15	ThAT20.1
<b>Revisiting Plant Gain: New Observations and Extended Models</b> Khoo, Michael* ( <i>University of Southern California</i> ); Nava-Guerra, Leonardo ( <i>University of Southern California</i> )		<b>Electric-Field Probe for Field Measurements up to 300 Khz</b> Zolj, Adnan* ( <i>Worcester Polytechnic Institute</i> ); Makarov, Sergey ( <i>Electrical and Computer Engineering, Worcester Polytechnic Institute</i> ); Navarro de Lara, Lucia Isabel ( <i>Martinos Center - MGH</i> ); Nummenmaa, Aapo ( <i>Massachusetts General Hospital</i> )	
08:45-09:00	ThAT18.4	08:15-08:30	ThAT20.2
<b>Advances in Sleep Theranostics – What's Next?</b> Khoo, Michael* ( <i>University of Southern California</i> ); Penzel, Thomas ( <i>Charite Universitätsmedizin Berlin</i> )		<b>Simulations of Electric-Field Strength in Different Tissues for a Full-Body Birdcage Resonator Operating at 100-200 Khz</b> Bogdanov, Gene ( <i>Worcester Polytechnic Institute</i> ); Appleyard, William ( <i>Worcester Polytechnic Institute</i> ); Noetscher, Gregory* ( <i>Worcester Polytechnic Institute</i> ); Deng, Zhi-De ( <i>National Institute of Mental Health</i> ); Nummenmaa, Aapo ( <i>Massachusetts General Hospital</i> ); Makarov, Sergey ( <i>Electrical and Computer Engineering, Worcester Polytechnic Institute</i> )	
08:00-08:15	ThAT19.1	08:30-08:45	ThAT20.3
<b>Future Directions for Biomedical Image Analysis in the Broader Health Data Context</b> Maeder, Anthony John* ( <i>Flinders University, School of Nursing &amp; Health Sciences</i> )		<b>Radiofrequency Propagation Close to the Human Ear and Accurate Ear Canal Models</b> Chen, Louis ( <i>Bose Corp.</i> ); Eaton, Gerry ( <i>Bose Corp.</i> ); Noetscher, Gregory* ( <i>Worcester Polytechnic Institute</i> ); Makarov, Sergey ( <i>Electrical and Computer Eng., Worcester Polytechnic Institute</i> )	
08:15-08:30	ThAT19.2	08:45-09:00	ThAT20.4
<b>Automated Intelligent Systems for the Analysis of Optical Coherence Tomography Images in Eye and Skin Applications</b> Wong, Damon* ( <i>Inst. for Infocomm Research</i> ); Yow, Ai Ping ( <i>Inst. for Infocomm Research</i> ); Cheng, Jun ( <i>Inst. of BioMedical Engineering, Chinese Academy of Sciences</i> ); Fu, Huazhu ( <i>Inst. for Infocomm Research, A*STAR</i> ); Srivastava, Ruchir ( <i>Inst. for Infocomm Research</i> ); Lee, Beng Hai ( <i>Inst. for Infocomm Research</i> ); Ong, Ee Ping ( <i>Inst. for Infocomm Research</i> ); Liu, Jiang ( <i>Ningbo Inst. of Materials Technology and Engineering, CAS</i> )		<b>RF Channel Modeling in Body Area Networks</b> Krhac, Katjana ( <i>University of Zagreb, Faculty of Electrical Engineering and Computing</i> ); Griffin, Wesley ( <i>National Institute of Standards and Technology</i> ); Sayrafian, Kamran* ( <i>NIST</i> ); Simunic, Dina ( <i>University of Zagreb</i> )	
08:30-08:45	ThAT19.3	09:00-09:15	ThAT20.5
<b>Retinal Image Analysis using Convolutional Neural Network</b> Hatanaka, Yuji* ( <i>Univ. of Shiga Prefecture</i> ); Ikawa, Hibiki ( <i>Univ. of Shiga Prefecture</i> ); Miyashita, Mitsuhiro ( <i>The Univ. of Shiga Prefecture</i> ); Sunayama, Wataru ( <i>The Univ. of Shiga Prefecture</i> ); Ogohara, Kazunori ( <i>Univ. of Shiga Prefecture</i> ); Muramatsu, Chisako ( <i>Gifu Univ.</i> ); Fujita, Hiroshi ( <i>Gifu Univ.</i> )		<b>Efficient Computational Investigation of Implant RF Safety with Anatomical Human Models in MRI Systems</b> Prokop, Alexander* ( <i>CST - A Dassault Systèmes Company</i> ); Wittig, Tilmann ( <i>CST - A Dassault Systèmes Company</i> ); Levine, Steven ( <i>Dassault Systèmes Simulia</i> )	
08:45-09:00	ThAT19.4	09:15-09:30	ThAT20.6
<b>Detection of Nerve Fiber Layer Defect on Retinal Fundus Images for Early Diagnosis of Glaucoma</b> Muramatsu, Chisako* ( <i>Gifu University</i> ); Watanabe, Ryusuke ( <i>Gifu University</i> ); Ishida, Kyoko ( <i>Toho University Ohashi Medical Center</i> ); Sawada, Akira ( <i>Gifu University</i> ); Hatanaka, Yuji ( <i>University of Shiga Prefecture</i> ); Yamamoto, Tetsuya ( <i>Gifu University</i> ); Fujita, Hiroshi ( <i>Gifu University</i> )		<b>Dual-Applicator Microwave Ablation with Non-Parallel Antennas: Simulation and Experimental Evaluation</b> White, Austin ( <i>Kansas State University</i> ); Prakash, Punit* ( <i>Kansas State University</i> )	
09:00-09:15	ThAT19.5	ThBT1: 10:00-11:30 Meeting Room 311	
<b>Identification of Prognostic Imaging Biomarkers for Hepatocellular Carcinoma based on Radiogenomics and Multiregion Analysis</b> Xia, Wei ( <i>Suzhou Institute of BioMedical Engineering and Technology, Chinese Academy of Sciences</i> ); Chen, Ying ( <i>Suzhou Institute of BioMedical Engineering and Technology, Chinese Academy of Sciences</i> ); Zhang, Bo ( <i>Second Affiliated Hospital of Soochow University</i> ); Gao, Xin* ( <i>Suzhou Institute of BioMedical Engineering and Technology, Chinese Academy of Sciences</i> )		<b>Brain-Computer Interface (II) (Theme 6)</b> (Oral Session) <b>Chair:</b> Micera, Silvestro ( <i>Scuola Superiore Sant'Anna</i> )	
		10:00-10:15	ThBT1.1
		<b>Electroencephalography Classification in Brain-Computer Interface with Manifold Constraints Transfer</b> Tan, Chuanqi ( <i>Tsinghua University</i> ); Sun, Fuchun* ( <i>Tsinghua University</i> ); Zhang, Wenchang ( <i>Tsinghua University</i> ); Kong, Tao ( <i>Tsinghua University</i> )	
		10:15-10:30	ThBT1.2
		<b>Development of a Cognitive Brain-Machine Interface based on a Visual Imagery Method</b> Koizumi, Koji ( <i>University of Tokyo</i> ); Ueda, Kazutaka* ( <i>University of Tokyo</i> ); Nakao, Masayuki ( <i>University of Tokyo</i> )	

10:30-10:45 ThBT1.3  
**Spatiotemporal Characteristics of Cortical Activities Associated with Articulation of Speech Perception**  
 Saga, Naoki\* (*Kobe Univ.*); Yano, Hajime (*Kobe Univ.*); Takiguchi, Tetsuya (*Kobe Univ.*); Soeta, Yoshiharu (*Natl. Inst. of Advanced Industrial Science & Tech. (AIST)*); Nakagawa, Seiji (*Chiba Univ.*)

10:45-11:00 ThBT1.4  
**FPGA Implementation of Deep-Learning Recurrent Neural Networks with Sub-Millisecond Real-Time Latency for BCI-Decoding of Large-Scale Neural Sensors (104 Nodes)**  
 Heelan, Christopher\* (*Brown University*); Nurmikko, Arto (*Brown University*); Truccolo, Wilson (*Brown University*)

11:00-11:15 ThBT1.5  
**Effect of Implant Duration, Anatomical Location and Electrode Orientation on Bandwidth Recorded with a Chronically Implanted Stent-Electrode Array**  
 Opie, Nicholas\* (*University of Melbourne*); John, Sam (*Vascular Bionics Lab, Dept. of Medicine, University of Melbourne*); Rind, Gil (*Vascular Bionics Lab, Dept. of Medicine, University of Melbourne*); Ronayne, Stephen (*Vascular Bionics Lab, Dept. of Medicine, University of Melbourne*); May, Clive (*Florey Institute of Neuroscience and Mental Health*); Grayden, David B. (*University of Melbourne*); Oxley, Thomas (*University of Melbourne*)

11:15-11:30 ThBT1.6  
**Increased Theta Oscillations during Motor Imagery in a Subject with Late-Stage ALS**  
 So, Rosa\* (*Inst. for Infocomm Research*); Yang, Tao (*Inst. of Infocomm Research*); Phua, Kok Soon (*Inst. for Infocomm Research*); Yu, Juanhong (*Inst. for Infocomm Research, Agency for Science, Technology and Research (A\*STAR)*); Toh, Valerie (*National Neuroscience Inst.*); Ng, Wai Hoe (*National Neuroscience Inst.*); Ang, Kai Keng (*Inst. for Infocomm Research*)

ThBT2: 10:00-11:30 Meeting Room 312  
**Data Mining for Biosignals (Theme 1) (Oral Session)**  
 Chair: Nguyen, Hung T. (*Swinburne University of Technology*)

10:00-10:15 ThBT2.1  
**SSVEP Transient Feature Extraction and Rapid Recognition Method based on Bistable Stochastic Resonance**  
 Yao, Pulin (*Xi'an Jiao Tong University*); Xu, Guanghua\* (*Xi'an Jiao Tong University*); Han, Chengcheng (*Xi'an Jiao Tong University*); Zhang, Sicong (*Xi'an Jiao Tong University*); Luo, Ailing (*Xi'an Jiao Tong University*); Zhang, Qing (*Xi'an Jiao Tong University*)

10:15-10:30 ThBT2.2  
**A Multi-Feature Fuzzy Index to Assess Stress Level from Bio-Signals**  
 Charbonnier, Sylvie\* (*Gipsa-Lab*); Vila, Gael (*CEA/LETI*); Godin, Christelle (*CEA/LETI*); Labyt, Etienne (*CEA/LETI/CLIMATEC*); Sakri, Oumayma (*CEA/LETI*); Campagne, Aurélie (*Laboratoire de Psychologie et Neurocognition, Grenoble*)

10:30-10:45 ThBT2.3  
**Automatic Detection of Hot Flash Occurrence and Timing from Skin Conductance Activity**  
 Forouzanfar, Mohammad\* (*Stanford University*); de Zambotti, Massimiliano (*SRI International*); Goldstone, Aimée (*SRI International*); Baker, Fiona (*SRI International*)

10:45-11:00 ThBT2.4  
**Gated Recurrent Neural Networks for EMG-Based Hand Gesture Classification: A Comparative Study**  
 Samadani, Ali\* (*Philips Research North America*)

11:00-11:15 ThBT2.5  
**Quantitative Assessment of Cerebellar Ataxia with Kinematic Sensing during Rhythmic Tapping**  
 Nguyen, Khoa D.\* (*Deakin Univ.*); Pathirana, Pubudu N. (*Deakin Univ.*); Horne, Malcolm (*Florey Institute of Neuroscience and Mental Health*); Power, Laura (*Royal Victorian Eye and Ear Hospital*); Szmulewicz, David (*Victorian Eye and Ear Hospital*)

11:15-11:30 ThBT2.6  
**Study of Compressed Sensing and Predictor Techniques for the Compression of Neural Signals under the Influence of Noise**  
 Pagin, Matteo\* (*Univ. of Ulm*); Ortmanns, Maurits (*Univ. of Ulm*)

ThBT3: 10:00-11:30 Meeting Room 314  
**Cardiac Imaging (I) (Theme 2) (Oral Session)**  
 Chair: Suzuki, Kenji (*Illinois Institute of Technology*)

10:00-10:15 ThBT3.1  
**Motion Tracking for Beating Heart based on Sparse Statistic Pose Modeling**  
 Yang, Bo\* (*University of Electronic Science and Technology of China*); Cao, Tingting (*University of Electronic Science and Technology of China*); Zheng, Wenfeng (*University of Electronic Science and Technology of China*); Liu, Shan (*University of Electronic Science and Technology of China*)

10:15-10:30 ThBT3.2  
**Image Data Analysis for Quantifying Scar Transmurality in MRI Phantoms for Cardiac Resynchronisation Therapy**  
 Karim, Rashed (*King's College London*); Panayiotou, Maria (*King's College London*); Chowdhury, Onik (*School of BioMedical Engineering & Imaging Sciences, King's College London*); Housden, Richard James (*King's College London*); Hummady, Sana (*Siemens Healthineers*); Toth, Daniel\* (*King's College London, UK*); Kurzendorfer, Tanja (*Friedrich-Alexander University Erlangen-Nuremberg*); Mountney, Peter (*Siemens*); Rhode, Kawal (*King's College London*)

10:30-10:45 ThBT3.3  
**Comparison of Image Acquisition Techniques in Four-Dimensional Flow Cardiovascular MR on 3 Tesla in Volunteers and Tetralogy of Fallot Patients**  
 Zhang, Jun-Mei (*National Heart Center*); Tan, Ru San (*National Heart Center*); Zhang, Shuo (*Philips*); van der Geest, Rob (*Leiden University Medical Center*); Garg, Pankaj (*University of Leeds*); Leong, Bao Ru (*National Heart Centre Singapore*); Bryant, Jennifer (*National Heart Centre Singapore*); Tangcharoen, Tarinee (*Ramathibodi Hospital, Mahidol University*); Zhao, Xiaodan (*National Heart Centre Singapore*); Tan, Ju Le (*National Heart Centre Singapore*); Westenber, Jos (*Leiden University Medical Center*); Zhong, Liang\* (*National Heart Centre Singapore*)

10:45-11:00 ThBT3.4  
**A Novel 4D Semi-Automated Algorithm for Volumetric Segmentation in Echocardiography**  
 Krishnaswamy, Deepa\* (*University of Alberta*); Rakkunedeth Hareendranathan, Abhilash (*University of Alberta*); Suwatanaviroj, Tan (*Mazankowski Alberta Heart Institute, University of Alberta, Edmonton*); Boulanger, Pierre (*University of Alberta*); Becher, Harald (*Mazankowski Alberta Heart Institute, University of Alberta, Edmonton*); Noga, Michelle (*University of Alberta*); Punithakumar, Kumaradevan (*University of Alberta*)

11:00-11:15 ThBT3.5  
**Multiview Sequential Learning and Dilated Residual Learning for a Fully Automatic Delineation of the Left Atrium and Pulmonary Veins from Late Gadolinium-Enhanced Cardiac MRI Images**  
 Yang, Guang\* (*Imperial College London*); Chen, Jun (*Shenzhen Inst. of Advanced Tech., Chinese Academy of Sciences*); Gao, Zhifan (*Shenzhen Inst. of Advanced Tech., Chinese Academy of Sciences*); Zhang, Heye (*Hong Kong Univ. of Science & Tech*); Ni, Hao (*Univ. College London*); Angelini, Elsa (*Imperial NIHR BRC, Imperial College London*); Mohiaddin, Raad (*Imperial College London*); Wong, Tom (*Imperial College London*); Keegan, Jennifer (*Imperial College London*); Firmin, David (*Imperial College London*)

11:15-11:30 ThBT3.6  
**Improving Visual Detection of Wall Motion Abnormality with Echocardiographic Image Enhancing Methods**  
 Omar, Hasmila\* (*Oxford University*); Domingos, Joao (*University of Oxford*); Patra, Arijit (*Oxford University*); Leeson, Paul (*John Radcliffe Hospital*); Noble, J Alison (*University of Oxford*)

ThBT4: 10:00-11:30 Meeting Room 315  
**Minisymposia: Recent Innovations and New Health-Related Applications of Electrical Bioimpedance (3662q)** (Minisymposium)  
**Chair:** Sanchez, Benjamin (*Harvard Medical School*)

10:00-10:15 ThBT4.1  
**Applying Localized Electrical Bioimpedance for Monitoring Exercise-Induced Fatigue**  
 Freeborn, Todd\* (*University of Alabama*)

10:15-10:30 ThBT4.2  
**Multimodal Electrical Impedance Tomography (EIT): Advances in EIT-Coupled Ultrasound Imaging**  
 Halter, Ryan\* (*Dartmouth College*)

10:30-10:45 ThBT4.3  
**Clinical Applications of EIT in Pulmonary Medicine**  
 Woo, Eung Je\* (*Kyung Hee University*); Oh, Tong In (*Kyung Hee University*); Wi, Hun (*Kyung Hee University*)

10:45-11:00 ThBT4.4  
**Wearable Electrical Bioimpedance for Detecting Joint Edema**  
 Hersek, Sinan (*Georgia Institute of Technology*); Mabrouk, Samer (*Georgia Institute of Technology*); Inan, Omer\* (*Georgia Institute of Technology*)

ThBT5: 10:00-11:30 Meeting Room 316A  
**Invited Session: Machine Learning / Deep Learning for Medical Image Analysis (85dkb)** (Invited Session)  
**Chair:** Gonzalez Ballester, Miguel Angel (*ICREA & Universitat Pompeu Fabra*)  
**Co-Chair:** Schnabel, Julia (*King's College London*)

10:00-10:15 ThBT5.1  
**Deep Learning for Image Reconstruction and Super-Resolution: Applications in Cardiac MR Imaging**  
 Schlemper, Jo (*Imperial College London*); Oktay, Ozan (*Imperial College London*); Rueckert, Daniel\* (*Imperial College London*)

10:15-10:30 ThBT5.2  
**Machine Learning for Cancer Imaging**  
 Schnabel, Julia\* (*King's College London*); Bates, Russell (*University of Oxford*); Grau, Vicente (*University of Oxford*); Brady, Michael (*University of Oxford*)

10:30-10:45 ThBT5.3  
**Machine Learning for Medical Image Analysis and Decision Support in Cardiology, Neurodegenerative Diseases and Fetal Surgery**  
 Gonzalez Ballester, Miguel Angel\* (*ICREA & Universitat Pompeu Fabra*)

10:45-11:00 ThBT5.4  
**Deep Learning for Cardiovascular CT Analysis**  
 Isgum, Ivana\* (*University Medical Center Utrecht*); Wolterink, Jelmer Maarten (*University Medical Center Utrecht*); de Vos, Bob D. (*UMCU*); Lessmann, Nikolas (*UMC Utrecht*); Zreik, Majd (*University Medical Center Utrecht*); van Velzen, Sanne G. M. (*University Medical Center Utrecht*); de Jong, Pim A. (*University Medical Center Utrecht*); Leiner, Tim (*University Medical Center Utrecht*); Viergever, Max A. (*University Medical Center Utrecht*)

11:00-11:15 ThBT5.5  
**Transfer Learning for Biomedical Image Analysis across Scanners**  
 de Bruijne, Marleen\* (*Erasmus MC – Univ. Medical Center Rotterdam*)

ThBT6: 10:00-11:30 Meeting Room 316B  
**Invited Session: Artificial Vision: Latest Progress and Challenges Ahead (58q8k)** (Invited Session)  
**Chair:** Fried, Shelley (*Massachusetts General Hospital / Harvard Medical School*)  
**Co-Chair:** Chan, Leanne LH (*City University of Hong Kong*)

10:00-10:15 ThBT6.1  
**Progress in Photovoltaic Restoration of Sight**  
 Palanker, Daniel\* (*Stanford University*); Lorach, Henri (*Stanford University*); Kamins, Ted (*Stanford University*); Mathieson, Keith (*University of Strathclyde*); Sher, Alexander (*UC Santa Cruz*); Flores, Thomas (*Stanford University*)

10:15-10:30 ThBT6.2  
**Visual and Electric Spiking Signatures of Seven Types of Rabbit Retinal Ganglion Cells**  
 Werginz, Paul\* (*Massachusetts General Hospital / Harvard Medical School*); Im, Maesoon (*Henry Ford Health System*); Hadjinicolaou, Alex E. (*Australian College of Optometry*); Fried, Shelley (*Massachusetts General Hospital / Harvard Medical School*)

10:30-10:45 ThBT6.3  
**Optimizing the Performance of Retinal Neuroprostheses with High-Frequency Electrical Stimulation**  
 Lovell, Nigel H.\* (*University of New South Wales*); Guo, Tianruo (*University of New South Wales*); Dokos, Socrates (*University of New South Wales*); Suanning, Gregg (*University of Sydney*); Morley, John William (*University of Western Sydney*)

10:45-11:00 ThBT6.4  
**Selective Stimulation of the Retina for Improved Acuity**  
 Weiland, James\* (*Univ. of Michigan*); Chang, Yao-Chuan (*Univ. of Southern California*); Weitz, Andrew (*Univ. of Southern California*); Chow, Robert (*Univ. of Southern California*)

11:00-11:15 ThBT6.5  
**Voltage-Sensitive Dye Neural Imaging for Testing and Designing Stimuli in Visual Prostheses**  
 Hayashida, Yuki\* (*Osaka University*)

11:15-11:30 ThBT6.6  
**Retinal Neuromodulation and the Neural Code – Lost in Translation?**  
 Suanning, Gregg\* (*University of Sydney*); Morley, John William (*University of Western Sydney*); Lovell, Nigel H. (*University of New South Wales*); Guo, Tianruo (*University of New South Wales*); Dokos, Socrates (*University of New South Wales*); Barriga-Rivera, Alejandro (*University Pablo de Olavide*)

ThBT7: 10:00-11:30 Meeting Room 316C  
**Minisymposia: Robotic Neurorehabilitation: The State-of-Science (m228a)** (Minisymposium)  
**Chair:** Patton, James (*University Illinois at Chicago (UIC) & The Shirley Ryan AbilityLab (formerly RIC)*)

10:00-10:15 ThBT7.1  
**Rehabilitation, Personal Mobility and Recreation with Wearable Exoskeletons**  
 Jayaraman, Arun\* (*Rehabilitation Institute of Chicago and Northwestern University*); Rymer, William Zev (*Northwestern & Rehab Inst of Chicago*)

10:15-10:30 ThBT7.2  
**Using Technology to Alter Hand Activation Patterns after Stroke**  
 Kamper, Derek\* (*North Carolina State University*); Barry, Alexander (*Shirley Ryan AbilityLab*); Triandafilou, Kristen M. (*Rehabilitation Institute of Chicago*); Ghassemi, Mohammad (*North Carolina State University*); Roth, Elliot (*Rehabilitation Institute of Chicago*)

10:30-10:45 ThBT7.3  
**Compelling the Nervous System into Recovering**  
 Brown, David\* (UAB)

10:45-11:00 ThBT7.4  
**Complementary Technology to Support Human Locomotion**  
 Vallery, Heike\* (TU Delft)

11:00-11:15 ThBT7.5  
**Deceiving the Nervous System into Recovering**  
 Patton, James\* (University Illinois at Chicago (UIC) & The Shirley Ryan AbilityLab (formerly RIC)); Huang, Felix (Shirley Ryan AbilityLab); Wright, Zachary (University of Illinois at Chicago, Shirley Ryan AbilityLab); Parmar, Pritesh (University of Illinois)

ThBT8: 10:00-11:30 Meeting Room 318A  
**Invited Session: Wearable EEG for Real-Life Brain Monitoring (b2411)** (Invited Session)  
**Chair:** De Vos, Maarten (University of Oxford)  
**Co-Chair:** Kidmose, Preben (Aarhus University, Denmark)

10:00-10:15 ThBT8.1  
**Real-Life Ear-EEG**  
 Kappel, Simon Lind\* (Aarhus University, Denmark); Kidmose, Preben (Aarhus University, Denmark)

10:15-10:30 ThBT8.2  
**The Ceegrid: Transparent Electroencephalography (EEG) Acquisition**  
 Bleichner, Martin G.\* (University of Oldenburg); Debener, Stefan (University of Oldenburg)

10:30-10:45 ThBT8.3  
**The Effect of Miniaturization and Galvanic Separation of EEG Sensor Nodes in an Auditory Attention Detection Task**  
 Mundanad Narayanan, Abhijith\* (KU Leuven); Bertrand, Alexander (KU Leuven, University of Leuven)

10:45-11:00 ThBT8.4  
**EEG and EMG Electronic-Tattoo for Neurological Evaluation**  
 Shustak, Shiran\* (Tel Aviv University); Steinberg, Stanislav (Tel Aviv University); Inzelberg, Lilah (Tel Aviv University); Hillel, Inbar (Tel Aviv Sourasky Medical Center); Rand, David (Tel Aviv University); David Pur, Moshe (Tel Aviv University); Fahoum, Firas (Tel Aviv Sourasky Medical Center); Mirelman, Anat (Tel Aviv Sourasky Medical Center); Hanein, Yael (Tel Aviv University)

11:00-11:15 ThBT8.5  
**A Correlation-Based Learning Approach to Determining Listening Attention from EEG Signals**  
 Alickovic, Emina\* (Linköping University); Gustafsson, Fredrik (Dept. of Electrical Engineering, Linköping University); Lunner, Thomas (Eriksholm Research Centre - Part of Oticon)

11:15-11:30 ThBT8.6  
**Automated Analysis of Ear-EEG for Personalized Sleep Monitoring**  
 Mikkelsen, Kaare (Univ. of Aarhus); Sterr, Annette (Univ. of Surrey); Debener, Stefan (Univ. of Oldenburg); Dijk, Derk-Jan (Univ. of Surrey); De Vos, Maarten\* (Univ. of Oxford)

ThBT9: 10:00-11:30 Meeting Room 318B  
**Invited Session: New Trends in Perinatal and Pediatric Imaging (hk924)** (Invited Session)  
**Chair:** Lepore, Natasha (USC / Children's Hospital Los Angeles)  
**Co-Chair:** Linguraru, Marius George (Children's National Health System)

10:00-10:15 ThBT9.1  
**Pediatric Craniofacial Image Analysis: A Software Perspective**  
 Paniagua, Beatriz\* (Kitware, Inc.); Linguraru, Marius George (Children's National Health System); Cevitanes, Lucia (Univ. of Michigan, School of Dentistry, Dept. of Orthodontics); McCormick, Matt (Kitware, Inc.); Fillion-Robin, Jean-Christophe (Kitware, Inc.); Fishbaugh, James (NYU Tandon School of Eng.); Gerig, Guido (NYU Tandon School of Eng.); Enquobahrie, Andinet (Kitware, Inc.)

10:15-10:30 ThBT9.2  
**Fetal Skull Reconstruction using Deep Convolutional Autoencoders**  
 Cerrolaza, Juan J.\* (Imperial College London); Li, Yuanwei (Imperial College London); Biffi, Carlo (Imperial College London); Gomez, Alberto (King's College London); Matthew, Jacqueline (King's College London); Sinclair, Matthew (Imperial College London); Gupta, Chandni (King's College London); Knight, Caroline (King's College London); Rueckert, Daniel (Imperial College London)

10:30-10:45 ThBT9.3  
**Personalized, Quantitative and Automatic Treatment Planning of Craniosynostosis**  
 Porras, Antonio R. (Children's National Medical Center); Tu, Liyun (Children's National Health System); Paniagua, Beatriz (Kitware, Inc.); Enquobahrie, Andinet (Kitware, Inc.); Keating, Robert (Children's National Health System); Rogers, Gary (Children's National Health System); Linguraru, Marius George\* (Children's National Health System)

10:45-11:00 ThBT9.4  
**Cortical Surface-Based Baby Brain Mapping**  
 Li, Gang\* (University of North Carolina at Chapel Hill); Wang, Li (University of North Carolina at Chapel Hill); Lin, Weili (University of North Carolina at Chapel Hill); Shen, Dinggang (University of North Carolina at Chapel Hill)

11:00-11:15 ThBT9.5  
**Perinatal Imaging, Image Analysis, Machine Learning and Computer-Assisted Surgery**  
 Gonzalez Ballester, Miguel Angel\* (ICREA & Univ. Pompeu Fabra)

11:15-11:30 ThBT9.6  
**Human-Level Performance on Automatic Head Biometrics in Fetal Ultrasound using Fully Convolutional Neural Networks**  
 Sinclair, Matthew\* (Imperial College London); Baumgartner, Christian Frederik (ETH Zürich); Matthew, Jacqueline (King's College London); Bai, Wenjia (Imperial College London); Cerrolaza, Juan J. (Imperial College London); Li, Yuanwei (Imperial College London); Smith, Sandra (King's College London); Knight, Caroline (King's College London); Kainz, Bernhard (Imperial College London); Hajnal, Joseph V. (King's College London); King, Andrew Peter (King's College London); Rueckert, Daniel (Imperial College London)

ThBT10: 10:00-11:30 Meeting Room 319A  
**Invited Session: Sensors and Actuators for 3D Constructs of Living Cells (ke7r3)** (Invited Session)  
**Chair:** Wiest, Joachim (cellasys GmbH)

10:00-10:15 ThBT10.1  
**A Microfluidic Bioreactor for a Physiologic Bone-on-a-Chip System**  
 Schulze, Frank\* (German Federal Institute for Risk Assessment)

10:15-10:30 ThBT10.2  
**Magnetic versus Electromagnetic-Fields and the Specific Low Frequent Application in Biophysics**  
 Koch, Martin\* (Feldkraft Ltd.); Wiest, Joachim (cellasys GmbH)

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10:30-10:45 ThBT10.3  
**From Operating Heavy Duty Electric Machines to Application of Magnetic Particles Inside Living Cells/Cell-Spheres**  
 Koch, Martin\* (*Feldkraft Ltd.*); Wiest, Joachim (*cellasys GmbH*)

10:45-11:00 ThBT10.4  
**Systems Engineering for Microphysiometry**  
 Wiest, Joachim\* (*cellasys GmbH*)

ThBT11: 10:00-11:30 Meeting Room 319B  
**Invited Session: Signals and Systems for Hearing Study and Hearing Aids (m486w)** (Invited Session)  
**Chair:** Panahi, Issa (*University of Texas at Dallas*)

10:00-10:15 ThBT11.1  
**Why Noise Reduction is so Critical for the Impaired Auditory System**  
 Yoho, Sarah\* (*Utah State Univ.*); Healy, Eric (*The Ohio State Univ.*)

10:15-10:30 ThBT11.2  
**Mobile Research Platform for Hearing Research**  
 Hansen, John H.L.\* (*University of Texas at Dallas*); Ali, Hussnain (*University of Texas at Dallas*); Saba, Juliana (*University of Texas at Dallas*; *CRSS - Cochlear Implant Processing Lab*)

10:30-10:45 ThBT11.3  
**Speech Signal Processing for Hearing Aids using Smartphone**  
 Panahi, Issa\* (*University of Texas at Dallas*); Thibodeau, Linda (*University of Texas at Dallas*); Kehtarnavaz, Nasser (*University of Texas at Dallas*)

10:45-11:00 ThBT11.4  
**Multimodal Signal Processing and Machine Learning for Hearing Devices with Both Audio and Non-Audio Sensors: A New Frontier**  
 Zhang, Tao\* (*Starkey Hearing Technologies*)

ThBT12: 10:00-11:30 Meeting Room 321A  
**Invited Session: Progress in Fetal Monitoring Technologies (rm5q6)** (Invited Session)  
**Chair:** Khandoker, Ahsan H (*Khalifa University of Science, Technology and Research*)  
**Co-Chair:** Alangari, Haitham M. (*Khalifa University*)

10:00-10:15 ThBT12.1  
**Fetal Congenital Heart Defects Change the Fetal-Maternal Heart Rate Coupling Strength**  
 Alangari, Haitham M.\* (*Khalifa University*); Khandoker, Ahsan H (*Khalifa University of Science, Technology and Research*)

10:15-10:30 ThBT12.2  
**Time-Variant Maternal-Fetal Cardiac Coupling**  
 Schulz, Steffen (*Univ. of Applied Sciences Jena*); Khandoker, Ahsan (*Khalifa Univ.*); Voss, Andreas\* (*Univ. of Applied Sciences Jena*)

ThBT13: 10:00-11:30 Meeting Room 321B  
**MR Neuroimaging (Theme 2)** (Oral Session)  
**Chair:** de Bruijne, Marleen (*Erasmus MC - University Medical Center Rotterdam*)  
**Co-Chair:** Ma, Heather Ting (*Harbin Institute of Technology Shenzhen Graduate School*)

10:00-10:15 ThBT13.1  
**The Correlation Analysis between DTI Network Parameters and AVLT Scale Scores of Alzheimer's Disease**  
 Guo, Xin (*Harbin Institute of Technology Shenzhen Graduate School*); Gao, Na (*Harbin Institute of Technology*); Wang, Yan (*Harbin Institute of Technology Shenzhen Graduate School*); Yang, Yanwu (*Harbin Institute of Technology Shenzhen Graduate School*); Ma, Heather Ting\* (*Harbin Institute of Technology Shenzhen Graduate School*)

10:15-10:30 ThBT13.2  
**Left Fimbria Atrophy is Associated with Hippocampal Metabolism in Female Major Depressive Disorder Patients**  
 Xu, Jiale (*Shanghai Jiao Tong University, School of BioMedical Engineering and Institute for Medical Imaging Technology*); Tang, Yingying (*Shanghai Mental Health Center, Shanghai Jiao Tong University School of Medicine*); Baro, Cecilio (*Shanghai Jiao Tong University, School of BioMedical Engineering*); Zhang, Xiaoliu (*Shanghai Jiao Tong University, School of BioMedical Engineering*); Meng, Ziyu (*Shanghai Jiao Tong University*); Li, Yao\* (*Shanghai Jiao Tong University*)

10:30-10:45 ThBT13.3  
**Multivariate Analysis of White Matter Structural Networks of Alzheimer's Disease**  
 Ye, Chenfei (*Harbin Institute of Technology Shenzhen Graduate School*); Wang, Xiaoni (*XuanWu Hospital of Capital Medical University*); Han, Ying (*XuanWu Hospital of Capital Medical University*); Ma, Heather Ting\* (*Harbin Institute of Technology Shenzhen Graduate School*); Yang, Yanwu (*Harbin Institute of Technology Shenzhen Graduate School*)

10:45-11:00 ThBT13.4  
**Altered Fractional Amplitude of Low Frequency Fluctuations in Unmedicated Female Patients with Obsessive-Compulsive Disorder**  
 Meng, Ziyu (*Shanghai Jiao Tong University*); Zhang, Zongfeng (*Shanghai Mental Health Center, Shanghai Jiao Tong University School of Medicine*); Fan, Qing (*Shanghai Mental Health Center, Shanghai Jiao Tong University School of Medicine*); Li, Yao\* (*Shanghai Jiao Tong University*)

11:00-11:15 ThBT13.5  
**Diagnostic Classification of Autism using Resting-State fMRI Data and Conditional Random Forest**  
 A.R., Jac Fredo\* (*San Diego State University*); Jahedi, Afroz (*San Diego State University*); Reiter, Maya (*San Diego State University*); Müller, Ralph-Axel (*San Diego State University*)

11:15-11:30 ThBT13.6  
**Biomarkers for Adolescent MDD from Anatomical Connectivity and Network Topology using Diffusion MRI**  
 Chu, Shu-Hsien\* (*University of Minnesota*); Lenglet, Christophe (*University of Minnesota*); Westlund Schreiner, Melinda (*University of Minnesota*); Klimes-Dougan, Bonnie (*University of Minnesota*); Cullen, Kathryn R. (*University of Minnesota*); Parhi, Keshab (*University of Minnesota*)

ThBT14: 10:00-11:30 Meeting Room 322AB  
**Minisymposia: Non-Contact and Remote Measurement of Blood Pressure and Perfusion Based on Video Pulse Waves (i19sv)** (Minisymposium)  
**Chair:** Yoshizawa, Makoto (*Tohoku University*)  
**Co-Chair:** Tanaka, Akira (*Fukushima University*)

10:00-10:15 ThBT14.1  
**A Basic Study on Noncontact Pulse Transit Time Estimation using Camera and Microwave Sensor**  
 Yoshioka, Mototaka\* (*Panasonic Corp.*); Bounyong, Souksakhone (*Panasonic Corp.*)

10:15-10:30 ThBT14.2  
**Extraction of Blood Pressure Information from Video Plethysmography**  
 Sugita, Norihiro\* (*Tohoku Univ.*); Yoshizawa, Makoto (*Tohoku Univ.*); Tanaka, Akira (*Fukushima Univ.*); Abe, Makoto (*Shinshu Univ.*); Homma, Noriyasu (*Tohoku Univ. Graduate School of Medicine*); Yambe, Tomoyuki (*Tohoku Univ.*)

10:30-10:45 ThBT14.3  
**Application of Non-Contact Video Plethysmography to Analysis of Local Vascular Regulation**  
 Tanaka, Akira\* (*Fukushima University*); Yamada, Yuya (*Graduate School of Symbiotic System Science and Technology, Fukushima University*); Yoshizawa, Makoto (*Tohoku University*)

ThBT15: 10:00-11:30 Meeting Room 323A  
**Invited Session: Recent Advances in System, Algorithm and Applications of Diagnostic Ultrasound Imaging Modality (mrn47)** (Invited Session)  
**Chair:** Managuli, Ravi (*Hitachi Aloka Medical America, Inc.*)  
**Co-Chair:** Kim, Hyung Ham (*Pohang Univ. of Science and Technology*)

10:00-10:15 ThBT15.1  
**Single Cell Mechanics Study using Single-Beam Acoustic Tweezers**  
 Kim, Hyung Ham\* (*Pohang Univ. of Science and Technology*);  
 Lim, Hae Gyun (*Pohang Univ. of Science and Technology*)

10:15-10:30 ThBT15.2  
**Recent Advances in Ultrasound Imaging: Breast, Liver and Contrast**  
 Managuli, Ravi\* (*Hitachi Aloka Medical America, Inc.*)

10:30-10:45 ThBT15.3  
**Development of 3D Photoacoustic Imaging System and Its Clinical Translation**  
 Shiina, Tsuyoshi\* (*Kyoto University*)

10:45-11:00 ThBT15.4  
**A New Surgical Approach to Treat the Resistant Hypertension**  
 Park, Sung-Min\* (*POSTECH*); Baik, Jinhwan (*POSTECH*)

11:00-11:15 ThBT15.5  
**Introducing Diagnostic Ultrasound Course in Undergraduate BME Programs**  
 Krishnan, Shankar\* (*WIT*)

ThBT16: 10:00-11:30 Meeting Room 323B  
**Invited Session: Biologically Inspired Regenerative Systems (r5h4u)** (Invited Session)  
**Chair:** Jabbari, Esmail (*University of South Carolina*)  
**Co-Chair:** Varghese, Shyni (*University of California- San Diego*)

10:00-10:15 ThBT16.1  
**Paper-Based Biomaterials for Personalized Medicine and Regenerative Engineering**  
 Camci-Unal, Gulden\* (*University of Massachusetts Lowell*)

10:15-10:30 ThBT16.2  
**Functionally Graded Biomaterials for Tissue Regeneration**  
 Yang, Yunzhi\* (*Stanford University*)

10:30-10:45 ThBT16.3  
**Biomaterialized Materials as Bone ECM Mimetics: From Understanding Molecular Mechanisms to New Therapeutic Interventions**  
 Varghese, Shyni\* (*University of California - San Diego*)

10:45-11:00 ThBT16.4  
**Zonal Regeneration of Articular Cartilage**  
 Jabbari, Esmail\* (*University of South Carolina*)

ThBT17: 10:00-11:30 Meeting Room 323C  
**Physiological Modeling and Analysis (Theme 7)** (Oral Session)

10:00-10:15 ThBT17.1  
**Investigation of Key Variables Impacting ICM Sensing using Computer Simulations**  
 Sun, Stephanie\* (*Abbott*); Min, Xiaoyi (*St. Jude Medical, Inc.*);  
 Healey, Glenn (*University of California, Irvine*)

10:15-10:30 ThBT17.2  
**Monitoring Lung Mechanics during Mechanical Ventilation using Machine Learning Algorithms**  
 Hezarjaribi, Niloofar\* (*Washington State University*); Dutta, Rabijit (*University of Idaho*); Tao, Xing (*University of Idaho*); Gordon, Murdoch (*University of Idaho*); Mazrouee, Sepideh (*University of California San Diego*); Mortazavi, Bobak (*Texas A&M University*);  
 Ghasemzadeh, Hassan (*Washington State University*)

10:30-10:45 ThBT17.3  
**Synthetic Sensor Data Generation for Health Applications: A Supervised Deep Learning Approach**  
 Norgaard, Skyler (*Kalamazoo College*); Saeedi, Ramyar (*Washington State Univ.*); Sasani, Keyvan (*Washington State Univ.*); Gebremedhin, Assefaw\* (*Washington State Univ.*)

10:45-11:00 ThBT17.4  
**Comparisons of Oscillometric Blood Pressure Measurements at Different Sites of the Upper Limb**  
 Liu, Jing\* (*Chinese University of Hong Kong*); Ou, Yanghai (*Hong Kong University of Science and Technology*); Yan, Bryan P. (*Prince of Wales Hospital, Chinese University of Hong Kong*);  
 Sodini, Charles (*Massachusetts Institute of Technology*);  
 Zhao, Ni (*Chinese University of Hong Kong*)

11:00-11:15 ThBT17.5  
**Vomit Comet Physiology: Autonomic Changes in Novice Flyers**  
 Johnson, Kristina\* (*Massachusetts Institute of Technology*);  
 Taylor, Sara (*Massachusetts Institute of Technology*); Fedor, Szymon (*Massachusetts Institute of Technology*); Jaques, Natasha (*Massachusetts Institute of Technology*); Chen, Weixuan (*Massachusetts Institute of Technology*); Picard, Rosalind (*Massachusetts Institute of Technology*)

11:15-11:30 ThBT17.6  
**A Novel Synthetic Simulation Platform for Validation of Breathing Rate Measurement**  
 Selvaraj, Nandakumar\* (*VitalConnect, Inc.*); Nallathambi, Gabriel (*VitalConnect, Inc.*); Kettle, Paul (*PKettle Consulting*)

ThBT18: 10:00-11:30 Meeting Room 324  
**Wearable Systems (Theme 7)** (Oral Session)  
**Chair:** Samadani, Ali (*Philips Research North America*)

10:00-10:15 ThBT18.1  
**Efficient Design of Real Time Bio-Signal Preprocessing for Wearable Devices**  
 Yoon, Seung Keun\* (*Samsung Advanced Institute of Tech.*); Lee, Jongwook (*Samsung Electronics*); Kwon, Uikun (*Samsung Electronics*); Ko, Byung-Hoon (*Samsung Advanced Institute of Tech.*); Kim, Youn Ho (*Samsung Advanced Institute of Tech.*)

10:15-10:30 ThBT18.2  
**Optimizing Energy Harvesting for Foot based Wearable Sensors**  
 Beach, Christopher\* (*Univ. of Manchester*); Green, Peter R (*Univ. of Manchester*); Casson, Alexander James (*Univ. of Manchester*)

10:30-10:45 ThBT18.3  
**A Spinal Motion Measurement Protocol Utilizing Inertial Sensors without Magnetometers**  
 Samadani, Ali\* (*Philips Research North America*); Lee, Alex (*Motion Signature Analysis*); Kulic, Dana (*University of Waterloo*)

10:45-11:00 ThBT18.4  
**Personalized Human Activity Recognition using Wearables: A Manifold Learning-Based Knowledge Transfer**  
 Saeedi, Ramyar\* (*Washington State University*); Sasani, Keyvan (*Washington State University*); Norgaard, Skyler (*Kalamazoo College*); Gebremedhin, Assefaw (*Washington State University*)

11:00-11:15 ThBT18.5  
**Tracking Kinematic and Kinetic Measures of Sit to Stand using an Instrumented Spine Orthosis**  
 Matthew, Robert Peter\* (*UC Berkeley*); Seko, Sarah (*UC Berkeley*); Bailey, Jeannie (*University of California at San Francisco*); Bajcsy, Ruzena (*UC Berkeley, CITRIS*); Lotz, Jeffrey (*Orthopaedic Surgery, University of California at Berkeley*)



11:15-11:30	ThBT18.6	<b>A Machine Learning Approach to Targeted Balance Rehabilitation in People with Parkinson's Disease using a Sparse Sensor Set</b> Pickle, Nathaniel ( <i>University of Texas at Dallas</i> ); Shearin, Staci ( <i>The University of Texas Southwestern Medical Center</i> ); Fey, Nicholas* ( <i>University of Texas at Dallas</i> )	ThBT20: 10:00-11:30	Meeting Room 325B	<b>Invited Session: Computational Human Models (IV) Brain Stimulation (75in3)</b> (Invited Session)
ThBT19: 10:00-11:30	Meeting Room 325A	<b>Minisymposia: Emerging Methods in Medical Image Analysis (II) (1agah)</b> (Minisymposium) <b>Chair:</b> Lee, Gobert ( <i>Flinders University</i> ) <b>Co-Chair:</b> Fujita, Hiroshi ( <i>Gifu University</i> )	10:00-10:15	ThBT20.1	<b>SimNIBS 2: A Comprehensive Pipeline for Individualized Electric Field Modeling for Transcranial Brain Stimulation</b> Bicalho Saturnino, Guilherme ( <i>Technical University of Denmark</i> ); Antunes, Andre ( <i>Medtronic</i> ); Nielsen, Jesper D. ( <i>Copenhagen University Hospital Hvidovre, Denmark &amp; Dept. of Applied Mathematics and Computer Science, Technical University of Denmark</i> ); Puonti, Oula ( <i>Copenhagen University Hospital Hvidovre, Denmark &amp; Dept. of Electrical Engineering, Technical University of Denmark, Denmark</i> ); Madsen, Kristoffer H. ( <i>Copenhagen University Hospital Hvidovre, Denmark &amp; Dept. of Applied Mathematics and Computer Science, Technical University of Denmark</i> ); Thielscher, Axel* ( <i>Copenhagen University Hospital Hvidovre, Denmark &amp; BioMedical Engineering Section</i> )
10:00-10:15	ThBT19.1	<b>Deep Convolutional Neural Network for Medical Image Analysis – A Few Issues</b> Lee, Gobert* ( <i>Flinders University</i> )	10:15-10:30	ThBT20.2	<b>Fast Multipole Method for Rapid Modeling of Transcranial Brain Stimulation Problems</b> Makarov, Sergey* ( <i>Electrical and Computer Engineering, Worcester Polytechnic Institute</i> ); Noetscher, Gregory ( <i>Worcester Polytechnic Institute</i> ); Raij, Tommi ( <i>Northwestern University Institute of Neuroscience</i> ); Nummenmaa, Aapo ( <i>Massachusetts General Hospital</i> )
10:15-10:30	ThBT19.2	<b>Deep Learning for Pulmonary Image Analysis: Classification, Detection, and Segmentation</b> Kido, Shoji* ( <i>Graduate School of Science and Technology for Innovation, Yamaguchi University</i> ); Hirano, Yasushi ( <i>Yamaguchi University</i> ); Hashimoto, Noriaki ( <i>Yamaguchi University</i> ); Mabu, Shingo ( <i>Yamaguchi University</i> )	10:30-10:45	ThBT20.3	<b>Electric Field Induced by Electroconvulsive Therapy in Patients with Major Depression</b> Deng, Zhi-De* ( <i>National Institute of Mental Health</i> ); Fridgeirsson, Egill Axfjord ( <i>Dept. of Psychiatry, Academic Medical Center, Amsterdam</i> ); Lilien, Joseph ( <i>Duke University</i> ); van Wingen, Guido ( <i>Academic Medical Center Amsterdam</i> ); Van Waarde, Jeroen Antonius ( <i>Rijnstate Hospital</i> )
10:30-10:45	ThBT19.3	<b>Automatic Segmentation of Multiple Organs on 3D CT Images by using a Deep Learning Approach</b> Zhou, Xiangrong* ( <i>Gifu University</i> ); Hara, Takeshi ( <i>Gifu University Graduate School of Medicine</i> ); Fujita, Hiroshi ( <i>Gifu University</i> )	10:45-11:00	ThBT20.4	<b>Head Models for Computing Brain Electrical Fields in Transcranial Stimulation</b> Bai, Siwei ( <i>Technical University of Munich</i> ); Loo, Colleen ( <i>School of Psychiatry, University of New South Wales</i> ); Martin, Donel ( <i>School of Psychiatry, University of New South Wales</i> ); Dokos, Socrates* ( <i>University of New South Wales</i> )
10:45-11:00	ThBT19.4	<b>Skeletal Feature Recognition and Skeletal Muscle Modeling for Skeletal Muscle Analysis in Whole-Body CT Images</b> Kamiya, Naoki* ( <i>Aichi Prefectural Univ.</i> ); Zheng, Guoyan ( <i>Univ. of Bern</i> ); Zhou, Xiangrong ( <i>Gifu Univ.</i> ); Muramatsu, Chisako ( <i>Gifu Univ.</i> ); Hara, Takeshi ( <i>Gifu Univ. Graduate School of Medicine</i> ); Fujita, Hiroshi ( <i>Gifu Univ.</i> )	11:00-11:15	ThBT20.5	<b>Integrating Accurate Neuronal Models with Electric Field Simulations of Transcranial Brain Stimulation</b> Abera, Aman* ( <i>Duke University</i> ); Grill, Warren ( <i>Duke University</i> ); Peterchev, Angel V ( <i>Duke University</i> )
11:00-11:15	ThBT19.5	<b>Image Registration for Detection of Sclerotic Bone Metastasis in CT Images</b> Kim, Hyoungseop* ( <i>Kyushu Institute of Technology</i> ); Lu, Huimin ( <i>Kyushu Institute of Technology</i> ); Tan, Joo Kooi ( <i>Kyushu Institute of Technology</i> ); Murakami, Seiichi ( <i>University of Occupational &amp; Environmental Health</i> ); Aoki, Takatoshi ( <i>University of Occupational and Environmental Health</i> )	11:15-11:30	ThBT20.6	<b>Electric Field Induced by Repetitive Transcranial Magnetic Stimulation in Patients with Major Depression</b> Deng, Zhi-De* ( <i>National Institute of Mental Health</i> ); Liston, Conor ( <i>Weill Cornell Medicine</i> ); Gunning, Faith ( <i>Weill Cornell Medicine</i> ); Dubin, Marc ( <i>Weill Cornell Medical College</i> )
11:15-11:30	ThBT19.6	<b>Decision Support System for Lung Cancer using PET/CT and Microscopic Images</b> Teramoto, Atsushi* ( <i>Fujita Health University</i> ); Yamada, Ayumi ( <i>Fujita Health University</i> ); Tsukamoto, Tetsuya ( <i>Fujita Health University</i> ); Kiriya, Yuka ( <i>Fujita Health University</i> ); Tsujimoto, Masakazu ( <i>Fujita Health University</i> ); Inoue, Takahiro ( <i>Fujita Health University</i> ); Imaizumi, Kazuyoshi ( <i>Fujita Health University</i> ); Toyama, Hiroshi ( <i>Fujita Health University</i> ); Saito, Kuniaki ( <i>Fujita Health University</i> ); Fujita, Hiroshi ( <i>Gifu University</i> )	ThCT1: 13:30-15:00	Meeting Room 311	<b>Sensory Neuroprostheses (Theme 6)</b> (Oral Session) <b>Chair:</b> Suanning, Gregg ( <i>University of Sydney</i> ) <b>Co-Chair:</b> Weiland, James ( <i>University of Michigan</i> )
11:15-11:30	ThBT19.7	<b>Learning Sample Generation for Detecting Liver Cancer using 3D-CNN</b> Mekada, Yoshito* ( <i>Chukyo Univ.</i> ); Doman, Keisuke ( <i>Chukyo Univ.</i> )	13:30-13:45	ThCT1.1	<b>An Investigation of the Effect of AGC Gain on the Output Signal to Noise Ratio in Cochlear Implant Sound Processing</b> Watkins, Gregory Douglas* ( <i>Sydney University</i> ); Swanson, Brett Anthony ( <i>Cochlear Ltd.</i> ); Suanning, Gregg ( <i>University of Sydney</i> )

13:45-14:00	ThCT1.2	<b>Noise-Induced Hearing Loss in Mice: Effects of High and Low Levels of Noise Trauma in CBA Mice</b> Amanipour, Reza* ( <i>Univ. of South Florida</i> ); Zhu, Xiao Xia ( <i>Univ. of South Florida</i> ); Duvey, Guillaume ( <i>Pragma Therapeutics</i> ); Celanire, Sylvain ( <i>Pragma Therapeutics</i> ); Walton, Joseph ( <i>Univ. of South Florida</i> ); Frisina, Robert ( <i>Univ. of South Florida</i> )	14:30-14:45	ThCT2.5	<b>Dimensionality Reduction based Transfer Learning Applied to Pharmacogenomics Databases</b> Dhruba, Saugato Rahman ( <i>Texas Tech Univ.</i> ); Rahman, Raziur ( <i>Texas Tech Univ.</i> ); Matlock, Kevin ( <i>Texas Tech Univ.</i> ); Ghosh, Souparno ( <i>Texas Tech Univ.</i> ); Pal, Ranadip* ( <i>Texas Tech Univ.</i> )
14:00-14:15	ThCT1.3	<b>Recovery of the Response of Sensory Fibers to the Second of a Pair of Peripheral Nerve Stimuli</b> Brunton, Emma Kate* ( <i>Newcastle University</i> ); Silveira, Carolina ( <i>Newcastle University</i> ); Ridell, John ( <i>University of Glasgow</i> ); Nazarpour, Kianoush ( <i>Newcastle University</i> )	14:45-15:00	ThCT2.6	<b>Introducing a Combination of ICA-EMD to Suppress Muscle and Ocular Artifacts in EEG Signals</b> Santillan Guzman, Alina* ( <i>Benemérita Universidad Autónoma de Puebla</i> ); Oliveros Oliveros, José Jacobo ( <i>Benemérita Universidad Autónoma de Puebla</i> ); Morin Castillo, María Monserrat ( <i>Benemérita Universidad Autónoma de Puebla</i> )
14:15-14:30	ThCT1.4	<b>Normalized Transfer Entropy as a Tool to Identify Multisource Functional Epileptic Networks</b> Kale, Poojitha ( <i>Penn State University</i> ); Acharya, Vinita ( <i>Penn State University</i> ); Acharya, Jayant ( <i>Penn State University</i> ); Subramanian, Thyagarajan ( <i>Penn State University</i> ); Almekkawy, Mohamed* ( <i>Penn State University</i> )	ThCT3: 13:30-15:00 Meeting Room 314		<b>Deep Learning Imaging (I) (Theme 2) (Oral Session)</b> <b>Chair:</b> Toschi, Nicola ( <i>University of Rome "Tor Vergata", Faculty of Medicine</i> ) <b>Co-Chair:</b> Du, Yiping ( <i>Shanghai Jiao Tong University</i> )
14:30-14:45	ThCT1.5	<b>Electrical Field Shaping Techniques in a Feline Model of Retinal Degeneration</b> Spencer, Thomas ( <i>Bionics Institute</i> ); Fallon, James ( <i>Bionics Institute</i> ); Abbott, Carla ( <i>Centre for Eye Research Australia</i> ); Allen, Penelope J ( <i>Royal Victorian Eye and Ear Hospital</i> ); Brandli, Alice ( <i>Centre for Eye Research Australia</i> ); Luu, Chi ( <i>Centre for Eye Research Australia</i> ); Epp, Stephanie ( <i>Bionics Institute</i> ); Shivdasani, Mohit N.* ( <i>University of New South Wales</i> )	13:30-13:45	ThCT3.1	<b>Joint and Deep Ensemble Regression of Clinical Scores for Alzheimer's Disease using Longitudinal and Incomplete Data</b> Lei, Baiying* ( <i>Shenzhen University</i> ); Yang, Mengya ( <i>Shenzhen University</i> ); Hou, Wen ( <i>Shenzhen University</i> ); Yang, Peng ( <i>Shenzhen University</i> ); Li, Xia ( <i>Shenzhen University</i> ); Wang, Tianfu ( <i>Shenzhen University</i> ); Zou, Wenbin ( <i>Shenzhen University</i> ); Elazab, Ahmed ( <i>Shenzhen University</i> )
14:45-15:00	ThCT1.6	<b>Optic Nerve and Retinal Electrostimulation in Rats: Direct Activation of the Retinal Ganglion Cells</b> Barriga-Rivera, Alejandro* ( <i>Univ. Pablo de Olavide</i> ); Suaning, Gregg ( <i>Univ. of Sydney</i> ); Delgado-Garcia, Jose Maria ( <i>Univ. Pablo de Olavide</i> ); Gruart, Agnes ( <i>Univ. Pablo de Olavide</i> )	13:45-14:00	ThCT3.2	<b>Filter-Pruned 3D Convolutional Neural Network for Drowsiness Detection</b> Yao, Heming* ( <i>University of Michigan</i> ); Zhang, Wei ( <i>DENSO International America</i> ); Malhan, Rajesh ( <i>DENSO International America</i> ); Gryak, Jonathan ( <i>University of Michigan</i> ); Najarian, Kayvan ( <i>University of Michigan - Ann Arbor</i> )
ThCT2: 13:30-15:00 Meeting Room 312		<b>Independent and Principal Component Analysis (Theme 1) (Oral Session)</b> <b>Chair:</b> Boric-Lubecke, Olga ( <i>University of Hawaii Manoa</i> )	14:00-14:15	ThCT3.3	<b>Skin Lesion Analysis by Multi-Target Deep Neural Networks</b> Yang, Xulei* ( <i>Inst. for Infocomm Research, A*STAR</i> ); Li, Hangxing ( <i>National Univ. of Singapore</i> ); Wang, Li ( <i>Institute for Infocomm Research, Agency for Science, Technology and Research</i> ); Yeo, Si Yong ( <i>Inst of High Performance Computing</i> ); Su, Yi ( <i>Inst. of High Performance Computing</i> ); Zeng, Zeng ( <i>I2R, A*STAR</i> )
13:30-13:45	ThCT2.1	<b>Supervised Bayesian Source Separation of Nonlinear Mixtures for Quantitative Analysis of Gas Mixtures</b> Madrolle, Stéphanie* ( <i>University Grenoble Alpes, CEA, LETI, Minattec Campus</i> ); Duarte, Leonardo ( <i>University of Campinas</i> ); Grangeat, Pierre ( <i>University Grenoble, Alpes, CEA, LETI, Minattec Campus</i> ); Jutten, Christian ( <i>University of Grenoble</i> )	14:15-14:30	ThCT3.4	<b>A Deep Unsupervised Learning Approach Toward MTBI Identification using Diffusion MRI</b> Minaee, Shervin* ( <i>New York Univ.</i> ); Wang, Yao ( <i>Polytechnic Institute of New York Univ.</i> ); Choromanska, Anna ( <i>NYU Tandon</i> ); Chung, Sohae ( <i>NYU School of Medicine</i> ); Wang, Xiuyuan ( <i>NYU School of Medicine</i> ); Fieremans, Els ( <i>New York Univ. School of Medicine</i> ); Flanagan, Steven ( <i>New York Univ. School of Medicine</i> ); Rath, Joseph ( <i>New York Univ. School of Medicine</i> ); Lui, Yvonne ( <i>NYU School of Medicine</i> )
13:45-14:00	ThCT2.2	<b>Separation of Respiratory Signatures for Multiple Subjects using Independent Component Analysis with the JADE Algorithm</b> Islam, Shekh Md Mahmudul* ( <i>Univ. of Hawaii at Manoa</i> ); Yavari, Ehsan ( <i>Univ. of Hawaii at Manoa</i> ); Rahman, Ashikur ( <i>Univ. of Hawaii at Manoa</i> ); Lubecke, Victor ( <i>Univ. of Hawaii at Manoa</i> ); Boric-Lubecke, Olga ( <i>Univ. of Hawaii at Manoa</i> )	14:30-14:45	ThCT3.5	<b>A Multi-Modal Convolutional Neural Network Framework for the Prediction of Alzheimer's Disease</b> Spasov, Simeon ( <i>University of Cambridge</i> ); Passamonti, Luca ( <i>University of Cambridge</i> ); Duggento, Andrea ( <i>University of Rome "Tor Vergata"</i> ); Liò, Pietro ( <i>University of Cambridge</i> ); Toschi, Nicola* ( <i>University of Rome "Tor Vergata", Faculty of Medicine</i> )
14:00-14:15	ThCT2.3	<b>Removal of Electrocardiogram Interference from Diaphragmatic Electromyogram Signals using Sliding Singular Spectrum Analysis</b> Saeed, Muzammil ( <i>London South Bank University</i> ); Alty, Steve* ( <i>Royal Holloway, University of London</i> )	14:45-15:00	ThCT3.6	<b>Left Ventricle Segmentation in Cardiac MR Images using Fully Convolutional Network</b> Nasr-Esfahani, Mina ( <i>Isfahan Univ. of Technology</i> ); Mohrekesh, Majid ( <i>Isfahan Univ. of Technology</i> ); Akbari, Mojtaba ( <i>Isfahan Univ. of Technology</i> ); Soroushmehr, S.M.Reza* ( <i>Univ. of Michigan, Ann Arbor</i> ); NasrEsfahani, Ebrahim ( <i>Isfahan Univ. of Technology</i> ); Karimi, N. ( <i>Isfahan Univ. of Technology</i> ); Samavi, S. ( <i>McMaster Univ.</i> ); Najarian, K. ( <i>Univ. of Michigan - Ann Arbor</i> )
14:15-14:30	ThCT2.4	<b>Evaluation of Artifact Subspace Reconstruction for Automatic EEG Artifact Removal</b> Chang, Chi-Yuan* ( <i>University of California, San Diego</i> ); Hsu, Sheng-Hsiou ( <i>University of California, San Diego</i> ); Pion-Tonachini, Luca ( <i>University of California, San Diego</i> ); Jung, Tzzy-Ping ( <i>University of California San Diego</i> )			

ThCT4: 13:30-15:00 Meeting Room 315  
**Bio-Electric Sensors (Theme 7)** (Oral Session)  
**Chair:** Pei, Weihua (*Institute of Semiconductors, CAS*)

13:30-13:45 ThCT4.1  
**Simple, Fast and Highly Sensitive Detection of Gram-Negative Bacteria by a Novel Electrical Biosensor**  
 Wu, Jie\* (*University of Tennessee*); Cheng, Cheng (*University of Tennessee*); Yuan, Quan (*University of Tennessee*); Oueslati, Rania (*University of Tennessee*); Zhang, Jian (*Hefei University of Technology*); Chen, Jiangang (*University of Tennessee*); Almeida, Raul (*University of Tennessee*)

13:45-14:00 ThCT4.2  
**An Exploration of Behind-the-Ear ECG Signals from a Single Ear using Inkjet Printed Conformal Tattoo Electrodes**  
 Jacob, Nikhil Kurian (*University of Manchester*); Balaban, Ertan (*University of Manchester*); Saunders, Rachel Elizabeth (*University of Manchester*); Batchelor, John (*University of Kent*); Yeates, Stephen (*University of Manchester*); Casson, Alexander James\* (*University of Manchester*)

14:00-14:15 ThCT4.3  
**Low-Cost Carbon Fiber-Based Conductive Silicone Sponge EEG Electrodes**  
 Krishnan, Ashwathi\* (*Carnegie Mellon University*); Kumar, Ritesh (*Carnegie Mellon University*); Venkatesh, Praveen (*Carnegie Mellon University*); Kelly, Shawn (*Carnegie Mellon University*); Grover, Pulkit (*Carnegie Mellon University*)

14:15-14:30 ThCT4.4  
**Increased Conductivity and Reduced Settling Time of Carbon-Based Electrodes by Addition of Sea Salt for Wearable Application**  
 Noh, Yeon Sik\* (*University of Massachusetts Amherst*); Ye, Xiang (*University of Connecticut*); Murphy, Laura (*University of Connecticut*); Eaton-Robb, Caitlin (*University of Connecticut*); Dimitrov, Tanya (*University of Connecticut*); Choi, Woo Jung (*Boston University*); Chon, Ki (*University of Connecticut*)

14:30-14:45 ThCT4.5  
**Design of High-Density Electrodes for EEG Acquisition**  
 Xing, Xiao (*Institute of Semiconductors, CAS*); Pei, Weihua\* (*Institute of Semiconductors, CAS*); Wang, Yijun (*Institute of Semiconductors, Chinese Academy of Sciences*); Liu, Zhiduo (*Institute of Semiconductors, Chinese Academy of Sciences*); Chen, hongda (*Institute of Semiconductors, CAS*)

14:45-15:00 ThCT4.6  
**A Multichannel EEG Acquisition System with Novel Ag NWs/PDMS Flexible Dry Electrodes**  
 Wang, Zeyu\* (*Fudan University*); Chen, Chen (*Pierre and Marie Curie University*); Li, Wei (*Fudan University*); Yuan, Wei (*Printable Electronics Research Centre, Suzhou Institute of Nanotech and Nano-bionics, Chinese Academy of Sciences*); Han, Tongmeng (*Fudan University*); Sun, Chenglu (*Fudan University*); Tao, Linkai (*Eindhoven University of Technology*); Zhao, Yuting (*Fudan University*); Chen, Wei (*Fudan University*)

ThCT5: 13:30-15:00 Meeting Room 316A  
**Bioinformatics – High Throughput: Omic (Genomics, Proteomics, Metabolomics, Lipidomics, and Metagenomics) Data Analytics for Precision Health (Theme 10)** (Oral Session)

13:30-13:45 ThCT5.1  
**Datalog Extensions for Bioinformatic Data Analysis**  
 Seo, Jiwon\* (*UNIST*)

13:45-14:00 ThCT5.2  
**Assessing the Predictive Value of Regulatory Molecules for Patient Outcome in Pancreatic Cancer: A Computational Approach**  
 Kourou, Konstantina (*Unit of Biological Applications and Tech., Univ. of Ioannina*); Papaloukas, Costas (*Univ. of Ioannina*); Mitsis, Michael (*Dept. of Medicine, School of Health Sciences, Univ. of Ioannina*); Fotiadis, Dimitrios I.\* (*Univ. of Ioannina*)

14:00-14:15 ThCT5.3  
**Structural Variant Prediction in Extended Pedigrees through Sparse Negative Binomial Genome Signal Recovery**  
 Banuelos, Mario (*University of California, Merced*); Sindi, Suzanne (*University of California, Merced*); Marcia, Roummel\* (*University of California, Merced*)

14:15-14:30 ThCT5.4  
**Unsupervised Fuzzy Binning of Metagenomic Sequence Fragments on Three-Dimensional Barnes-Hut t-Stochastic Neighbor Embeddings**  
 Ariza-Jiménez, Leandro (*Univ. EAFIT*); Quintero Montoya, Olga Lucia\* (*Univ. EAFIT*); Pínel, Nicolás (*Univ. EAFIT*)

14:30-14:45 ThCT5.5  
**Identification of Primary and Metastatic Melanoma based on Copy Number Variation**  
 Seo, Hyein (*Korea Advanced Institute of Science and Technology (KAIST)*); Cho, Dong-Ho\* (*Korea Advanced Institute of Science and Technology (KAIST)*)

14:45-15:00 ThCT5.6  
**Micro-Inversions in Human Cancer Genomes**  
 Qu, Li\* (*Peking Univ./GaTech/Emory Univ.*); Zhu, Huaqiu (*Peking Univ.*); Wang, May D. (*Georgia Tech and Emory Univ.*)

ThCT6: 13:30-15:00 Meeting Room 316B  
**Aneurysma (Theme 5)** (Oral Session)  
**Chair:** Heldt, Thomas (*Massachusetts Institute of Technology*)

13:30-13:45 ThCT6.1  
**3DRA Reconstruction of Intracranial Aneurysms – How Does Voxel Size Influences Morphologic and Hemodynamic Parameters**  
 Berg, Philipp\* (*University of Magdeburg*); Radtke, Livia (*University of Magdeburg*); Voß, Samuel (*University of Magdeburg*); Serowy, Steffen (*University Hospital Magdeburg*); Janiga, Gabor (*University of Magdeburg*); Preim, Bernhard (*University of Magdeburg*); Beuing, Oliver (*University Hospital Magdeburg*); Saalfeld, Sylvia (*University of Magdeburg*)

13:45-14:00 ThCT6.2  
**Blood Flow Analysis in Coil Embolized Aneurysms: Difference between Porous Media and Real Coil Geometry Model**  
 Fujimura, Soichiro\* (*Tokyo Univ. of Science*); Takao, Hiroyuki (*Jikei Univ. School of Medicine*); Suzuki, Takashi (*Tokyo Univ. of Science*); Uchiyama, Yuya (*Tokyo Univ. of Science*); Tanaka, Kazutoshi (*Tokyo Univ. of Science*); Otani, Katharina (*Siemens Healthcare K.K.*); Ishibashi, Toshihiro (*Jikei Univ. School of Medicine, Dept. of Neurosurgery*); Fukudome, Koji (*Tokyo Univ. of Science*); Mamori, Hiroya (*Tokyo Univ. of Science*); Yamamoto, Makoto (*Tokyo Univ. of Science*); Murayama, Yuichi (*Jikei Univ. School of Medicine*)

14:00-14:15 ThCT6.3  
**Comparison of Hemodynamic Parameters that can Predict an Aneurysmal Rupture: 20 Patient-Specific Models Experiment**  
 Fujita, Ryosuke (*Tokyo Univ. of Science*); Kawakami, Takumi (*Tokyo Univ. of Science*); Ichikawa, Chihiro (*Tokyo Univ. of Science*); Yamamoto, Ken (*Tokyo Univ. of Science*); Takao, Hiroyuki (*Jikei Univ. School of Medicine*); Murayama, Yuichi (*Jikei Univ. School of Medicine*); Motosuke, Masahiro\* (*Tokyo Univ. of Science*)

14:15-14:30 ThCT6.4  
**Multivariate Analysis for Predicting Internal Carotid (IC) and Middle Cerebral (MC) Aneurysmal Rupture by Hemodynamic Parameters**  
 Suzuki, Takashi (*Tokyo Univ. of Science*); Takao, Hiroyuki\* (*Jikei Univ. School of Medicine*); Fujimura, Soichiro (*Tokyo Univ. of Science*); Otani, Katharina (*Siemens Healthcare K.K.*); Uchiyama, Yuya (*Tokyo Univ. of Science*); Tanaka, Kazutoshi (*Tokyo Univ. of Science*); Ishibashi, Toshihiro (*Jikei Univ. School of Medicine, Dept. of Neurosurgery*); Mamori, Hiroya (*Tokyo Univ. of Science*); Murayama, Yuichi (*Jikei Univ. School of Medicine*); Yamamoto, Makoto (*Tokyo Univ. of Science*)

14:30-14:45 ThCT6.5  
**Hemodynamic Change in a Cerebral Aneurysm Treated by Double Stenting Technique**  
 Uchiyama, Yuya\* (Tokyo University of Science); Takao, Hiroyuki (Jikei University School of Medicine); Suzuki, Takashi (Tokyo University of Science); Fujimura, Soichiro (Tokyo University of Science); Tanaka, Kazutoshi (Tokyo University of Science); Otani, Katharina (Siemens Healthcare K.K.); Hayakawa, Motoharu (Fujita Health University); Ishibashi, Toshihiro (Jikei University School of Medicine, Dept. of Neurosurgery); Fukudome, Koji (Tokyo University of Science); Mamori, Hiroya (Tokyo University of Science); Yamamoto, Makoto (Tokyo University of Science); Murayama, Yuichi (Jikei University School of Medicine)

14:45-15:00 ThCT6.6  
**Relationship between Cerebral Aneurysm Initiation and Hemodynamic Parameters**  
 Tanaka, Kazutoshi\* (Tokyo Univ. of Science); Takao, Hiroyuki (Jikei Univ. School of Medicine); Suzuki, Takashi (Tokyo Univ. of Science); Fujimura, Soichiro (Tokyo Univ. of Science); Uchiyama, Yuya (Tokyo Univ. of Science); Otani, Katharina (Siemens Healthcare K.K.); Ishibashi, Toshihiro (Jikei Univ. School of Medicine, Dept. of Neurosurgery); Mamori, Hiroya (Tokyo Univ. of Science); Fukudome, Koji (Tokyo Univ. of Science); Yamamoto, Makoto (Tokyo Univ. of Science); Murayama, Yuichi (Jikei Univ. School of Medicine)

ThCT7: 13:30-15:00 Meeting Room 316C  
**MRI: RF, Parallel Imaging and Pulse Sequence (Theme 2)** (Oral Session)  
**Chair:** Wright, Steven M. (Texas A&M University)

13:30-13:45 ThCT7.1  
**Super Slice Interpolation for Generating Thin-Slice Images from Multichannel Multislice MRI Data**  
 Feng, Yanqiu (Southern Medical Univ.); Lyu, Mengye (Hong Kong Univ.); Liu, Yilong (Univ. of Hong Kong); Victor B., Xie (Univ. of Hong Kong); Ka-Fung Henry, Mak (Univ. of Hong Kong); Guo, Hua (Tsinghua Univ.); Wu, Ed X.\* (Univ. of Hong Kong)

13:45-14:00 ThCT7.2  
**A Surface Electromyography-Driven Magnetic Resonance Sequence Controller for Real-Time Myoelectric Triggered Imaging**  
 Schwartz, Martin\* (Univ. of Tübingen); Martirosian, Petros (Dept. of Diagnostic and Interventional Radiology, Univ. Clinic of Tübingen); Yang, Bin (Institute of Signal Processing and System Theory, Univ. of Stuttgart); Schick, Fritz (Dept. of Diagnostic and Interventional Radiology, Univ. Clinic of Tübingen)

14:00-14:15 ThCT7.3  
**Effect of Incident Field Magnitude and Phase Distribution on RF-Induced Heating Due to Hip Implants**  
 Kozlov, Mikhail\* (Max Planck Institute for Human Cognitive and Brain Sciences); Horner, Marc (ANSYS, Inc.); Kainz, Wolfgang (Food and Drug Administration); Angelone, Leonardo M. (US Food and Drug Administration, Center for Devices and Radiological Health)

14:15-14:30 ThCT7.4  
**Double-Tuned Cable Traps for Multinuclear MRI and MRS**  
 Wilcox, Matthew\* (Texas A&M University); McDougall, Mary (Texas A&M University)

14:30-14:45 ThCT7.5  
**Flexible RF Filtering Front-End for Simultaneous Multinuclear MR Spectroscopy**  
 Huang, Chung-Huan\* (Texas A&M University); Ogier, Stephen (Texas A&M University); Gu, Minyu (Texas A&M University); Wright, Steven M. (Texas A&M University)

14:45-15:00 ThCT7.6  
**4D Dual-Venc Spiral Flow**  
 Callahan, Sean\* (University of Louisville); Henn, Alexander (University of Louisville); Kendrick, Michael (Veteran's Affairs Medical Center); Wang, Hui (Philips Medical Systems); Negahdar, MJ (University of Louisville); Kheradvar, Arash (University of California, Irvine); Stoddard, Marcus (University of Louisville); Amini, Amir (University of Louisville)

ThCT8: 13:30-15:00 Meeting Room 318A  
**Brain Physiology and Modelling (Theme 6)** (Oral Session)  
**Chair:** Butera, Robert (Georgia Institute of Technology)  
**Co-Chair:** Zouridakis, George (University of Houston)

13:30-13:45 ThCT8.1  
**Auditory Steady-State Responses across Chirp Repetition Rates for Ear-EEG and Scalp EEG**  
 Christensen, Christian Bech\* (Aarhus University); Kappel, Simon Lind (Aarhus University, Denmark); Kidmose, Preben (Aarhus University, Denmark)

13:45-14:00 ThCT8.2  
**Graph-Based Models of Cortical Axons for the Prediction of Neuronal Response to Extracellular Electrical Stimulation**  
 Bingham, Clayton\* (University of Southern California); Bouteiller, Jean-Marie Charles (University of Southern California); Song, Dong (University of Southern California); Berger, Theodore (USC)

14:00-14:15 ThCT8.3  
**Decoding Movement States in Stepping Cycles based on Subthalamic LFPs in Parkinsonian Patients**  
 Tan, Huiling (University Research Lecturer in Nuffield Dept. of Clinical NeuroSciences, University of Oxford); Fischer, Petra (University of Oxford); Shah, Syed Ahmar\* (Postdoctoral Scientist, University of Oxford); Vidaurre, Diego (University of Oxford); Woolrich, Mark (Oxford University); Brown, Peter (Director of the Medical Research Council Brain Network Dynamics Unit at the University of Oxford, and Professor of Experimental)

14:15-14:30 ThCT8.4  
**A Closed-Loop Multi-Channel Asynchronous Neurostimulator to Mimic Neural Code for Cognitive Prosthesis**  
 Elyahoodayan, Sahar\* (University of Southern California); Berger, Theodore (USC); Song, Dong (University of Southern California)

14:30-14:45 ThCT8.5  
**Sleep Depth Enhancement through Ambient Temperature Manipulation in Mice**  
 Ajwad, Asmaa (Univ. of Kentucky); Huffman, Dillon (Univ. of Kentucky); Yaghouby, Farid (FDA); O'Hara, Bruce (Univ. of Kentucky); Sunderam, Sridhar\* (Univ. of Kentucky)

14:45-15:00 ThCT8.6  
**Cholinergic Modulation of CA1 Pyramidal Cells via M1 Muscarinic Receptor Activation: A Computational Study under Physiological and Hyperactive Levels**  
 Mergenthal, Adam\* (University of Southern California); Bouteiller, Jean-Marie Charles (University of Southern California); Berger, Theodore (USC)

ThCT9: 13:30-15:00 Meeting Room 318B  
**Signal Processing and Classification of Acoustic and Auditory Signals (Theme 1)** (Oral Session)  
**Chair:** Sankar, Ravi (University of South Florida)

13:30-13:45 ThCT9.1  
**Comparison of Cough, Wheeze and Sustained Phonations for Automatic Classification between Healthy Subjects and Asthmatic Patients**  
 Yadav, Shivani\* (IISc); Ghosh, Prasanta (Indian Institute of Science); Krishnaswamy, Uma maheswari (M.S.Ramaiah Medical College); NK, Kausthubha (IISc); Gope, Dipanjan (IISc)

13:45-14:00	ThCT9.2	<b>Study of the Automatic Detection of Parkinson's Disease based on Speaker Recognition Technologies and Allophonic Distillation</b> Moro Velazquez, Laureano ( <i>Johns Hopkins Univ.</i> ); Gómez-García, Jorge Andrés ( <i>Univ. Nacional de Colombia Sede Manizales</i> ); Godino-Llorente, Juan Ignacio ( <i>Univ. Politécnica de Madrid</i> ); Rusz, Jan ( <i>Czech Technical Univ. in Prague</i> ); Skodda, Sabine ( <i>Univ. Knappschafts Krankenhaus Bochum GmbH</i> ); Grandas-Pérez, Francisco ( <i>Hospital General Univ. Gregorio Marañón</i> ); Velázquez, José-Miguel ( <i>Hospital General Univ. Gregorio Marañón</i> ); Nöth, Elmar ( <i>Univ. of Erlangen-Nuremberg</i> ); Orozco-Arroyave, Juan-Rafael ( <i>Univ. de Antioquia</i> ); Dehak, Najim* ( <i>Johns Hopkins Univ.</i> )	14:15-14:30	ThCT10.4	<b>A Novel EMG-Driven Functional Electrical Stimulator for Post-Stroke Individuals to Practice Activities of Daily Living</b> Yao, Jun* ( <i>Northwestern University</i> ); Sullivan, Jane ( <i>Northwestern University</i> ); Dewald, Julius P. A. ( <i>Northwestern University</i> )
14:00-14:15	ThCT9.3	<b>Learning Front-End Filter-Bank Parameters using Convolutional Neural Networks for Abnormal Heart Sound Detection</b> Humayun, Ahmed Imtiaz ( <i>mHealth Lab, Bangladesh Univ. of Engineering and Technology (BUET)</i> ); Ghaffarzadegan, Shabnam* ( <i>Robert Bosch LLC</i> ); Feng, Zhe ( <i>Robert Bosch LLC</i> ); Hasan, Taufiq ( <i>Bangladesh Univ. of Engineering and Technology</i> )	14:30-14:45	ThCT10.5	<b>Applying Multichannel Optogenetic System for Epidural Spinal Cord Stimulation in Rats</b> Chang, Shih-Yin* ( <i>University of Tokyo</i> ); Naganuma, Kazunori ( <i>University of Tokyo</i> ); Kanazawa, Hoshinori ( <i>University of Tokyo</i> ); Sekino, Masaki ( <i>University of Tokyo</i> ); Onodera, Hiroshi ( <i>University of Tokyo Graduate School of Engineering</i> ); Kuniyoshi, Yasuo ( <i>University of Tokyo</i> )
14:15-14:30	ThCT9.4	<b>Multifractal Analysis of Speech Imagery of IPA Vowels</b> Sikdar, Debdeep ( <i>IIT Kharagpur</i> ); Roy, Rinku ( <i>IIT Kharagpur</i> ); Bakshi, Koushik* ( <i>Indian Institute of Tech. Kharagpur</i> ); Mahadevappa, Manjunatha ( <i>Indian Institute of Tech. Kharagpur</i> )	14:00-14:15	ThCT11.3	<b>Automatic Sleep Stage Classification using Single-Channel EEG: Learning Sequential Features with Attention-Based Recurrent Neural Networks</b> Phan, Huy* ( <i>University of Oxford</i> ); Andreotti, Fernando ( <i>University of Oxford</i> ); Cooray, Navin ( <i>Institute of BioMedical Engineering, University of Oxford</i> ); Chén, Oliver ( <i>University of Oxford</i> ); De Vos, Maarten ( <i>University of Oxford</i> )
14:30-14:45	ThCT9.5	<b>Bruit-Enhancing Phonoangiogram Filter using Sub-Band Autoregressive Linear Predictive Coding</b> Majerus, Steve* ( <i>APT Center, Cleveland VAMC</i> ); Mandal, Soumyajit ( <i>Case Western Reserve Univ.</i> ); Vince, Geoff ( <i>Volcano Corp.</i> ); Pinault, Gilles ( <i>Case Western Reserve Univ.</i> ); Damaser, Margot S. ( <i>Lerner Research Inst., Cleveland Clinic Foundation</i> )	14:45-15:00	ThCT9.6	<b>Classification of Parkinson's Disease using Pitch Synchronous Speech Analysis</b> Appakaya, Sai Bharadwaj* ( <i>University of South Florida</i> ); Sankar, Ravi ( <i>University of South Florida</i> )
<div>ThCT10: 13:30-15:00 Meeting Room 319A</div> <div><b>Motor Neuroprostheses (II) (Theme 6) (Oral Session)</b></div> <div><b>Chair:</b> Ellis, Michael (<i>Northwestern University</i>)</div> <div><b>Co-Chair:</b> Petroff, Neil (<i>Tarleton State University</i>)</div>					
13:30-13:45	ThCT10.1	<b>Selective Recruitment of Arm Motoneurons in Nonhuman Primates using Epidural Electrical Stimulation of the Cervical Spinal Cord</b> Barra, Beatrice* ( <i>Univ. of Fribourg</i> ); Roux, Camille ( <i>Univ. of Fribourg</i> ); Kaeser, Mélanie ( <i>Univ. of Fribourg</i> ); Schiavone, Giuseppe ( <i>Ecole Polytechnique Federale de Lausanne</i> ); Lacour, Stéphanie ( <i>EPFL</i> ); Bloch, Jocelyne ( <i>Centre Hospitalier Univ. Vaudois, CHUV</i> ); Courtine, Gregoire ( <i>EPFL</i> ); Rouiller, Eric M. ( <i>Univ. of Fribourg</i> ); Schmidlin, Eric ( <i>Univ. of Fribourg</i> ); Capogrosso, Marco ( <i>Ecole Polytechnique Federale de Lausanne</i> )	14:15-14:30	ThCT11.4	<b>Characteristics of EEG Power Spectrum during Sleep Spindle Events in ADHD Children</b> De Dea, Federica* ( <i>University of Trieste</i> ); Zanus, Caterina ( <i>Child Neuropsychiatry, IRCCS Children's Hospital "Burlo Garofolo"</i> ); Carrozzi, Marco ( <i>Child Neuropsychiatry, IRCCS Children's Hospital "Burlo Garofolo"</i> ); Stecca, Matteo ( <i>Child Neuropsychiatry, IRCCS Children's Hospital "Burlo Garofolo"</i> ); Accardo, Agostino ( <i>University of Trieste</i> )
13:45-14:00	ThCT10.2	<b>Flexibility of Finger Activation Patterns Elicited through Non-Invasive Multi-Electrode Nerve Stimulation</b> Shin, Henry ( <i>University of North Carolina at Chapel Hill</i> ); Hu, Xiaogang* ( <i>University of North Carolina-Chapel Hill</i> )	14:30-14:45	ThCT11.5	<b>Automating the Detection of REM Sleep Behaviour Disorder</b> Cooray, Navin* ( <i>Institute of BioMedical Engineering, University of Oxford</i> ); Andreotti, Fernando ( <i>University of Oxford</i> ); Lo, Christine ( <i>Sheffield Institute of Translational Neuroscience</i> ); Symmonds, Mkael ( <i>Dept. of Clinical Neurophysiology, Oxford University Hospitals, John Radcliffe Hospital, University of Oxford, UK</i> ); Hu, Michele ( <i>Nuffield Dept. of Clinical NeuroSciences, University of Oxford</i> ); De Vos, Maarten ( <i>University of Oxford</i> )
14:00-14:15	ThCT10.3	<b>Long-Term Functionality of a Soft Electrode Array for Epidural Spinal Cord Stimulation in a Minipig Model</b> Schiavone, Giuseppe* ( <i>Ecole Polytechnique Federale de Lausanne</i> ); Wagner, Fabien ( <i>EPFL Lausanne</i> ); Fallegger, Florian ( <i>EPFL Lausanne</i> ); Kang, Xiao-Yang ( <i>EPFL Lausanne</i> ); Vachicouras, Nicolas ( <i>EPFL Lausanne</i> ); Barra, Beatrice ( <i>Univ. of Fribourg</i> ); Capogrosso, Marco ( <i>Ecole Polytechnique Federale de Lausanne</i> ); Bloch, Jocelyne ( <i>Centre Hospitalier Universitaire Vaudois, CHUV</i> ); Courtine, Gregoire ( <i>EPFL</i> ); Lacour, Stéphanie ( <i>EPFL</i> )	14:45-15:00	ThCT11.6	<b>Quantitative Analysis of a Marked Point Process based Sleep Spindle Detector</b> Akella, Shailaja* ( <i>University of Florida, Gainesville</i> ); Principe, Jose ( <i>University of Florida</i> )

ThCT12: 13:30-15:00 Meeting Room 321A  
**Joint Biomechanics (Theme 8) (Oral Session)**

13:30-13:45 ThCT12.1  
**In Vivo Relationship between Joint Stiffness, Joint-Based Estimates of Muscle Stiffness, and Shear-Wave Velocity**  
 Vigotsky, Andrew\* (Northwestern University); Rouse, Elliott (University of Michigan); Lee, Sabrina (Northwestern University)

13:45-14:00 ThCT12.2  
**Elbow Joint Angle Estimation with Surface Electromyography and Autoregressive Moving Average Models**  
 Fisch Sommer, Leonardo (University of São Paulo); Barreira, Cauê (University of São Paulo); López Noriega, Carlos (University of São Paulo); Camargo-Junior, Franklin (University of São Paulo); Moura, Rafael Traldi (Polytechnic School. University of São Paulo); Forner-Cordero, Arturo\* (Escola Politécnica da Universidade de São Paulo)

14:00-14:15 ThCT12.3  
**A New Algorithm to Estimate Glenohumeral Joint Location based on Scapula Rhythm**  
 Heidari, Omid\* (Idaho State University); Pourgharibshahi, Vahid (Idaho State University); Urfer, Alex (Idaho State University); Perez Gracia, Alba (Idaho State University)

14:15-14:30 ThCT12.4  
**Shoulder Glenohumeral Elevation Estimation based on Upper Arm Orientation**  
 Hamdan, Sara\* (Ozyegin University); Oztog, Erhan (Ozyegin University); Furukawa, Jun-ichiro (ATR Computational Neuroscience Labs); Morimoto, Jun (ATR Computational Neuroscience Labs); Ugurlu, Barkan (Ozyegin University)

14:30-14:45 ThCT12.5  
**A Functional Method for Generating Individualized Spine Models from Motion-Capture Data**  
 Seko, Sarah\* (UC Berkeley); Matthew, Robert Peter (UC Berkeley); Bajcsy, Ruzena (UC Berkeley, CITRIS); Lotz, Jeffrey (Orthopaedic Surgery, University of California at Berkeley)

14:45-15:00 ThCT12.6  
**Generalized Lower Limb Joint Angular Phase Space Analysis of Subject Specific Normal and Modified Gait**  
 Rodrigues, Carlos M. B.\* (INESCTEC - Technology & Science Associate Lab); Correia, Miguel (Universidade do Porto, Faculdade de Engenharia); Abrantes, João M. C. S. (MovLab - ULHT); Rodrigues, Marco Aurélio Benedetti (Federal Univ. of Pernambuco); Nadal, Jurandir (Federal Univ. of Rio de Janeiro)

ThCT13: 13:30-15:00 Meeting Room 321B  
**Cardiovascular, Pulmonary, and Sleep Engineering (Theme 5) (Oral Session)**

13:30-13:45 ThCT13.1  
**A Guide-Wired Helical Microrobot for Mechanical Thrombectomy: A Feasibility Study**  
 Nguyen, Kim Tien (Chonnam National University); Go, Gwangjun (Robot Research Initiative); Choi, Eunpyo (Chonnam National University); Kang, Byungjeon (Robot Research Initiative, Chonnam National University); Park, Jongoh (Chonnam National University); Kim, Chang-Sei\* (Chonnam National University)

13:45-14:00 ThCT13.2  
**Preliminary Study of Palatal Implant for Sleep Apnea Control**  
 Seo, Jungmin (Seoul National University); Kim, Jeong-Whun (Seoul National University College of Medicine); Cho, Sung Woo (Dept. of Otorhinolaryngology, Seoul National University Hospital College of Medicine); Shim, Shinyong (Seoul National University); Choi, Jin-Woo (Louisiana State University); Kim, Sung June\* (Seoul National University)

14:00-14:15 ThCT13.3  
**Performance Assessment of a Dedicated Reflectance Pulse Oximeter in a Neonatal Intensive Care Unit**  
 Proença, Martin\* (CSEM SA); Grossenbacher, Olivier (CSEM SA); Dasen, Stephan (CSEM); Moser, Virginie (CSEM); Ostojic, Daniel (University of Zurich); Lemkaddem, Alia (CSEM); Ferrario, Damien (CSEM); Lemay, Mathieu (CSEM); Wolf, Martin (University of Zurich); Fauchère, Jean-Claude (University of Zurich); Karen, Tanja (University of Zurich)

14:15-14:30 ThCT13.4  
**Basic Performance Tests of the MILL Intravascular CO<sub>2</sub> Removal Catheter**  
 Janeczek, Christoph (Vienna University of Technology); Lukitsch, Benjamin (Vienna University of Technology); Huber-Dangl, Florentine (Vienna University of Technology); Karabegovic, Alen (Vienna University of Technology); Jordan, Christian (Vienna University of Technology); Haddadi, Bahram (Vienna University of Technology); Ullrich, Roman (CCore Technology GmbH); Krenn, Claus Georg (CCore Technology GmbH); Gfoehler, Margit (TU Wien); Harasek, Michael\* (Vienna University of Technology)

14:30-14:45 ThCT13.5  
**Design, Development, and Characterization of Breathforce: A Respiratory Training System for Patients with Spinal Cord Injuries**  
 Tran, Kevin\* (Univ. of Louisville); Chen, Yangsheng (Kentucky Spinal Cord Injury Research Center); Ovechkin, Alexander (Univ. of Louisville); Roussel, Thomas (Univ. of Louisville)

14:45-15:00 ThCT13.6  
**Feasibility of a Post-Auricle Wireless Power System for Pediatric Mechanical Circulatory Support Pumps**  
 Valdovinos, John\* (California State University Northridge); Nagra, Simerjit (California State University Northridge); Hussain, Fatima (California State University Northridge); Alvarez, Isabel (CSUN)

ThCT14: 13:30-15:00 Meeting Room 322AB  
**Ambulatory and Diagnostic Systems and Devices (II) (Theme 9) (Oral Session)**  
**Chair:** Srimathveeravalli, Govindarajan (Memorial Sloan-Kettering Cancer Center)  
**Co-Chair:** Holmes, David (Mayo Clinic)

13:30-13:45 ThCT14.1  
**Estimating Mini Mental State Examination Scores using Game-Specific Performance Values: A Preliminary Study**  
 Jung, Hee-Tae (Univ. of Massachusetts Amherst); Lee, Hyunsuk (WooriSoft); Kim, Kwangwook (WooriSoft); Kim, Byeongil (WooriSoft); Park, Sung Ji (Heeyeon Hospital); Ryu, Taekyeong (Heeyeon Hospital); Kim, Yangsoo (Heeyeon Hospital); Lee, Sunghoon Ivan\* (Univ. of Massachusetts Amherst)

13:45-14:00 ThCT14.2  
**Optimizing Mental Workload by Functional Near-Infrared Spectroscopy based Dynamic Difficulty Adjustment**  
 Ung, Wei Chun (Universiti Teknologi Petronas); Meriaudeau, Fabrice (Universite de Bourgogne); Tang, Tong Boon\* (Universiti Teknologi Petronas)

14:00-14:15 ThCT14.3  
**Automated Measurement and Subtask Analysis of the Timed Up-and-Go Test in the Field of Geriatrics**  
 Ziegl, Andreas (AIT Austrian Institute of Technology GmbH); Kastner, Peter (AIT Austrian Institute of Technology); Modre, Robert (ARC Seibersdorf Research GmbH); Schreier, Guenter\* (AIT Austrian Institute of Technology GmbH)

14:15-14:30 ThCT14.4  
**Mobile Fall Risk Assessment Solution for Daily-Life Settings**  
 Similä, Heidi\* (VTT Technical Research Centre of Finland Ltd.); Immonen, Milla Sinikka (VTT Technical Research Centre of Finland); Niemirepo, Timo (VTT Technical Research Centre of Finland Ltd.)



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14:45-15:00 ThCT17.6  
**A Wireless Optoelectronic Neuroscience Platform for Chronic Fluorescence Sensing in Freely Behaving Rodents**  
 Noormohammadi Khirak, Mehdi\* (*Laval Univ.*); Gagnon-Turcotte, Gabriel (*Université Laval*); Martanova, Ekaterina (*Laval Univ.*); Bories, Cyril (*Laval Univ.*); Martel, Sylvain (*Ecole Polytechnique de Montreal*); C. Proulx, Christophe (*Laval Univ.*); De Koninck, Yves (*Laval Univ.*); Gosselin, Benoit (*Laval Univ.*)

ThCT18: 13:30-15:00 Meeting Room 324  
**Wearable Sensors (Theme 7)** (Oral Session)  
**Chair:** Selvaraj, Nandakumar (*VitalConnect, Inc.*)  
**Co-Chair:** Nallathambi, Gabriel (*VitalConnect, Inc.*)

13:30-13:45 ThCT18.1  
**A Novel Environment-Invariant Core Body Temperature Estimation for High Sensitivity and Specificity Fever Screening**  
 Silawan, Nawatt (*Panasonic Corp., Automotive & Industrial Systems Company, Engineering Division*); Kusakame, Koichi (*Panasonic Industrial Devices Singapore Technology Centre*); Kek, Khai Jun\* (*Panasonic Industrial Devices Singapore*); Kuan, Win Sen (*National University Hospital*)

13:45-14:00 ThCT18.2  
**Polymer-Coated Fiber Optic Probe for the Monitoring of Breathing Pattern and Respiratory Rate**  
 Iacoponi, Sara (*Università Campus Bio-Medico di Roma*); Massaroni, Carlo\* (*Università Campus Bio-Medico di Roma*); Lo Presti, Daniela (*Campus Bio-Medico di Roma University*); Saccomandi, Paola (*University Campus Bio-Medico of Rome*); Caponero, Michele Arturo (*ENEA - Centro Ricerche Frascati*); D'Amato, Rosaria (*ENEA - Centro Ricerche Frascati*); Schena, Emiliano (*University of Rome Campus Bio-Medico*)

14:00-14:15 ThCT18.3  
**Detection of Respiratory Crackle Sounds via an Android Smartphone-Based System**  
 Olvera-Montes, Nemecio Carlos (*Univ. Autónoma Metropolitana*); Reyes, Bersain Alexander\* (*Universidad Autonoma de San Luis Potosi (UASLP)*); Charleston-Villalobos, Sonia (*Universidad Autonoma Metropolitana*); Gonzalez-Camarena, Ramon (*Universidad Autonoma Metropolitana*); Mejia Ávila, Mayra (*Instituto Nacional de Enfermedades Respiratorias*); Dorantes Méndez, Guadalupe (*Universidad Autónoma de San Luis Potosi*); Reulecke, Sina (*Universidad Autónoma Metropolitana*); Aljama-Corrales, Tomas (*Universidad Autonoma Metropolitana*)

14:15-14:30 ThCT18.4  
**A 3D-Printed, Adjustable-Stiffness Knee Brace with Embedded Magnetic Angle Sensor**  
 Bolus, Nicholas\* (*Georgia Institute of Technology*); Ganti, Venu (*Georgia Institute of Technology*); Inan, Omer (*Georgia Institute of Technology*)

14:30-14:45 ThCT18.5  
**Clinical Validation of a Wearable Respiratory Rate Device for Neonatal Monitoring**  
 Raj, Antony\* (*HTIC IIT Madras*); SP, Preejith (*Healthcare Technology Innovation Center - IITMadras*); Raja, Vijai Shankar (*Helyxon Helathcare Technologies PL*); Joseph, Jayaraj (*HTIC, Indian Institute of Technology Madras*); Sivaprakasam, Mohanasankar (*Indian Institute of Technology Madras*)

14:45-15:00 ThCT18.6  
**Fully Disposable Wireless Patch Sensor for Continuous Remote Patient Monitoring**  
 Selvaraj, Nandakumar\* (*VitalConnect, Inc.*); Nallathambi, Gabriel (*VitalConnect, Inc.*); Moghadam, Rod (*VitalConnect, Inc.*); Aga, Arshan (*VitalConnect, Inc.*)

ThCT19: 13:30-15:00 Meeting Room 325A  
**Education and Career Development in BioMedical Engineering (Theme 11)** (Oral Session)  
**Chair:** Wheeler, Bruce (*University of Florida*)

13:30-13:45 ThCT19.1  
**Designing a Hybrid Engineering Course Combining Case-Based and Lecture-Based Teaching**  
 Bassir Kazeruni, Neda, Mélanie (*Columbia University*); Laboy, Andre (*Columbia University*); Hess, Henry\* (*Columbia University*)

13:45-14:00 ThCT19.2  
**Engineering, Physical Therapy and the Community: A Service Learning Course**  
 Aceros, Juan\* (*Univ. of North Florida*); Lundy, Mary (*Univ. of North Florida*); Rodriguez, Ayshka (*Univ. of North Florida*)

14:00-14:15 ThCT19.3  
**Proposal for a New Training Exercise for Single Port Laparoscopic Cholecystectomy**  
 Amado, Lusvin\* (*Centro Industrial de Mantenimiento Integral and Pontifical Bolivarian Univ.*); Salinas, Sergio Alexander (*Univ. Pontificia Bolivariana-Seccional Bucaramanga*); Pimentel, Anibal (*Pontificia Bolivariana - Clinica Chicamocha S.A.*)

14:15-14:30 ThCT19.4  
**Activities to Invigorate a Student Chapter of the IEEE Engineering in Medicine and Biology Society**  
 Carlson, Charles\* (*Kansas State University*); Lyle, Alexandra (*Kansas State University*); Phillips, Gabrielle Johannah (*Kansas State University*); Chappell, Jacob (*Kansas State University*); Brown, Mariah (*Kansas State University*); Fallahi, Hojjatollah (*Kansas State University*); Wang, Shangxian (*Kansas State University*); Suliman, Ahmad (*Kansas State University*); Warren, Steve (*Kansas State University*)

14:30-14:45 ThCT19.5  
**How to Invent New Medical Devices**  
 Webster, John G\* (*University of Wisconsin-Madison*)

14:45-15:00 ThCT19.6  
**Integrated Information Rich Engineering Course Design**  
 Nizami, Shermeen\* (*Carleton Univ.*); Renon, Flavia (*Carleton Univ.*)

ThCT20: 13:30-15:00 Meeting Room 325B  
**Invited Session: Computational Human Models (V)**  
**Tumor Treating Fields (cd91k)** (Invited Session)

13:30-13:45 ThCT20.1  
**Advanced Multiparametric Imaging for Response Assessment to TTFIELDS in Patients with Glioblastoma**  
 Mohan, Suyash\* (*University of Pennsylvania*)

13:45-14:00 ThCT20.2  
**Electroconductive Properties of Microtubules, Actin and Kinesin**  
 Tuszyński, Jack Adam\* (*University of Alberta*)

14:00-14:15 ThCT20.3  
**Estimating the Intensity and Anisotropy of Tumor Treating Fields using Matrix Decomposition. Towards a More Comprehensive Estimation of Anti-Tumor Efficacy**  
 Korshoej, Anders R. (*Aarhus University Hospital*); Thielscher, Axel\* (*Copenhagen University Hospital Hvidovre, Denmark & BioMedical Engineering Section*)

14:15-14:30 ThCT20.4  
**Insights from Computer Modeling: Analysis of Physical Characteristics of Glioblastoma in Patients Treated with TTFIELDS**  
 Lok, Edwin (*Beth Israel Deaconess Medical Center*); San, Pyay (*Beth Israel Deaconess Medical Center*); Wong, Eric T\* (*Beth Israel Deaconess Medical Center*)

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14:30-14:45	ThCT20.5	<b>Connecting TTFields Distribution to Patient Outcome: A Study Utilizing Simulations of TTFields Distributions in Over 100 Patients</b> Urman, Noa ( <i>Novocure Ltd.</i> ); Lavy-shahaf, Gitit ( <i>Novocure Ltd.</i> ); Frenkel, Avital ( <i>Novocure Ltd.</i> ); Levi, Shay ( <i>Novocure Ltd.</i> ); Naveh, Ariel ( <i>Novocure Ltd.</i> ); Manzur, Doron ( <i>Novocure Ltd.</i> ); Wenger, Cornelia ( <i>Novocure GmbH</i> ); Weinberg, Uri ( <i>Novocure Ltd.</i> ); Kirson, Eilon David ( <i>Novocure Ltd.</i> ); Bomzon, Ze'ev* ( <i>Novocure Ltd.</i> )	17:15-19:00	ThPoS-01.8	<b>Development of an Integrated Actuated Hand Orthosis and Virtual Reality System for Home-Based Rehabilitation</b> Ghassemi, Mohammad* ( <i>North Carolina State Univ.</i> ); Ochoa, Jose Mauricio ( <i>Rehabilitation Institute of Chicago</i> ); Yuan, Ning ( <i>Illinois Institute of technology</i> ); Tsoupikova, Daria ( <i>Univ. of Illinois at Chicago</i> ); Kamper, Derek ( <i>North Carolina State Univ.</i> )
14:45-15:00	ThCT20.6	<b>Simulating the Effect of 200 Khz AC Electric Fields on Tumor Cell Structures to Uncover the Mechanism of a Cancer Therapy</b> Carlson, Kris* ( <i>BIDMC/Harvard Medical School</i> ); Tuszyński, Jack Adam ( <i>University of Alberta</i> ); Dokos, Socrates ( <i>University of New South Wales</i> ); Bomzon, Ze'ev ( <i>Novocure Ltd.</i> )	ThPoS-02: 17:15-19:00 <b>Biorobotics and Biomechanics (III) – Poster (Theme 8)</b> (Poster Session)		Exhibit Hall 2
ThPoS-01: 17:15-19:00 <b>Biorobotics and Biomechanics (II) – Poster (Theme 8)</b> (Poster Session)		Exhibit Hall 2	17:15-19:00	ThPoS-02.1	<b>Evidence of a “Clock” Determining Human Locomotion</b> Tiseo, Carlo* ( <i>Nanyang Technological University</i> ); Veluvolu, Kalyana C. ( <i>Kyungpook National University</i> ); Ang, Wei Tech ( <i>Nanyang Technological University</i> )
17:15-19:00	ThPoS-01.1	<b>The Influence of Mechanical Rubbing on the Dissolution of Blood Clots</b> Mahdy, Dalia ( <i>German Univ. in Cairo</i> ); Hamdi, Nabila ( <i>German Univ. in Cairo</i> ); Hesham El Feshawy, Sarah ( <i>German Univ. in Cairo GUC</i> ); El-sharkawy, Ahmed ( <i>German Univ. in Cairo</i> ); Khalil, Islam S. M.* ( <i>German Univ. in Cairo</i> )	17:15-19:00	ThPoS-02.2	<b>Comparing Physical Human-Robot Interaction with Spring- and Elastomer-Based Series Elastic Actuators</b> Jarrett, Chris ( <i>University of Auckland</i> ); McDaid, Andrew* ( <i>University of Auckland</i> )
17:15-19:00	ThPoS-01.2	<b>Prediction of Minimum Toe Clearance with a Radial Basis Function Network at the Start of the Swing Phase</b> Miyake, Tamon* ( <i>Waseda University</i> ); Fujie, Masakatsu G. ( <i>Waseda University</i> ); Sugano, Shigeki ( <i>Waseda University</i> )	17:15-19:00	ThPoS-02.3	<b>Asymmetric Dual Arm Approach for Post Stroke Recovery of Motor Functions Utilizing the EXO-UL8 Exoskeleton System: A Pilot Study</b> Shen, Yang* ( <i>University of California Los Angeles</i> ); Ma, Ji ( <i>University of California Los Angeles</i> ); Dobkin, Bruce ( <i>UCLA</i> ); Rosen, Jacob ( <i>University of California Los Angeles (UCLA)</i> )
17:15-19:00	ThPoS-01.3	<b>F3Hand: A Five-Fingered Prosthetic Hand Driven with Curved Pneumatic Artificial Muscles</b> Nemoto, Yusuke* ( <i>Osaka Institute of Technology</i> ); Ogawa, Kazunori ( <i>Daiya Industry Co., Ltd.</i> ); Yoshikawa, Masahiro ( <i>Osaka Institute of Technology</i> )	17:15-19:00	ThPoS-02.4	<b>Observations and Experiments for the Definition of a New Robotic Device Dedicated to CT, CBCT and MRI-Guided Percutaneous Procedures</b> Pfeil, Antoine ( <i>INSA Strasbourg, ICube Lab</i> ); Barbé, Laurent ( <i>University of Strasbourg, CNRS, ICube</i> ); Wach, Benoît ( <i>University of Strasbourg, CNRS, ICube</i> ); Cazzato, Roberto Luigi ( <i>University Hospital of Strasbourg</i> ); Gangi, Afshin ( <i>University Hospital of Strasbourg</i> ); Renaud, Pierre* ( <i>INSA Strasbourg</i> )
17:15-19:00	ThPoS-01.4	<b>On Muscle Selection for EMG based Decoding of Dexterous, In-Hand Manipulation Motions</b> Kwon, Yongje ( <i>University of Auckland</i> ); Dwivedi, Anany ( <i>University of Auckland</i> ); McDaid, Andrew ( <i>University of Auckland</i> ); Liarokapis, Minas* ( <i>University of Auckland</i> )	17:15-19:00	ThPoS-02.5	<b>Functional Tasks Performed by People with Severe Muscular Atrophy using an sEMG Controlled Robotic Manipulator</b> Hagengruber, Annette* ( <i>German Aerospace Center, DLR</i> ); Vogel, Jörn ( <i>German Aerospace Center, DLR</i> )
17:15-19:00	ThPoS-01.5	<b>Empirical based Modeling for the Assessment of Dynamic Knee Stability: Implications for Anterior Cruciate Ligament Injury Risk</b> Morgan, Kristin* ( <i>Univ. of Connecticut</i> ); Donnelly, Cyril ( <i>Univ. of Western Australia</i> ); Reinbolt, Jeffrey ( <i>Univ. of Tennessee</i> )	17:15-19:00	ThPoS-02.6	<b>Modified Computed Torque Control of a Robotic Orthosis for Gait Rehabilitation</b> Dao, Quy Thinh* ( <i>Shibaura Institute of Technology</i> ); Yamamoto, Shin-ichiroh ( <i>Shibaura Institute of Technology</i> )
17:15-19:00	ThPoS-01.6	<b>A sEMG Classification Framework with Less Training Data</b> Kaneishi, Daisuke* ( <i>University of California, Berkeley</i> ); Matthew, Robert Peter ( <i>UC Berkeley</i> ); Tomizuka, Masayoshi ( <i>UC Berkeley</i> )	17:15-19:00	ThPoS-02.7	<b>Autonomous Positioning of Eye Surgical Robot using the Tool Shadow and Kalman Filtering</b> Tayama, Takashi ( <i>University of Tokyo</i> ); Kurose, Yusuke ( <i>University of Tokyo</i> ); Marques Marinho, Murilo ( <i>University of Tokyo</i> ); Koyama, Yuki ( <i>University of Tokyo</i> ); Harada, Kanako* ( <i>University of Tokyo</i> ); Omata, Seiji ( <i>Nagoya University</i> ); Arai, Fumihito ( <i>Nagoya University</i> ); Sugimoto, Koichiro ( <i>University of Tokyo Hospital</i> ); Araki, Fumiyuki ( <i>University of Tokyo Hospital</i> ); Totsuka, Kiyohito ( <i>University of Tokyo Hospital</i> ); Takao, Muneyuki ( <i>University of Tokyo Hospital</i> ); Aihara, Makoto ( <i>University of Tokyo Hospital</i> ); Mitsuishi, Mamoru ( <i>University of Tokyo</i> )
17:15-19:00	ThPoS-01.7	<b>Blowfly Yaw Control via Electrical Stimulation of the H1 Lobula Plate Tangential Cell</b> Williams, Rhys* ( <i>Imperial College London</i> ); Massey, Travis ( <i>University of California, Berkeley</i> ); Maharbiz, Michel ( <i>University of California, Berkeley</i> )	17:15-19:00	ThPoS-02.8	<b>Reference Trajectory Adaptation to Improve Human-Robot Interaction: A Database-Driven Approach</b> Haufe, Florian Leander* ( <i>ETH Zurich</i> ); Maggioni, Serena ( <i>ETH Zurich</i> ); Melendez-Calderon, Alejandro ( <i>cereneo Advanced Rehabilitation Institute</i> )

ThPoS-03: 17:15-19:00 Exhibit Hall 2  
**Biorobotics and Biomechanics (IV) – Poster (Theme 8) (Poster Session)**

17:15-19:00 ThPoS-03.1  
**Design and Pilot Evaluation of a Reconfigurable Spinal Exoskeleton**  
 Johnson, Alwyn Patrice (*Livity Technologies*); Gorsic, Maja (*University of Wyoming*); Regmi, Yubi (*University of Wyoming*); Dai, Boyi (*University of Wyoming*); Davidson, Bradley (*University of Denver*); Novak, Domen\* (*University of Wyoming*)

17:15-19:00 ThPoS-03.2  
**Musculoskeletal Simulation for Determining Influences of the Magnitude of Sensory Noise and Stiffness on the Selection of Hip or Ankle Movement Strategies**  
 Kaminishi, Kohei\* (*Univ. of Tokyo*); Jiang, Ping (*Univ. of Tokyo*); Chiba, Ryosuke (*Asahikawa Medical Univ.*); Takakusaki, Kaoru (*Asahikawa Medical Univ.*); Ota, Jun (*Univ. of Tokyo*)

17:15-19:00 ThPoS-03.3  
**An Investigation of the Sensing Capabilities of Magnetotactic Bacteria**  
 Serag El Din, Nermeen (*German Univ. in Cairo*); Ewis, Mohamed (Mr); Yousry, Noura (*German Univ. in Cairo*); Ahmed, Ola (Miss); Gomaa, Iman (*Nile Univ.*); Klingner, Anke (*German Univ. in Cairo*); Hageman, Tijmen (*Korea Institute of Science and Technology*); Pichel, Marc (Mr); Mitwally, Mohamed (*German Univ. in Cairo (GUC)*); Abelman, Leon (*MESA+, Univ. of Twente*); Khalil, Islam S. M.\* (*German Univ. in Cairo*)

17:15-19:00 ThPoS-03.4  
**Load Exposure of Osseointegrated Implants for Transfemoral Limb Prosthesis during Running**  
 Thesleff, Alexander\* (*Chalmers Univ. of Technology*); Ludvigsson, Sofie (*Lunds Tekniska Högskola*); Öhr, Emilia (*Lunds Tekniska Högskola*); Ortiz-Catalan, Max (*Chalmers Univ. of Technology*)

17:15-19:00 ThPoS-03.5  
**The Effects of Hind Limb Suspension and Cast Mediated Immobilization on Bone Strength Properties**  
 Sanseverino, Matthew\* (*The College of New Jersey*); Speacht, Toni (*Penn State College of Medicine*); Donahue, Henry (*Virginia Commonwealth Univ.*); Lau, Anthony (*The College of New Jersey*)

17:15-19:00 ThPoS-03.6  
**Estimation of the Operating Force from the Human Motion**  
 Ding, Ming\* (*Nara Institute of Science and Tech.*); Baba, Ryuzo (*Nara Institute of Science and Tech.*); Masanthia, Kritsada (*Kasetsart University*); Garcia Ricardez, Gustavo Alfonso (*Nara Institute of Science and Tech.*); Takamatsu, Jun (*Nara Institute of Science and Tech.*); Ogasawara, Tsukasa (*Nara Institute of Science and Tech.*)

17:15-19:00 ThPoS-03.7  
**A Biomechatronic EPP Upper-Limb Prosthesis Controller and Its Performance Comparison to Other Topologies**  
 Bertos, Georgios\* (*National Technical University of Athens*); Kontogiannopoulos, Spyridon (*National Technical University of Athens*); Vangelatos, Zacharias (*UC Berkeley*); Papadopoulos, Evangelos (*National Technical University of Athens*)

17:15-19:00 ThPoS-03.8  
**A Biomechatronic EPP Upper-Limb Prosthesis Teleoperation System Implementation using Bluetooth Low Energy**  
 Bertos, Georgios\* (*National Technical University of Athens*); Koukoulas, Nikolaos (*NTUA*); Papadopoulos, Evangelos (*National Technical University of Athens*); Mablekos-Alexiou, Anestis (*University College London*)

17:15-19:00 ThPoS-03.9  
**Modeling Space Radiation Induced Bone Changes in Rat Femurs through Finite Element Analysis**  
 Johnson, Dale\* (*The College of New Jersey*); Lawrence, Summer (*University of North Carolina at Chapel Hill*); Livingston, Eric Wilson (*University of North Carolina at Chapel Hill*); Robert, Hienz (*Johns Hopkins University School of Medicine*); Davis, Catherine (*Johns Hopkins University School of Medicine*); Lau, Anthony (*The College of New Jersey*)

ThPoS-04: 17:15-19:00 Exhibit Hall 2  
**Biorobotics and Biomechanics (V) – Poster (Theme 8) (Poster Session)**

17:15-19:00 ThPoS-04.1  
**Model-Free Control of Movement in a Tendon-Driven Limb via a Modified Genetic Algorithm**  
 Marjaninejad, Ali\* (*University of Southern California*); Annigeri, Rohit (*University of Southern California*); Valero-Cuevas, Francisco (*University of Southern California*)

17:15-19:00 ThPoS-04.2  
**A Neuromorphic Quadratic, Integrate, and Fire Silicon Neuron with Adaptive Gain**  
 Parent, David\* (*San Jose State University*); Basham, Eric (*San Jose State University*)

17:15-19:00 ThPoS-04.3  
**Increasing the Learning Capacity of BCI Systems via CNN-HMM Models**  
 Saidutta, Yashas Malur\* (*Georgia Institute of Technology*); Fekri, Faramarz (*Georgia Institute of Technology*); Zou, Jun (*Formerly, Georgia Institute of Technology*)

17:15-19:00 ThPoS-04.4  
**Design and Experiment of a Passive Sit-to-Stand and Walking (STS) Assistance Device for the Elderly**  
 Kim, Seung-Won\* (*Korea Institute of Science and Technology*); Song, Jiyeon (*Korea Institute of Science and Technology*); Suh, Seungbeum (*Korea Institute of Science & Technology*); Lee, Woosub (*Korea Institute of Science and Technology (KIST)*); Kang, Sungchul (*Korea Institute of Science and Technology*)

17:15-19:00 ThPoS-04.5  
**Footwear Affects Biomechanical Work and Knee Adduction Moment during Stance Phase in Medial Knee Osteoarthritic Male Pakistani Adults**  
 Khan, Saad Jawaid\* (*University of Malaya*); Khan, Soobia Saad (*University of Malaya*); Rehman, Muhammad Zia ur (*National University of Science and Technology, Islamabad Pakistan*); Shafique, Muhammad (*Riphah International University*)

17:15-19:00 ThPoS-04.6  
**A Pilot Study on the Novel Non-Invasive Nerve-Holder with Negative-Pressure Suctions**  
 Hwang, Donghyun (*Korea Institute of Science and Technology*); Lim, Byeongkyu (*Korea Institute of Science and Technology (KIST)*); Jung, Hyun Gi (*Korea Institute of Science and Technology (KIST)*); Ihn, Yong Seok (*Korea Institute of Science and Technology*); Jeong, Jinwoo (*Sungkyunkwan University*); Yim, Sehyuk (*Korea Institute of Science and Technology*); Oh, Sang-Rok (*Korea Institute of Science and Technology*); Kim, Keehoon\* (*Korea Institute of Science and Technology*)

17:15-19:00 ThPoS-04.7  
**SATR-DL: Improving Surgical Skill Assessment and Task Recognition in Robot-Assisted Surgery with Deep Neural Networks**  
 Wang, Ziheng\* (*University of Texas at Dallas*); Majewicz, Ann (*University of Texas Dallas*)

17:15-19:00 ThPoS-04.8  
**Development of 6-Axis Orthodontic Force and Moment Sensing Device for Decreasing Accident of Orthodontic Treatment**  
 Shimoda, Kunio\* (*Tokyo University of Science*); Takemura, Hiroshi (*Tokyo University of Science*); Obara, Yuuya (*Tokyo University of Science*); Shigeta, Masahiro (*Tokyo University of Science*); Soga, Kohei (*Tokyo University of Science*); Suga, Kazuhiro (*Kogakuin University*); Lai, Wei-jen (*Tokyo Medical and Dental University*); Kim, Sunmin (*Tokyo Medical and Dental University*); Kanno, Zusei (*Tokyo Medical and Dental University*); Uo, Motohiro (*Tokyo Medical and Dental University*)

ThPoS-05: 17:15-19:00 Exhibit Hall 2  
**Biorobotics and Biomechanics (VI) – Poster (Theme 8) (Poster Session)**

17:15-19:00 ThPoS-05.1  
**An Assistive Robotic Arm for People with Physical Disabilities of the Extremities: HOG based Food Detection**  
 Gushi, Shotaro (*University of the Ryukyus*); Higa, Hiroki\* (*University of the Ryukyus*)

17:15-19:00 ThPoS-05.2  
**Impedance Model of the Interaction between Environment and Human Body and Its Modification Design**  
 Murai, Akihiko\* (*National Institute of Advanced Industrial Science and Technology (AIST)*)

17:15-19:00 ThPoS-05.3  
**Bone Drilling Breakthrough Detection via Energy-Based Signal**  
 Ho, Danny\* (*Chinese University of Hong Kong*); Li, Tingguang (*Chinese University of Hong Kong*); Meng, Max Q.-H. (*Chinese University of Hong Kong*)

17:15-19:00 ThPoS-05.4  
**Gaze-Controlled Laser Pointer Platform for People with Severe Motor Impairments: Preliminary Test in Telepresence**  
 Petrushin, Alexey (*Italian Institute of Technology*); Barresi, Giacinto (*Istituto Italiano di Tecnologia*); Mattos, Leonardo\* (*Istituto Italiano di Tecnologia*)

17:15-19:00 ThPoS-05.5  
**Visual Terrain Identification and Surface Inclination Estimation for Improving Human Locomotion with a Lower-Limb Prosthetic**  
 Diaz-Paz, Jean Pierre\* (*Universidad del Valle*); da Silva, Rafael Luiz (*North Carolina State University*); Zhong, Boxuan (*North Carolina State University*); Huang, He (*North Carolina State University and University of North Carolina at Chapel Hill*); Lobaton, Edgar (*North Carolina State University*)

17:15-19:00 ThPoS-05.6  
**Preliminary Analysis of Positive Knee Energy Injection in a Transfemoral Amputee Walking with a Powered Prosthesis**  
 Hood, Sarah\* (*Univ. of Utah*); Lenzi, Tommaso (*Univ. of Utah*)

17:15-19:00 ThPoS-05.7  
**Assessment of Robot Interventions in a Task-Based Rehabilitation: A Case Study**  
 MajidiRad, AmirHossein (*Wichita State Univ.*); Adhikari, Visharath (*Wichita State Univ.*); Yihun, Yimesker\* (*Wichita State Univ.*)

17:15-19:00 ThPoS-05.8  
**Automatic Surgical Skill Rating using Stylistic Behavior Components**  
 Ershad, Marzieh\* (*University of Texas at Dallas*); Rege, Robert (*University of Texas Southwestern Medical Center*); Majewicz, Ann (*University of Texas Dallas*)

ThPoS-06: 17:15-19:00 Exhibit Hall 2  
**Biorobotics and Biomechanics (VII) – Poster (Theme 8) (Poster Session)**

17:15-19:00 ThPoS-06.1  
**A Postural Model for Tracking the Base of Support**  
 Tiseo, Carlo\* (*Nanyang Technological Univ.*); Foo, Ming Jeat (*Nanyang Technological Univ.*); Veluvolu, Kalyana C. (*Kyungpook National Univ.*); Ang, Wei Tech (*Nanyang Technological Univ.*)

17:15-19:00 ThPoS-06.2  
**Biosensing by Learning: Cancer Detection as Iterative Optimization**  
 Chen, Yifan\* (*The Univ. of Waikato*); Sharifi, Neda (*The Univ. of Waikato*); Holmes, Geoffrey (*The Univ. of Waikato*); Cheang, U Kei (*Southern Univ. of Science and Technology*)

17:15-19:00 ThPoS-06.3  
**Design of a Handheld Trocar Insertion Device for Laparoscopic Surgery to Avoid Overshooting**  
 Sun, Junpeng\* (*Tokyo Institute of Technology*); Tadano, Kotaro (*Tokyo Institute of Technology*)

17:15-19:00 ThPoS-06.4  
**Assessment and Comparison of Target Registration Accuracy in Surgical Instrument Tracking Technologies**  
 Teatini, Andrea\* (*Univ. of Oslo - Dept. of Informatics, The Intervention Centre - Oslo Univ. Hospital*); Pérez de Frutos, Javier (*SINTEF, Technology and Society*); Langø, Thomas (*SINTEF*); Edwin, Bjørn (*Oslo Univ. Hospital, Dept. of Hepato-Pancreatic-Biliary surgery, Oslo, Norway*); Dept. of Health Research, SINTEF A); Elle, Ole Jacob (*The Intervention Centre, Oslo Univ. Hospital and Dept. of Informatics, Univ. of Oslo*)

17:15-19:00 ThPoS-06.5  
**Consistent Manufacturing Device for Coiled Polymer Actuators**  
 Horton, Sarah\* (*University of Ottawa*); Dumond, Patrick (*University of Ottawa*)

17:15-19:00 ThPoS-06.6  
**Testing of Coiled Nylon Actuators for use in Spastic Hand Exoskeletons**  
 Bahrami, Sanaz\* (*University of Ottawa*); Dumond, Patrick (*University of Ottawa*)

17:15-19:00 ThPoS-06.7  
**Assessing the Role of Teleoperated Robotic Systems in Biomanipulations – A Case Study on Blastocyst Microinjection**  
 Mattos, Leonardo\* (*Istituto Italiano di Tecnologia*); Caldwell, Darwin G. (*Italian Institute of Technology*); Grant, Edward (*NC State University*)

17:15-19:00 ThPoS-06.8  
**Surgical Robot with Environment Reconstruction and Force Feedback**  
 Li, Xiao\* (*University of Illinois at Urbana Champaign*); Kesavadas, Thenkurussi (*UIUC/HCESC*)

ThPoS-07: 17:15-19:00 Exhibit Hall 2  
**Biorobotics and Biomechanics (VIII) – Poster (Theme 8) (Poster Session)**

17:15-19:00 ThPoS-07.1  
**A Soft Wearable Robotic Suit for Ankle and Hip Assistance: A Preliminary Study**  
 Jin, Shanhai\* (*Yanbian University*); Guo, Shijie (*Hebei University of Technology*); Kazunobu, Hashimoto (*Ningbo Institute of Intelligent Manufacturing Industry*); Xiaogang, Xiong (*Harbin Institute of Technology Shenzhen Graduate School*); Yamamoto, Motoji (*Kyushu University*)

17:15-19:00 ThPoS-07.2  
**Locomotion Control of Pigeons using Polymer-Based Deep Brain Electrodes**  
 Choi, Gwang Jin (*Seoul National Univ.*); Jang, Jungwoo (*Seoul National Univ.*); Kang, Seonmi (*College of Veterinary Medicine and Research Institute for Veterinary Science, Seoul National Univ.*); Shim, Shinyong (*Seoul National Univ.*); Baek, Changhoon (*Seoul National Univ.*); Kim, Boyoon (*College of Veterinary Medicine and Research Institute for Veterinary Science, Seoul National Univ.*); Park, Yoonji (*College of Veterinary Medicine and Research Institute for Veterinary Science, Seoul National Univ.*); Kim, Sunhyo (*College of Veterinary Medicine and Research Institute for Veterinary Science, Seoul National Univ.*); Jung, Youngin (*Nanoscience and Technology, Seoul National Univ.*); Seo, Kangmoon (*Seoul National Univ. College of Veterinary Medicine*); Seo, Jong Mo (*Seoul National Univ., School of Engineering*); Song, Yoon-Kyu (*Seoul National Univ.*); Kim, Sung June\* (*Seoul National Univ.*)

17:15-19:00 ThPoS-07.3  
**A Force Augmenting Exoskeleton for the Human Hand Designed for Pinching and Grasping**  
 Triolo, Emily (*College of New Jersey*); Stella, Martha (*College of New Jersey*); BuSha, Brett\* (*College of New Jersey*)

17:15-19:00 ThPoS-07.4  
**High-Performance Polymer Dry Adhesives based on Ethylene Vinyl Acetate Copolymer and High-Adhesion Mechanism**  
 Yuan, Lifang (*Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences*); Wu, Tianzhun\* (*Shenzhen Institutes of Advanced Technology (SIAT), Chinese Academy of Sciences (CAS)*); Wang, Zhiwei (*Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences*)

17:15-19:00 ThPoS-07.5  
**Residual Limb Revision Surgery Alters Velocity-Curvature Coupling during Stepping and Turning of a Transfemoral Amputee**  
 Levy, Emily (*University of Texas at Dallas*); Gordon, Keith (*Feinberg School of Medicine, Northwestern University*); Fey, Nicholas\* (*University of Texas at Dallas*)

17:15-19:00 ThPoS-07.6  
**Virtual-Reality Cataract Surgery Simulator using Haptic Sensory Substitution in Continuous Circular Capsulorhexis**  
 Kim, Yunjoo\* (*KAIST*); Jeong, Hwayeong (*KAIST*); Park, Hyunkyu (*KAIST*); Kim, Ji Ah (*Seoul National University Bundang Hospital*); Kim, Taewoo (*Seoul National University Bundang Hospital*); Kim, Jung (*Korea Advanced Institute of Science and Technology*)

17:15-19:00 ThPoS-07.7  
**Evaluation of Compensatory Movement by Shoulder Joint Torque during Gain Adjustment of a Powered Prosthetic Wrist Joint**  
 Kato, Akira\* (*Waseda Univ.*); Nagumo, Haruno (*Waseda Univ.*); Miyake, Tamon (*Waseda Univ.*); Fujie, Masakatsu G. (*Waseda Univ.*); Sugano, Shigeki (*Waseda Univ.*)

17:15-19:00 ThPoS-07.8  
**Verification of Computed Muscle Control and Static Optimization for Isokinetic, Isometric and Isotonic Exercise of Upper Limb**  
 Choi, Wiha (*DGIST*); Oh, Sehoon\* (*DGIST*)

ThPoS-08: 17:15-19:00 Exhibit Hall 2  
**Brain Functional Imaging – Poster (Theme 6) (Poster Session)**

17:15-19:00 ThPoS-08.1  
**Disrupted Network Topology in Patients with Lewy Bodies Dementia Compared to Alzheimer's Disease, Parkinson Disease Dementia and Health Control**  
 Zhou, Hucheng (*Shanghai University*); Jiang, Jiehui\* (*Shanghai University*); Ping, Wu (*PET Center, Huashan Hospital, Fudan University*); Guo, Qihao (*Huashan Hospital*); Zuo, Chuantao (*PET Center, Huashan Hospital*)

17:15-19:00 ThPoS-08.2  
**Improving EEG-Based Motor Imagery Classification via Spatial and Temporal Recurrent Neural Networks**  
 Ma, Xuelin (*Institute of Automation, Chinese Academy of Sciences*); Qiu, Shuang (*Tianjin University*); Du, Changde (*Institute of Automation, Chinese Academy of Sciences*); He, Huiguang\* (*Institute of Automation, Chinese Academy of Sciences*); Xing, Jiezheng (*Institute of Automation, Chinese Academy of Sciences*)

17:15-19:00 ThPoS-08.3  
**Effect of Emotion States on the Updating Function of Working Memory**  
 Liu, Xiaoya (*Tianjin University*); Liu, Shuang\* (*Tianjin University*); Guo Dongyue, Dongyue (*Tianjin University*); Sheng Yue, Yue (*Tianjin University*); Ke, Yufeng (*Tianjin University*); An, Xingwei (*Tianjin University*); Xu, Minpeng (*Tianjin University*); He, Feng (*Tianjin University*); Cheng, Xiaoman (*Tianjin University of Technology*); Ming, Dong (*Tianjin University*)

17:15-19:00 ThPoS-08.4  
**Relationship between Kinesthetic/Visual Motor Imagery Difficulty and Event-Related Desynchronization/Synchronization**  
 Igasaki, Tomohiko\* (*Kumamoto Univ.*); Takemoto, Junya (*Kumamoto Univ.*); Sakamoto, Katsuya (*Kumamoto Univ.*)

17:15-19:00 ThPoS-08.5  
**Resting-State Gamma-Band EEG Abnormalities in Autism**  
 Shou, Guofa\* (*University of Oklahoma*); Mosconi, Matthew (*University of Kansas*); Ethridge, Lauren (*University of Oklahoma Health Sciences Center; University of Oklahoma*); Sweeney, John (*University of Cincinnati*); Ding, Lei (*University of Oklahoma*)

17:15-19:00 ThPoS-08.6  
**Single-Trial EEG Classification of Similar Errors**  
 Wirth, Christopher\* (*University of Sheffield*); Lacey, Eric (*Trinity College Dublin*); Dockree, Paul (*Trinity College Dublin*); Arvanah, Mahnaz (*University of Sheffield*)

17:15-19:00 ThPoS-08.7  
**On the Spatiotemporal Characteristics of Class-Discriminating Functional Networks**  
 Haddad, Ali (*Rutgers University*); Shamsi, Foroogh (*Rutgers University*); Najafzadeh, Laleh\* (*Rutgers University*)

17:15-19:00 ThPoS-08.8  
**Frequency Band Variations Predict EEG Single-Trial Classification Performance in Disorder of Consciousness Patients**  
 Finke, Andrea\* (*Bielefeld University, Bielefeld, Germany*); Steppacher, Inga (*Bielefeld University*); Kissler, Johanna (*Bielefeld University*); Ritter, Helge (*CITEC, CoR-Lab, Bielefeld University, Bielefeld, Germany*)

17:15-19:00 ThPoS-08.9  
**Effect of Body Positions on EEG Signals in Mal De Debarquement Syndrome**  
 Chen, Yafen\* (*Univ. of Oklahoma*); Tang, Julia (*Univ. of Oklahoma*); Shou, Guofa (*Univ. of Oklahoma*); Urbano, Diamond (*Laureate Institute for Brain Research*); Doudican, Benjamin (*Laureate Institute of Brain Research*); Besio, W. G. (*Univ. of Rhode Island*); Cha, Yoon-Hee (*Laureate Institute of Brain Research*); Ding, Lei (*Univ. of Oklahoma*); Yuan, Han (*Univ. of Oklahoma*)

ThPoS-09: 17:15-19:00 Exhibit Hall 2  
**Brain-Computer Interface – Poster (Theme 6) (Poster Session)**

17:15-19:00 ThPoS-09.1  
**Does a Subject Independent Dynamic Stopping Model for P300 Speller Work on Different Flash Durations and Inter Stimulus Intervals?**  
 Xue, Yuqi\* (*Tianjin University*); Tang, Jiabei (*Tianjin University*); Zhou, Peng (*Tianjin University*); Xu, Minpeng (*Tianjin University*); Ming, Dong (*Tianjin University*); Qi, Hongzhi (*Tianjin University*)



- 17:15-19:00 ThPoS-09.2  
**Different Feedback Methods for an SSVEP-Based BCI**  
 Benda, Mihaly (*Rhine-Waal University of Applied Sciences*); Stawicki, Piotr (*Rhine-Waal University of Applied Sciences*); Gemblar, Felix (*Rhine-Waal University of Applied Sciences*); Grichnik, Roland (*Rhine-Waal University of Applied Sciences*); Rezeika, Aya (*Rhine-Waal University of Applied Sciences*); Saboor, Abdul (*Rhine-Waal University of Applied Sciences*); Volosyak, Ivan\* (*Rhine-Waal University of Applied Sciences*)
- 17:15-19:00 ThPoS-09.3  
**Decoding Hindlimb Kinematics from Primate Motor Cortex using Long Short-Term Memory Recurrent Neural Networks**  
 Wang, Yinong (*Brown University*); Truccolo, Wilson\* (*Brown University*); Borton, David (*Brown University*)
- 17:15-19:00 ThPoS-09.4  
**Ensemble Convolved Feature Extraction for Affective Auditory P300 Brain-Computer Interfaces**  
 Onishi, Akinari\* (*Chiba Univ.*); Nakagawa, Seiji (*Chiba Univ.*)
- 17:15-19:00 ThPoS-09.5  
**Discriminating between Imagined Speech and Non-Speech Tasks using EEG**  
 Alsaleh, Mashael\* (*University of Sheffield*); Moore, Roger (*University of Sheffield*); Christensen, Heidi (*University of Sheffield*); Arvaneh, Mahnaz (*University of Sheffield*)
- 17:15-19:00 ThPoS-09.6  
**Using Robust Principal Component Analysis to Reduce EEG Intra-Trial Variability**  
 Jao, Ping-Keng\* (*École Polytechnique Fédérale de Lausanne*); Chavarriaga, Ricardo (*Ecole Polytechnique Federale de Lausanne*); Millán, José del R. (*Ecole Polytechnique Federale de Lausanne*)
- 17:15-19:00 ThPoS-09.7  
**Motor Imagery based Brain Computer Interface Paradigm for Upper Limb Stroke Rehabilitation**  
 Petersen, Jacob\* (*Rigshospitalet, Denmark*); Iversen, Helle K. (*Apoplexy Unit, Dept. of Neurology, Glostrup Hospital*); Puthusserypady, Sadasivan (*Technical University of Denmark*)
- 17:15-19:00 ThPoS-09.8  
**Hierarchical Graphical Models for Context-Aware Hybrid Brain-Machine Interfaces**  
 Ozdenizci, Ozan\* (*Northeastern Univ.*); Gunay, Sezen Yagmur (*Northeastern Univ.*); Quivira, Fernando (*Northeastern Univ.*); Erdogmus, Deniz (*Northeastern Univ.*)
- 17:15-19:00 ThPoS-09.9  
**Improvement in Classification of Tactile Event-Related Potentials using Random-Interval Tasks**  
 Hori, Junichi\* (*Niigata Univ.*); Akagawa, Rei (*Niigata Univ.*)
- 17:15-19:00 ThPoS-09.10  
**Evaluating the Performance of Non-Hair SSVEP-Based BCIs Featuring Template-Based Decoding Methods**  
 Chan, Wen-Hsuan (*University of California San Diego*); Chiang, Kuan-Jung (*University of California San Diego*); Nakanishi, Masaki (*University of California San Diego*); Wang, Yu-Te\* (*University of California San Diego*); Jung, Tzyy-Ping (*University of California San Diego*)
- 17:15-19:00 ThPoS-09.11  
**P300 Latency Estimation using Least Mean Squares Filter**  
 Mowla, Md Rakibul\* (*Kansas State University*); Huggins, Jane E. (*University of Michigan*); Natarajan, Balasubramaniam (*Kansas State University*); Thompson, David (*Kansas State University*)
- 17:15-19:00 ThPoS-09.12  
**Mental Fatigue Estimation using EEG in a Vigilance Task and Resting States**  
 Tian, Sen (*Hebei University of Technology*); Wang, Yijun\* (*Institute of Semiconductors, Chinese Academy of Sciences*); Dong, Guoya (*Hebei University of Technology*); Pei, Weihua (*Institute of Semiconductors, CAS*); Chen, Hongda (*Institute of Semiconductors, CAS*)
- 17:15-19:00 ThPoS-09.13  
**EEG-Based Discrimination of Different Cognitive Workload Levels from Mental Arithmetic**  
 Chin, Zheng Yang\* (*Institute for Infocomm Research*); Zhang, Xin (*Temasek Junior College*); Wang, Chuanchu (*Institute for Infocomm Research*); Ang, Kai Keng (*Institute for Infocomm Research*)
- 17:15-19:00 ThPoS-09.14  
**Modeling EEG-Based Motor Imagery with Session to Session Online Adaptation**  
 Zhang, Zhuo\* (*A\*STAR*); Foong, Ruyi (*Agency for Science, Technology and Research (A\*Star), Nanyang Technological University (NTU)*); Phua, Kok Soon (*Institute for Infocomm Research*); Wang, Chuanchu (*Institute for Infocomm Research*); Ang, Kai Keng (*Institute for Infocomm Research*)
- 17:15-19:00 ThPoS-09.15  
**Robust Local Field Potential-Based Neural Decoding by Actively Selecting Discriminative Channels**  
 Yang, Huijuan\* (*Institute for Infocomm Research, Agency for Science, Technology and Research (A\*STAR)*); Ang, Kai Keng (*Institute for Infocomm Research*); Libedinsky, Camilo (*A\*STAR*); So, Rosa (*Institute for Infocomm Research*)
- 17:15-19:00 ThPoS-09.16  
**EEG Channel Selection based on Correlation Coefficient for Motor Imagery Classification: A Study on Healthy Subjects and ALS Patient**  
 Yang, Tao\* (*Institute of Infocomm Research*); Ang, Kai Keng (*Institute for Infocomm Research*); Phua, Kok Soon (*Institute for Infocomm Research*); Yu, Juanhong (*Institute for Infocomm Research, Agency for Science, Technology and Research (A\*STAR)*); Toh, Valerie (*National Neuroscience Institute*); Ng, Wai Hoe (*National Neuroscience Institute*); So, Rosa (*Institute for Infocomm Research*)
- 17:15-19:00 ThPoS-09.17  
**A Hybrid EEG-EMG BMI Improves the Detection of Movement Intention in Cortical Stroke Patients with Complete Hand Paralysis**  
 López-Larraz, Eduardo\* (*University of Tübingen*); Birbaumer, Niels (*Eberhard-Karls-University*); Ramos-Murguialday, Ander (*Eberhard Karls University of Tübingen/Tecnalia*)
- 17:15-19:00 ThPoS-09.18  
**Data Space Adaptation for Multiclass Motor Imagery-Based BCI**  
 Giles, Joshua\* (*The Univ. of Sheffield*); Ang, Kai Keng (*Institute for Infocomm Research*); Mihaylova, Lyudmila (*Univ. of Sheffield*); Arvaneh, Mahnaz (*Univ. of Sheffield*)
- 17:15-19:00 ThPoS-09.19  
**Convolutional Neural Network for Target Face Detection using Single-Trial EEG Signal**  
 Wang, Haofei\* (*Hong Kong Univ. of Science and Technology*); Shi, Bertram E. (*Hong Kong Univ. of Science and Technology*); Wang, Yiwen (*Hong Kong Univ. of Science and Technology*)
- 17:15-19:00 ThPoS-09.20  
**Decoding Spike Trains from Neurons with Spatio-Temporal Receptive Fields**  
 Sadras, Nitin\* (*University of Southern California*); Shanechi, Maryam (*University of Southern California*)

17:15-19:00 ThPoS-09.21  
**Non-Contact Wearable EEG Sensors for SSVEP-Based Brain Computer Interface Applications**  
 Kim, Insoo\* (*University of Connecticut Health Center*); Soleymanpour, Rahim (*University of Connecticut*); Patel, Charmi (*University of Connecticut*)

17:15-19:00 ThPoS-09.22  
**Covert Speech vs. Motor Imagery: A Comparative Study of Class Separability in Identical Environments**  
 Jahangiri, Amir\* (*University of Essex*); Chau, Juan M. (*Pontificia Universidad Catolica del Peru*); Achanccaray, David (*Tohoku University*); Sepulveda, Francisco (*University of Essex*)

17:15-19:00 ThPoS-09.23  
**Upper Limb Prosthesis Control: A Hybrid EEG-EMG Scheme for Motion Estimation in Transhumeral Subjects**  
 Bakshi, Koushik\* (*Indian Institute of Technology Kharagpur*); Pramanik, Rajesh (*IPGMER SSKM Kolkata*); Mahadevappa, Manjunatha (*Indian Institute of Technology Kharagpur*); Kumar, Cheruvu Siva (*Indian Institute of Technology, Kharagpur*)

17:15-19:00 ThPoS-09.24  
**Brain Computer Interface using Modulation of Auditory Steady-State Response with Help of Stochastic Resonance**  
 Nishifuji, Seiji\* (*Yamaguchi Univ.*); Hirota, Nakamura (*Yamaguchi Univ.*); Matsubara, Atsushi (*Yamaguchi Univ.*)

17:15-19:00 ThPoS-09.25  
**Implication of N400 and P600 Waves in the Linguistic Code Change in Monolinguals and Bilinguals**  
 Achanccaray, David\* (*Tohoku Univ.*); Astucuri, Jhonatan Roberto (*Univ. Peruana Cayetano Heredia*); Hayashibe, Mitsuhiro (*INRIA*); Pirca, Jairo (*Pontificia Univ. Católica del Perú*); Espinoza Valverde, Vilma (*Univ. Peruana Cayetano Heredia*)

ThPoS-10: 17:15-19:00 Exhibit Hall 2  
**Brain Physiology and Modeling – Poster (Theme 6) (Poster Session)**

17:15-19:00 ThPoS-10.1  
**Module Differences of Glucose Metabolic Brain Network among Alzheimer's Disease, Parkinson's Disease Dementia, Lewy Body Dementia and Health Control**  
 Chen, Danyan (*Shanghai Institute for Advanced Communication and Data Science, Shanghai University*); Jiang, Jiehui\* (*Shanghai University*); Ping, Wu (*PET Center, Huashan Hospital, Fudan University*); Guo, Qihao (*Huashan Hospital*); Zuo, Chuantao (*PET Center, Huashan Hospital*)

17:15-19:00 ThPoS-10.2  
**EEG Neural Correlates of Self-Paced Left and Right-Hand Movement Intention during a Reaching Task**  
 Yang, Lingling\* (*Sun Yat-Sen Univ.*); Lu, Yao (*Sun Yat-Sen Univ.*)

17:15-19:00 ThPoS-10.3  
**Neuro-Glial Network Model of Postictal Generalized EEG Suppression (PGES)**  
 Grigorovsky, Vasily\* (*University of Toronto*); Bardakjian, Berj Luther (*University of Toronto*)

ThPoS-11: 17:15-19:00 Exhibit Hall 2  
**Human Performance – Poster (Theme 6) (Poster Session)**

17:15-19:00 ThPoS-11.1  
**Transfer Functions of a Spinal Cord Stimulation System in Mixed Media and Homogeneous Media for Estimation of RF Heating during MRI Scans**  
 Min, Xiaoyi\* (*St. Jude Medical, Inc.*); Sison, Shiloh (*St. Jude Medical, Inc.*)

17:15-19:00 ThPoS-11.2  
**Muscle Synergy for Hand Motions based on Electromyography Analysis**  
 Zeng, Haibin (*Shandong University*); Wei, Na (*Qilu Hospital, Shandong University*); Yue, Shouwei (*Dept. of Physical Medicine and Rehabilitation, Qilu Hospital, Shandong University*); Tian, Xincheng (*Shandong University*); Li, Ke\* (*Shandong University*)

17:15-19:00 ThPoS-11.3  
**Estimation of Compressive Tibiofemoral Force using Over Resistance of Ankle-Foot Orthosis on Gait**  
 Yamamoto, Masataka\* (*Hyogo Prefectural Awaji Medical Center*); Shimatani, Koji (*Prefectural University of Hiroshima*); Hasegawa, Masaki (*Faculty of Health and Welfare, Prefectural University of Hiroshima*); Murata, Takuya (*Hiroshima University*); Kurita, Yuichi (*Hiroshima University*)

17:15-19:00 ThPoS-11.4  
**Neuromechanical Simulation of Hand Pronation and Supination Task in Parkinson's Disease**  
 Ziegelman, Liran (*University of Illinois at Urbana-Champaign*); Hu, Yang (*University of Illinois at Urbana-Champaign*); Hernandez, Manuel\* (*University of Illinois*)

17:15-19:00 ThPoS-11.5  
**Control with Adjusted Pulse Frequency and Amplitude in Functional Electrical Stimulation**  
 Kitamura, Tomoya (*SAITama Univ.*); Mizukami, Naoto (*SAITama Univ.*); Mizoguchi, Hiroto (*SAITama Univ.*); Sakaino, Sho\* (*SAITama Univ.*); Tsuji, Toshiaki (*SAITama Univ.*)

17:15-19:00 ThPoS-11.6  
**An Analytical Approach to Posture-Dependent Muscle Force and Muscle Activation Patterns**  
 Marjaninejad, Ali\* (*University of Southern California*); Berry, Jasmine (*University of Southern California*); Valero-Cuevas, Francisco (*University of Southern California*)

17:15-19:00 ThPoS-11.7  
**Motion Sequence Alignment for a Kinect-Based In-Home Exercise System for Lymphatic Health and Lymphedema Intervention**  
 Chiang, An-Ti\* (*New York University*); Chen, Qi (*New York University*); Wang, Yao (*Polytechnic Institute of New York University*); Fu, Mei R. (*New York University*)

17:15-19:00 ThPoS-11.8  
**Comparison of Accelerometry-Based Features for Fall Risk Assessment Measured from Two Sensor Locations**  
 Immonen, Milla Sinikka\* (*VTT Technical Research Centre of Finland*); Similä, Heidi (*VTT Technical Research Centre of Finland Ltd.*)

17:15-19:00 ThPoS-11.9  
**Eye Movements of Patients with MCI against Wrong-Way Driving Countermeasures**  
 Nagao, Tomoki (*University of Tokyo*); Nihei, Misato\* (*University of Tokyo*); Kamata, Minoru (*University of Tokyo*); Tamai, Akira (*Tsuruga Onsen Hospital*); Nagami, Yutaka (*Takushoku University*); Nakagawa, Hiroshi (*East Nippon Expressway Company Ltd.*); Goto, Makoto (*East Nippon Expressway Company Ltd.*); Matsushita, Kensuke, Kensuke (*Nexco-East Engineering Company Ltd. A*)

17:15-19:00 ThPoS-11.10  
**Objective and Subjective Assessment of Amplified Parkinsonian Speech Quality**  
 Gaballah, Amr\* (*University of Western Ontario*); Parsa, Vijay (*University of Western Ontario*); Andreetta, Monika (*University of Western Ontario*); Adams, Scott (*University of Western Ontario*)

July 19 Thursday

17:15-19:00	ThPoS-11.11	<b>Latency and Amplitude Changes in Cognitive Event Related Potentials Due to Hemodialysis</b> Martínez Rosas, Lilia Elba ( <i>Univ. Autónoma Metropolitana</i> ); Rodríguez González, Monica ( <i>Univ. Autónoma Metropolitana</i> ); Bojorges-Valdez, Erik Rene* ( <i>Univ. Iberoamericana A.C.</i> ); Yanez-Suarez, Oscar ( <i>Univ. Autónoma Metropolitana</i> ); Pina-Ramirez, Omar ( <i>Univ. Autónoma Metropolitana</i> )	17:15-19:00	ThPoS-12.5	<b>Flexo-Glove: A 3D Printed Soft Exoskeleton Robotic Glove for Impaired Hand Rehabilitation and Assistance</b> Mohammadi, Alireza* ( <i>University of Melbourne</i> ); Lavranos, Jim ( <i>Caulfield Hospital</i> ); Choong, Peter ( <i>University of Melbourne</i> ); Oetomo, Denny ( <i>University of Melbourne</i> )
17:15-19:00	ThPoS-11.12	<b>Instance-Based Genre-Specific Music Emotion Prediction with an EEG Setup</b> Liu, Xiaoyu ( <i>Nanyang Technological University</i> ); Phyo Wai, Aung Aung ( <i>Nanyang Technological University</i> ); Kumaran, Shastikk ( <i>NUS High School of Mathematics and Science</i> ); Saravanan, Yukesh Ragavendar ( <i>NUS High School of Mathematics and Science</i> ); Lin, Zhiping* ( <i>Nanyang Technological University</i> )	17:15-19:00	ThPoS-12.6	<b>Crosstalk Reduction in Epimysial EMG Recordings from Transhumeral Amputees with Principal Component Analysis</b> Matran-Fernandez, Ana* ( <i>University of Essex</i> ); Mastinu, Enzo ( <i>Chalmers - University of technology</i> ); Poli, Riccardo ( <i>University of Essex</i> ); Ortiz-Catalan, Max ( <i>Chalmers University of Technology</i> ); Citi, Luca ( <i>University of Essex</i> )
17:15-19:00	ThPoS-11.13	<b>Impact of Nurse-Assisted Patient Turning at Different Sleep Stages on the Quality of Subsequent Sleep</b> Sugawara, Hisayoshi* ( <i>Graduate School of Nursing, Chiba University</i> ); Amemiya, Ayumi ( <i>Chiba University</i> ); Kase, Ryutarō ( <i>Graduate School of Nursing, Chiba University</i> ); Masujima, Mariko ( <i>Graduate School of Nursing, Chiba University</i> ); Sakai, Ikuko ( <i>Graduate School of Nursing, Chiba University</i> ); L. Tanaka, Yuji ( <i>Dept. of Nursing Physiology, Graduate School of Nursing, Chiba University</i> ); Komiyama, Masatoshi ( <i>Dept. of Nursing Physiology, Graduate School of Nursing, Chiba University</i> )	17:15-19:00	ThPoS-12.7	<b>Coordination of Voluntary Residual Muscle Contractions in Transtibial Amputees: A Pilot Study</b> Fleming, Aaron* ( <i>North Carolina State University and University of North Carolina at Chapel Hill</i> ); Huang, Stephanie ( <i>North Carolina State University</i> ); Huang, He ( <i>North Carolina State University and University of North Carolina at Chapel Hill</i> )
17:15-19:00	ThPoS-11.14	<b>Postural Balance Performance of Children with ADHD, with and without Medication: A Quantitative Approach</b> Saraipour, Maryam ( <i>Psychology Dept., Azad University, Science &amp; Research Campus</i> ); Shirazi, Seyed Yahya* ( <i>University of Central Florida</i> ); Shirazi, Elham ( <i>Mental Health Research Center, Tehran Institute of Psychiatry-School of Behavioral Sciences and Mental Health, Iran University of Medical Sciences</i> ); Ghazaei, Fatemeh ( <i>Neuromusculoskeletal Research Center, Dept. of Physical Medicine and Rehabilitation, Iran University of Medical Sciences</i> ); Parnianpour, Zahra ( <i>University of Chicago Graham School</i> )	17:15-19:00	ThPoS-12.8	<b>Comparing the Effects of Signal Noise on Pattern Recognition and Linear Regression-Based Myoelectric Controllers</b> Teh, Yuni* ( <i>Northwestern Univ.</i> ); Woodward, Richard ( <i>Northwestern Univ.</i> ); Hargrove, Levi ( <i>Rehabilitation Institute of Chicago</i> )
ThPoS-12: 17:15-19:00		Exhibit Hall 2	ThPoS-13: 17:15-19:00		
<b>Motor Neuroprostheses – Poster (Theme 6) (Poster Session)</b>			<b>Biorobotics and Biomechanics (I) – Poster (Theme 8) (Poster Session)</b>		
17:15-19:00	ThPoS-12.1	<b>A Reliable Multi-User EMG Interface based on a Generic-Musculoskeletal Model against Loading Weight Changes</b> Pan, Lizhi* ( <i>NC State University and University of North Carolina at Chapel Hill</i> ); Harmody, Andrew ( <i>North Carolina State University</i> ); Huang, He ( <i>North Carolina State University and University of North Carolina at Chapel Hill</i> )	17:15-19:00	ThPoS-13.1	<b>An sEMG-based Interface to give People with Severe Muscular Atrophy Control over Assistive Devices</b> Vogel, Jörn* ( <i>German Aerospace Center, DLR</i> ); Hagengruber, Annette ( <i>German Aerospace Center, DLR</i> )
17:15-19:00	ThPoS-12.2	<b>Spatio-Temporal Inertial Measurements Feature Extraction Improves Hand Movement Pattern Recognition without Electromyography</b> Khushaba, Rami N. ( <i>University of Technology, Sydney (UTS)</i> ); Krasoulis, Agamemnon* ( <i>Newcastle University</i> ); Al-Jumaily, Adel ( <i>University of Technology Sydney</i> ); Nazarpour, Kianoush ( <i>Newcastle University</i> )	17:15-19:00	ThPoS-13.2	<b>A Variable-Impedance Tactile Sensor with Online Performance Tuning for Tissue Hardness Palpation in Robot-Assisted Minimally Invasive Surgery</b> Ju, Feng* ( <i>Nanjing University of Aeronautics and Astronautics</i> ); Yun, Yahui ( <i>Nanjing University of Aeronautics and Astronautics</i> ); Zhang, Zhao ( <i>Jinling Institute of Technology</i> ); Wang, Yaoyao ( <i>Nanjing University of Aeronautics and Astronautics</i> ); Wang, Yaming ( <i>NJAA</i> ); Zhang, Lei ( <i>College of Mechanical and Electrical Engineering, Nanjing University of Aeronautics and Astronautics</i> ); Chen, Bai ( <i>Nanjing University of Aeronautics and Astronautics</i> )
17:15-19:00	ThPoS-12.3	<b>Abstract Decoding using Bayesian Muscle Activation Estimators</b> Dyson, Matthew ( <i>Newcastle University</i> ); Nazarpour, Kianoush* ( <i>Newcastle University</i> )	17:15-19:00	ThPoS-13.3	<b>Wrist Kinematics and Kinetics during Wheelchair Propulsion with a Novel Handle-Based Propulsion Mechanism</b> Babu Rajendra Kurup, Nithin ( <i>TU Wien</i> ); Puchinger, Markus ( <i>TU Wien</i> ); Keck, Thomas ( <i>TU Wien</i> ); Gfoehler, Margit* ( <i>TU Wien</i> )
17:15-19:00	ThPoS-12.4	<b>CMOS Magnetic Sensors for Wearable Magnetomyography</b> Heidari, Hadi ( <i>University of Glasgow</i> ); Zuo, Siming ( <i>University of Glasgow</i> ); Krasoulis, Agamemnon ( <i>Newcastle University</i> ); Nazarpour, Kianoush* ( <i>Newcastle University</i> )	17:15-19:00	ThPoS-13.4	<b>Eye-Hand Coordination Assessment Metrics using a Multi-Platform Haptic System with Eye-Tracking and Motion Capture Feedback</b> Pernalet, Norali* ( <i>California State Polytechnic University Pomona</i> ); Raheja, Amar ( <i>California State Polytechnic University, Pomona</i> ); Segura, Manuel ( <i>California State Polytechnic University, Pomona</i> ); Menychtas, Dimitrios ( <i>University of South Florida</i> ); Wiecek, Tyler ( <i>University of South Florida</i> ); Carey, Stephanie ( <i>University of South Florida</i> )
			17:15-19:00	ThPoS-13.5	<b>Granular Jamming based Controllable Organ Design for Abdominal Palpation</b> He, Liang* ( <i>Imperial College London</i> ); Herzig, Nicolas ( <i>Imperial College London</i> ); De Lusignan, Simon ( <i>University of Surrey</i> ); Nanayakkara, Thirishantha ( <i>King's College London</i> )

17:15-19:00 ThPoS-13.6  
**The Helping Hand: An Assistive Manipulation Framework using Augmented Reality and Tongue-Drive Interfaces**  
 Chu, Fu-Jen\* (*Georgia Institute of Tech.*); Xu, Ruinian (*Georgia Institute of Tech.*); Zhang, Zhenxuan (*Georgia Institute of Tech.*); Vela, Patricio A. (*Georgia Inst. of Tech.*); Ghovanloo, Maysam (*Georgia Institute of Tech.*)

17:15-19:00 ThPoS-13.7  
**Design and Evaluation of a Performance-Based Adaptive Curriculum for Robotic Surgical Training: A Pilot Study**  
 Mariani, Andrea (*Politecnico di Milano*); Pellegrini, Edoardo (*Politecnico di Milano*); Enayati, Nima (*Politecnico di Milano*); Kazanzides, Peter (*Johns Hopkins University*); Vidotto, Marco\* (*Politecnico di Milano*); De Momi, Elena (*Politecnico di Milano*)

ThPoS-14: 17:15-19:00 Exhibit Hall 2  
**Neural Stimulation – Poster (Theme 6)** (Poster Session)

17:15-19:00 ThPoS-14.1  
**Investigation of the Stimulation Capabilities of a High-Resolution Neurorecording Probe for the Application of Closed-Loop Deep Brain Stimulation**  
 Tarnaud, Thomas\* (*Ghent Univ./IMEC*); Tanghe, Emmeric (*Ghent Univ.*); Haesler, Sebastian (*Neuroelectronics Research Flanders, IMEC*); Lopez, Carolina Mora (*IMEC*); Martens, Luc (*iMinds / Ghent Univ.*); Joseph, Wout (*Ghent Univ.*)

17:15-19:00 ThPoS-14.2  
**Novel tDCS Montage Favors Lower Limb Motor Imagery Detection**  
 Rodriguez-Ugarte, Marisol\* (*Miguel Hernández University of Elche*); Ianez, Eduardo (*Universidad Miguel Hernandez de Elche*); Ortiz, Mario (*Universidad Miguel Hernández*); Azorin, Jose M. (*Universidad Miguel Hernandez de Elche*)

17:15-19:00 ThPoS-14.3  
**Simulation Study on Coil Design for Transcranial Magnetic Stimulation**  
 Hao, Dongmei\* (*Beijing Univ. of Technology*); Zhou, Yanan (*Beijing Research Center for Intelligent Agricultural Equipments*); Gao, Pei (*Beijing Univ. of Technology*); Yang, Lin (*Beijing Univ. of Technology*); Yang, Yimin (*Beijing Univ. of Technology*); Chen, Fei (*Southern Univ. of Science and Technology*)

17:15-19:00 ThPoS-14.4  
**Synchronous Responses of Population Neurons to the Changes of Inter-Pulse-Intervals during Stimulations of Afferent Fibers**  
 Ma, Weijian (*Zhejiang University*); Feng, Zhouyan\* (*Zhejiang University*); Hu, Hanhan (*Zhejiang University*); Wang, Zhaoxiang (*Zhejiang University*); Zhou, Wenjie (*Zhejiang University*)

17:15-19:00 ThPoS-14.5  
**Frequency-Dependent Inhibition Induced by Stimulations in Rat Hippocampus**  
 Qiu, Chen (*Zhejiang Univ.*); Feng, Zhouyan\* (*Zhejiang Univ.*); Zheng, Lvpio (*Zhejiang Univ.*); Huang, Lu (*Zhejiang Univ.*)

17:15-19:00 ThPoS-14.6  
**Merged Haptic Sensation in the Hand during Concurrent Non-Invasive Proximal Nerve Stimulation**  
 Vargas, Luis\* (*Joint Dept. of BioMedical Engineering at Univ. of North Carolina-Chapel Hill and NC State Univ.*); Huang, He (*North Carolina State Univ. and Univ. of North Carolina at Chapel Hill*); Zhu, Yong (*North Carolina State Univ.*); Hu, Xiaogang (*Univ. of North Carolina-Chapel Hill*)

17:15-19:00 ThPoS-14.7  
**On the Need for Adaptive Learning in On-Demand Deep Brain Stimulation for Movement Disorders**  
 Khobragade, Nivedita\* (*University of Illinois at Chicago*); Tuninetti, Daniela (*University of Illinois at Chicago*); Graupe, Daniel (*University of Illinois at Chicago*)

17:15-19:00 ThPoS-14.8  
**Delayed Feedback Frequency Adjustment for Deep Brain Stimulation of Subthalamic Nucleus Oscillations**  
 Daneshzand, Mohammad (*Univ. of Bridgeport*); Faezipour, Miad\* (*Univ. of Bridgeport*); Barkana, Buket (*Univ. of Bridgeport*)

17:15-19:00 ThPoS-14.9  
**Assessments of Basic Properties of Distal-Presented Bone-Conducted Ultrasonic Hearing**  
 Ogino, Riki (*Chiba University*); Otsuka, Sho (*Chiba University*); Nakagawa, Seiji\* (*Chiba University*)

17:15-19:00 ThPoS-14.10  
**PEDOT as a High Charge Injection Material for Low-Frequency Stimulation**  
 Boehler, Christian\* (*University of Freiburg*); Asplund, Maria (*University of Freiburg*)

17:15-19:00 ThPoS-14.11  
**Closed Loop Microfabricated Facial Reanimation Device Coupling EMG-Driven Facial Nerve Stimulation with a Chronically Implanted Multichannel Cuff Electrode**  
 Askari, Sina\* (*University of California Irvine*); Presacco, Alessandro (*University of Maryland, College Park*); Sahyouni, Ronald (*UC Irvine*); Djalilian, Hamid (*University of California*); Shkel, Andrei (*UC Irvine*); Lin, Harrison (*UC Irvine*)

17:15-19:00 ThPoS-14.12  
**Electrophysiological Activity Evoked by Direct Electrical Stimulation of the Human Brain: Interest of the P0 Component**  
 Boyer, Anthony\* (*INRIA, CAMIN, University of Montpellier*); Hugues, Duffau (*Plasticity of Central Nervous System, Stem Cells and Glial Tumors*); Vincent, Marion (*CNRS, University of Lille*); Ramdani, Sofiane (*UMR5506 - IDH*); Mandonnet, Emmanuel (*Hopital Lariboisière, Dept. of Neurosurgery*); Guiraud, David (*INRIA*); Bonnetblanc, François (*INRIA, LIRMM, Equipe Demar, University of Montpellier 2*)

17:15-19:00 ThPoS-14.13  
**Crucial Role of Nerve Depolarisation in High Frequency Conduction Block in Mammalian Nerves: Simulation Study**  
 Perra, Emanuele (*Aalto Univ. Helsinki*); Rapeaux, Adrien\* (*Imperial College London*); Nikolic, Konstantin (*Imperial College London*)

17:15-19:00 ThPoS-14.14  
**Therapeutic Effects of Repetitive Transcranial Magnetic Stimulation on Corticospinal Tract Activities and Neuromuscular Properties in Children with Cerebral Palsy**  
 Parvin, Shokoofeh (*Tehran University of Medical Sciences*); Shahrokh, Amin (*Noorafshar Hospital*); Tafakhori, Abbas (*School of Medicine, Tehran University of Medical Sciences*); Irani, Ashkan (*Dept. of Occupational Therapy, Faculty of Rehabilitation, Shahid Beheshti University of Medical Sciences Health Services*); Rasteh, Mehrnaz (*Day Hospital*); Mirbagheri, Mehdi\* (*Northwestern University/RIC*)

17:15-19:00 ThPoS-14.15  
**Analysis of Adverse Effects of Stimulation during DBS Surgery by Patient-Specific FEM Simulations**  
 Shah, Ashesh (*Univ. of Applied Sciences and Arts, Northwestern Switzerland*); Alonso, Fabiola (*Linköping Univ.*); Vogel, Dorian (*Univ. of Applied Sciences and Arts Northwestern Switzerland*); Wardell, Karin (*Linköping Univ.*); Coste, Jérôme (*Centre Hospitalier Universitaire de Clermont-Ferrand, Image-Guided Clinical NeuroSciences and Connectomics*); Lemaire, Jean-Jacques (*Centre Hospitalier Universitaire de Clermont-Ferrand, Image-Guided Clinical NeuroSciences and Connectomics*); Pison, Daniela (*Univ. of Applied Sciences and Arts Northwestern Switzerland*); Hemm, Simone\* (*Univ. of Applied Sciences and Arts Northwestern Switzerland*)

17:15-19:00	ThPoS-14.16	<b>Optimizing Stimulus Waveforms for Suppressing Epileptic Activity Reveals a Counterbalancing Mechanism</b> Chang, Joshua* ( <i>Dell Medical School, Univ. of Texas at Austin</i> ); Paydarfar, David ( <i>Univ. of Texas at Austin, Dell Medical School</i> )	17:15-19:00	ThPoS-15.2	<b>Experimental Study on Nerve Signals Block for Spasticity based on Antimissile Strategy</b> Wang, Zhigong* ( <i>Southeast University</i> ); Lü, Xiaoying ( <i>Southeast University</i> ); Gao, Yujie ( <i>Southeast University</i> ); Zhang, Jianjun ( <i>Southeast University</i> ); Wang, Boshuo ( <i>Duke University</i> )
17:15-19:00	ThPoS-14.17	<b>Micro-Solenoid Inductors with Magnetic Core for Neural Stimulation</b> Zaeimbashi, Mohsen ( <i>Northeastern University</i> ); Wang, Zhiguang ( <i>Northeastern University</i> ); Lee, Seung Woo ( <i>Massachusetts General Hospital and Harvard Medical School</i> ); Cash, Sydney ( <i>Massachusetts General Hospital</i> ); Fried, Shelley ( <i>Massachusetts General Hospital / Harvard Medical School</i> ); Sun, Nian* ( <i>Northeastern University</i> )	17:15-19:00	ThPoS-15.3	<b>Using Interictal HFOs to Improve the Identification of Epileptogenic Zones in Preparation for Epilepsy Surgery</b> Farahmand, Sina* ( <i>Illinois Institute of Technology</i> ); Sobayo, Tiwalade ( <i>Illinois Institute of Technology</i> ); Mogul, David ( <i>Illinois Institute of Technology</i> )
17:15-19:00	ThPoS-14.18	<b>Electrical Weapon Charge Delivery with Arcing</b> Chiles, Bryan ( <i>Axon Enterprise, Inc.</i> ); Nerheim, Max ( <i>TASER International</i> ); Brave, Michael ( <i>LAAW International, LLC</i> ); Panescu, Dorin ( <i>Advanced Cardiac Therapeutics</i> ); Kroll, Mark William* ( <i>University of Minnesota</i> )	17:15-19:00	ThPoS-15.4	<b>Hardware Implementation of a Performance and Energy-Optimized Convolutional Neural Network for Seizure Detection</b> Heller, Simon* ( <i>Dept. of Microsystems Engineering - Univ. of Freiburg</i> ); Huegle, Maria ( <i>Univ. of Freiburg</i> ); Nematollahi, Iman ( <i>Univ. of Freiburg</i> ); Manzouri, Farrokh ( <i>Univ. of Freiburg</i> ); Dümpelmann, Matthias ( <i>Univ. Medical Center Freiburg</i> ); Schulze-Bonhage, Andreas ( <i>Univ. Hospital Freiburg</i> ); Boedecker, Joschka ( <i>Univ. of Freiburg</i> ); Woias, Peter ( <i>Univ.</i> )
17:15-19:00	ThPoS-14.19	<b>Neuromuscular Electrical Stimulation with Kilohertz Frequency Alternating Current to Enhance Sensorimotor Cortical Excitability</b> Yun, Zhao ( <i>Chongqing University</i> ); Hou, Wensheng* ( <i>Bioengineering Inst of Chongqing University</i> ); Wang, Xing ( <i>Chongqing University</i> )	17:15-19:00	ThPoS-15.5	<b>Neural Modulation by Repetitive Transcranial Magnetic Stimulation (rTMS) for BCI Enhancement in Stroke Patients</b> Shu, Xiaokang* ( <i>Shanghai Jiao Tong Univ.</i> ); Chen, Shugeng ( <i>Huashan Hospital, Fudan Univ.</i> ); Chai, Guohong ( <i>Shanghai Jiao Tong Univ.</i> ); Sheng, Xinjun ( <i>Shanghai Jiao Tong Univ.</i> ); Jia, Jie ( <i>Fudan Univ.</i> ); Zhu, Xiangyang ( <i>Shanghai Jiao Tong Univ.</i> )
17:15-19:00	ThPoS-14.20	<b>Estimating Voluntary Activation of the Elbow and Wrist Muscles in Chronic Hemiparetic Stroke using Twitch Interpolation Methodology</b> Garmirian, Lindsay* ( <i>Northwestern University</i> ); Acosta, Anamaria ( <i>Northwestern University</i> ); Hill, Nayo Marel ( <i>Northwestern University</i> ); Dewald, Julius P. A. ( <i>Northwestern University</i> )	17:15-19:00	ThPoS-15.6	<b>Ultra Broad Band Neural Activity Portends Seizure Onset in a Rat Model of Epilepsy</b> Ehrens, Daniel* ( <i>Johns Hopkins University</i> ); Assaf, Fadi ( <i>Rappaport Faculty of Medicine and Research Institute, Technion - Israel Institute of Technology</i> ); Cowan, Noah ( <i>Johns Hopkins University</i> ); Sarma, Sridevi V. ( <i>Johns Hopkins University</i> ); Schiller, Yitzhak ( <i>Rappaport Faculty of Medicine and Research Institute, Technion - Israel Institute of Technology</i> )
17:15-19:00	ThPoS-14.21	<b>Computational Models and Tools for Developing Sophisticated Stimulation Strategies for Retinal Neuroprostheses</b> Guo, Tianruo ( <i>University of New South Wales</i> ); Tsai, David ( <i>Columbia University</i> ); Muralidharan, Madhuvanthi ( <i>GSBME UNSW</i> ); Li, Liming ( <i>Shanghai Jiao Tong University</i> ); Suaning, Gregg ( <i>University of Sydney</i> ); Morley, John William ( <i>University of Western Sydney</i> ); Dokos, Socrates ( <i>University of New South Wales</i> ); Lovell, Nigel H.* ( <i>University of New South Wales</i> )	17:15-19:00	ThPoS-15.7	<b>Development of a Method to Quantify Abnormal Kinetic and Kinematic Coupling Patterns during Functional Movements in the Paretic Arm and Hand of Individuals with Pediatric Hemiplegia</b> Hill, Nayo Marel* ( <i>Northwestern University</i> ); Dewald, Julius P. A. ( <i>Northwestern University</i> )
17:15-19:00	ThPoS-14.22	<b>Electric Fields Induced by Transcutaneous and Intracranial Current Injections in the Rat Brain</b> Asan, Ahmet ( <i>New Jersey Institute of Technology</i> ); Gok, Sinan ( <i>New Jersey Institute of Technology</i> ); Sahin, Mesut* ( <i>New Jersey Institute of Technology</i> )	17:15-19:00	ThPoS-15.8	<b>Challenges of Stride Segmentation and Their Implementation for Impaired Gait</b> Bobić, Vladislava* ( <i>Innovation Center of School of Electrical Engineering, Univ. of Belgrade</i> ); Djurić-Jovičić, Milica ( <i>Innovation Center of School of Electrical Engineering, Univ. of Belgrade</i> ); Radovanović, Saša ( <i>Institute for Medical Research, Univ. of Belgrade, Serbia</i> ); Dragašević, Nataša ( <i>Neurology Clinic, Clinical Center of Serbia, Medical Faculty, Univ. of Belgrade, Serbia</i> ); Kostić, Vladimir ( <i>Neurology Clinic, Clinical Center of Serbia, Medical Faculty, Univ. of Belgrade, Serbia</i> ); Popović, Mirjana ( <i>Institute for Medical Research, Univ. of Belgrade, Serbia</i> )
ThPoS-15: 17:15-19:00		Exhibit Hall 2			
		<b>Neurological Disorders – Poster (Theme 6) (Poster Session)</b>			
17:15-19:00	ThPoS-15.1	<b>Congestive Heart Failure Detection via Short-Time Electrocardiographic Monitoring for Fast Reference Advice in Urgent Medical Conditions</b> Zhang, Yi* ( <i>University of Electronic Science and Technology of China</i> ); Yang, Qin ( <i>University of Electronic Science and Technology of China</i> ); Pang, Winnie ( <i>University of Electronic Science and Technology of China</i> ); Argha, Ahmadreza ( <i>University of New South Wales</i> ); Xu, Peng ( <i>University of Electronic Science and Technology of China</i> ); Su, Steven Weidong ( <i>University of Technology, Sydney</i> ); Yao, Dezong ( <i>University of Electronic Science and Technology of China</i> )	17:15-19:00	ThPoS-15.9	<b>Temporal Pattern of Ripple Events in Temporal Lobe Epilepsy: Towards a Pattern-Based Localization of the Seizure Onset Zone</b> Sumsky, Stefan ( <i>University of Connecticut</i> ); Santaniello, Sabato* ( <i>University of Connecticut</i> )

17:15-19:00 ThPoS-15.10  
**Frequency Dependence of Shear Wave Velocity in Stroke-Affected Muscles during Isometric Contraction Preliminary Data**  
 Saadat, Fatemeh\* (*Shirley Ryan AbilityLab (formerly Rehabilitation Institute of Chicago)*); Son, Jongsang (*Shirley Ryan AbilityLab (formerly Rehabilitation Institute of Chicago)*); Rymer, William Zev (*Northwestern & Rehab Inst of Chicago*); Lee, Sabrina (*Northwestern Univ., Rehabilitation Institute of Chicago*)

17:15-19:00 ThPoS-15.11  
**Neural Correlation between Evoked Tactile Sensation and Central Activities in the Somatosensory Cortex**  
 Yin, Pengyu (*School of BioMedical Engineering, Shanghai Jiao Tong Univ.*); Hao, Manzhao (*School of BioMedical Engineering, Shanghai Jiao Tong Univ.*); Liu, Xiaodong (*Shanghai Jiao Tong Univ.*); Cao, chunyan (*Dept. of Functional Neurosurgery, RuiJin Hospital Shanghai Jiao Tong Univ. School of Medicine*); Niu, Chuanxin M. (*Ruijin Hospital, School of Medicine, Shanghai Jiao Tong Univ.*); Lan, Ning\* (*Shanghai Jiao Tong Univ.*)

ThPoS-16: 17:15-19:00 Exhibit Hall 2  
**Neuromuscular Systems – Poster (Theme 6) (Poster Session)**

17:15-19:00 ThPoS-16.1  
**Gait Symmetry can Reduce Dependence on the Intact Limb during Walking with Constraint of Unilateral Metatarsophalangeal Joints**  
 Liu, Yixiang (*Harbin Institute of Technology*); Zang, Xizhe\* (*Harbin Institute of Technology*); Zhang, Niansong (*Nanjing University of Science and Technology*); Wu, Ming (*Rehab. Institute of Chicago*)

17:15-19:00 ThPoS-16.2  
**Towards Enhancement of Patients' Engagement: Online Modification of Rehabilitation Training Modes using Facial Expression and Muscle Fatigue**  
 Wang, Jiaying (*Institute of Automation, Chinese Academy of Sciences*); Wang, Weiqun\* (*Chinese Academy of Sciences*); Hou, Zeng-Guang (*Institute of Automation, Chinese Academy of Sciences*); Liang, Xu (*Institute of Automation, Chinese Academy of Sciences*); Ren, Shixin (*Chinese Academy of Sciences*); Peng, Liang (*Institute of Automation, Chinese Academy of Sciences*)

17:15-19:00 ThPoS-16.3  
**Prediction Method of Walking Speed at Swing Phase using Soleus Electromyogram Signal at Previous Stance Phase**  
 Choi, Taejin (*Korea Institute of Science and Technology*); Im, Chang-Hwan (*Hanyang University*); Kim, Seung-Jong (*Korea Institute of Science and Technology*); Kim, Hyungmin (*Korea Institute of Science and Technology*); Lee, Jong Min\* (*Korea Institute of Science and Technology*)

17:15-19:00 ThPoS-16.4  
**Application of an LDA Classifier for Determining User-Intent in Multi-DOF Quasi-Static Shoulder Tasks in Individuals with Chronic Stroke: Preliminary Analysis**  
 Kopke, Joseph V\* (*Northwestern Univ.*); Hargrove, Levi (*Rehab. Institute of Chicago*); Ellis, Michael (*Northwestern Univ.*)

17:15-19:00 ThPoS-16.5  
**Designing Feedback Controllers for Human-Prosthetic Systems using H-Infinity Model Matching**  
 Costacurta, Julia\* (*Johns Hopkins University*); Osborn, Luke (*Johns Hopkins University*); Thakor, Nitish (*Johns Hopkins University*); Sarma, Sridevi V. (*Johns Hopkins University*)

17:15-19:00 ThPoS-16.6  
**Parkinsonian Tremor Detection from Subthalamic Nucleus Local Field Potentials for Closed-Loop Deep Brain Stimulation**  
 Shah, Syed Ahmar\* (*Postdoctoral Scientist, Univ. of Oxford*); Tinkhauser, Gerd (*Univ. of Oxford*); Chen, Chiung-Chu (*Chang Gung Univ.*); Little, Simon (*Institute of Neurology, Faculty of Brain Sciences, Univ. College London*); Brown, Peter (*Director of the Medical Research Council Brain Network Dynamics Unit at the Univ. of Oxford, and Professor of Experimental*)

17:15-19:00 ThPoS-16.7  
**Identifying Noisy Electrodes in High Density Surface Electromyography Recordings Through Analysis of Spatial Similarities**  
 Bingham, Adrian\* (*RMIT University Melbourne*); Jelfs, Beth (*RMIT University*); Poosapadi Arjunan, Sridhar (*SRM Institute of Science and Technology*); Kant Kumar, Dinesh (*RMIT University*)

17:15-19:00 ThPoS-16.8  
**Interference of Visual Conditions and Stance Postures on Center of Pressure Sway in Patients with Schizophrenia with History of Fall**  
 Chern, Jen-Suh (*National Taiwan Normal University*); Wang, San-Ping (*Yu-Li Hospital*); Chang, Jer-Hao (*National Chung Kung University*); Yu, Sung-Nien\* (*National Chung Cheng University*); Lin, Yu-Zhe (*National Chung Cheng University*)

17:15-19:00 ThPoS-16.9  
**Combined Visual Feedback with Pelvic Assistance Force Improves Step Length during Treadmill Walking in Individuals with Post-Stroke Hemiparesis**  
 Hsu, Chao-Jung (*Shirley Ryan AbilityLab*); Kim, Janis (*Rehabilitation Institute of Chicago*); Wu, Ming\* (*Rehabilitation Institute of Chicago*)

17:15-19:00 ThPoS-16.10  
**Design of Functional Electrical Stimulation Cycling System for Lower-Limb Rehabilitation of Stroke Patients**  
 Wang, Xiaojun (*Chinese University of Hong Kong*); Leung, Wing Cheong (*Chinese University of Hong Kong*); Fang, Yuqi (*Chinese University of Hong Kong*); Chen, Sai (*Chinese University of Hong Kong*); Mehra, Prabhav (*Locus.sh*); Tong, Kai Yu, Raymond\* (*Chinese University of Hong Kong*)

17:15-19:00 ThPoS-16.11  
**Exploration of the Effect of Race on Cortical Current Flow Due to Transcranial Direct Current Stimulation: Comparison across Caucasian, Chinese, and Indian Standard Brains**  
 Datta, Abhishek (*Soterix Medical, Inc.*); Thomas, Chris\* (*Soterix Medical, Inc.*); Huang, Yu (*City College of New York*); Venkatasubramanian, Ganesan (*National Institute of Mental Health And NeuroSciences*)

17:15-19:00 ThPoS-16.12  
**Development and Evaluation of a Kinect-Based Rapid Movement Therapy Training Platform for Balance Rehabilitation**  
 Junata, Melisa\* (*Chinese Univ. of Hong Kong*); Cheng, Kenneth Chik-Chi (*Chinese Univ. of Hong Kong*); Man, Hok Sum (*Chinese Univ. of Hong Kong*); Wang, Xin (*Chinese Univ. of Hong Kong*); Tong, Kai Yu, Raymond (*Chinese Univ. of Hong Kong*)

ThPoS-17: 17:15-19:00 Exhibit Hall 2  
**Parameter Estimation in Biomedical Models – Poster (Theme 4) (Poster Session)**

17:15-19:00 ThPoS-17.1  
**Studying the Sensitivity of Coronary Blood Flow using Nondimensional Analysis**  
 Alwan, Ghazwan\* (*University of Missouri*); Manring, Noah (*University of Missouri*); Emter, Craig (*University of Missouri*); Delafontaine, Patrick (*University of Missouri*); Leary, Emily (*University of Missouri*)

17:15-19:00 ThPoS-17.2  
**Modelling of Fasting Glucose-Insulin Dynamics from Sparse Data**  
 Aradóttir, Tinna Björk\* (*Technical University of Denmark*); Boiroux, Dimitri (*Technical University of Denmark*); Bengtsson, Henrik (*Novo Nordisk A/S*); Kjølstad Poulsen, Niels (*Technical University of Denmark*)



17:15-19:00	ThPoS-17.3	<b>An Application of Conditional Robust Calibration (CRC) to the Lotka-Volterra Predator-Prey Model in Computational Systems Biology: A Comparison of Two Sampling Strategies</b> Bianconi, Fortunato* ( <i>ICT4life Srl</i> ); Antonini, Chiara ( <i>Univ. of Perugia, Dept. of Engineering</i> ); Tomassoni, Lorenzo ( <i>Univ. of Perugia, Dept. of Engineering</i> ); Valigi, Paolo ( <i>Univ. of Perugia</i> )	17:15-19:00	ThPoS-18.6	<b>Deep-2'-O-Me: Predicting 2'-O-Methylation Sites by Convolutional Neural Networks</b> Mostavi, Milad ( <i>University of Texas at San Antonio</i> ); Salekin, Sirajul ( <i>University of Texas at San Antonio</i> ); Huang, Yufei* ( <i>University of Texas at San Antonio</i> )
17:15-19:00	ThPoS-17.4	<b>Parameter Estimation in Synaptic Coupling Model using a Point Process Modeling Framework</b> Amidi, Yalda* ( <i>Isfahan University of Technology</i> ); Nazari, Behzad ( <i>Isfahan University of Technology</i> ); Sadri, Saeed ( <i>Isfahan University of Technology</i> ); Eden, Uri ( <i>Boston University</i> ); Yousefi, Ali ( <i>Massachusetts General Hospital and Harvard Medical School</i> )	ThPoS-19: 17:15-19:00		Exhibit Hall 2
17:15-19:00	ThPoS-17.5	<b>A Mean Field Model of Acute Hepatic Encephalopathy</b> Song, Jiangling ( <i>Massachusetts General Hospital</i> ); Sun, Haoqi ( <i>Massachusetts General Hospital</i> ); Jing, Jin ( <i>Massachusetts General Hospital</i> ); Carlos, Luis ( <i>Massachusetts General Hospital</i> ); Chao, Lingya ( <i>Massachusetts General Hospital</i> ); Zhang, Rui ( <i>The Medical Big Data Research Center of School Mathematics, Northwest Univ., China</i> ); Cash, Sydney ( <i>Massachusetts General Hospital</i> ); Westover, Brandon* ( <i>MGH / Harvard Medical School</i> )	<b>Neural Signal Processing Poster (Theme 6) (Poster Session)</b>		
17:15-19:00	ThPoS-17.6	<b>A Novel Bi-Level Framework for Fitting the Parameters in Cardiac Cellular Models</b> Pouranbarani, Elnaz* ( <i>University of Calgary</i> ); Nygren, Anders ( <i>University of Calgary</i> )	17:15-19:00	ThPoS-19.1	<b>Offline Lower-Limb Kinematic Decodification by Segments of EEG Signals</b> Mercado, Luis* ( <i>Universidad Autónoma de Nuevo León</i> ); Azorin, Jose M. ( <i>Universidad Miguel Hernandez de Elche</i> ); Platas-Garza, Miguel Angel ( <i>Universidad Autónoma de Nuevo León</i> ); Ubeda, Andres ( <i>University of Alicante</i> ); Quiroz, Griselda ( <i>Universidad Autónoma de Nuevo León</i> )
ThPoS-18: 17:15-19:00	Exhibit Hall 2	<b>Systems Biology and Systems Medicine – Poster (Theme 4) (Poster Session)</b>	17:15-19:00	ThPoS-19.2	<b>Eigen Decomposition of Cardiac Synchronous EEGs for Investigation of Neural Effects of Tempo and Cognition of Songs</b> Mollakazemi, Mohammad Javad* ( <i>University of Kentucky</i> ); Biswal, Dibyajyoti ( <i>University of Kentucky</i> ); Evans, Joyce ( <i>University of Kentucky</i> ); Patwardhan, Abhijit ( <i>University of Kentucky</i> )
17:15-19:00	ThPoS-18.1	<b>Microbiota of Inflammatory Bowel Disease Models</b> Gao, Ziyang ( <i>Duke University</i> ); Chen, Kai-Yuan ( <i>Duke University</i> ); Mueller, Olaf ( <i>Duke University</i> ); Zhang, Han ( <i>Johns Hopkins University</i> ); Rakhilin, Nikolai ( <i>School of Electrical and Computer Engineering, Cornell University</i> ); Chen, Jiande ( <i>Johns Hopkins University</i> ); Shen, Xiling* ( <i>Duke University</i> )	17:15-19:00	ThPoS-19.3	<b>EMD-Based, Mean-Phase Coherence Analysis to Assess Instantaneous Phase-Synchrony Dynamics in Epilepsy Patients</b> Farahmand, Sina* ( <i>Illinois Institute of Technology</i> ); Sobayo, Tiwalade ( <i>Illinois Institute of Technology</i> ); Mogul, David ( <i>Illinois Institute of Technology</i> )
17:15-19:00	ThPoS-18.2	<b>Single-Cell Transcriptomics Reveals Heterogeneity and Drug Response of Human Colorectal Cancer Organoids</b> Chen, Kai-Yuan ( <i>Duke Univ.</i> ); Srinivasan, Tara ( <i>Cornell Univ.</i> ); Lin, Christopher ( <i>Duke Univ.</i> ); Tung, Kuei-Ling ( <i>Dept. of Biological and Environmental Engineering, Cornell Univ.</i> ); Hsu, David ( <i>Duke Univ.</i> ); Lipkin, Steven ( <i>Cornell Weill Medicine</i> ); Shen, Xiling* ( <i>Duke Univ.</i> ); Gao, Ziyang ( <i>Duke Univ.</i> )	17:15-19:00	ThPoS-19.4	<b>Cross-Recurrence Quantification Analysis for Inter-Muscular Coordination during Power Grip at Different Force Levels</b> Zhang, Na ( <i>Shandong University</i> ); Wei, Na ( <i>Qilu Hospital, Shandong University</i> ); Yue, Shouwei ( <i>Dept. of Physical Medicine and Rehabilitation, Qilu Hospital, Shandong University</i> ); Tian, Xincheng ( <i>Shandong University</i> ); Li, Ke* ( <i>Shandong University</i> )
17:15-19:00	ThPoS-18.3	<b>In Silico Model of Vitamin D3 Dependent NADPH Oxidase Complex Activation during Mycobacterium Infection</b> Gough, Maya* ( <i>Univ. of Houston</i> ); May, Elebeoba ( <i>Univ. of Houston</i> )	17:15-19:00	ThPoS-19.5	<b>Weighted Network Density Predicts Range of Latent Variable Model Accuracy</b> Palmerston, Jeremiah Bradley* ( <i>City University of Hong Kong</i> ); She, Qi ( <i>City University of Hong Kong</i> ); Chan, Rosa H. M. ( <i>City University of Hong Kong</i> )
17:15-19:00	ThPoS-18.4	<b>Modeling HPV Late Promoter Regulation</b> Giaretta, Alberto* ( <i>University of Padova, Dept. of Information Engineering</i> ); Toffolo, Gianna ( <i>University of Padova</i> )	17:15-19:00	ThPoS-19.6	<b>Short-Term Fourier Transform based Spike Detection of Spontaneous Peripheral Nerve Activity</b> Shafer, Benjamin ( <i>Food and Drug Admin.</i> ); Yaghoubi, Farid ( <i>FDA</i> ); Vasudevan, Srikanth* ( <i>Food and Drug Admin.</i> )
17:15-19:00	ThPoS-18.5	<b>Spatiotemporal Analysis of Mycobacterium-Dependent Macrophage Response</b> Stolley, Danielle* ( <i>University of Houston</i> ); May, Elebeoba ( <i>University of Houston</i> )	17:15-19:00	ThPoS-19.7	<b>Noninvasive Seizure Prediction using Autonomic Measurements in Patients with Refractory Epilepsy</b> Al-Bakri, Amir ( <i>University of Kentucky</i> ); Villamar, Mauricio ( <i>University of Kentucky</i> ); Haddix, Chase ( <i>University of Kentucky</i> ); Bensalem-Owen, Meriem ( <i>University of Kentucky Hospital</i> ); Sunderam, Sridhar* ( <i>University of Kentucky</i> )
			17:15-19:00	ThPoS-19.8	<b>Subspace-Based Suppression of Cortical Stimulation Artifacts</b> Wang, Po T. ( <i>University of California Irvine</i> ); McCrimmon, Colin M ( <i>University of California, Irvine</i> ); Heydari, Payam ( <i>University of California Irvine</i> ); Do, An H. ( <i>University of California Irvine</i> ); Nenadic, Zoran* ( <i>University of California Irvine</i> )

ThPoS-20: 17:15-19:00 Exhibit Hall 2  
**Sensory Neuroprostheses – Poster (Theme 6) (Poster Session)**

- 17:15-19:00 ThPoS-20.1  
**Positioning the Nerve Cuff Distally on the Sciatic Nerve Improves the Classification of Ankle-Movement Proprioceptive ENG Signals**  
 Silveira, Carolina\* (*Newcastle University*); Brunton, Emma Kate (*Newcastle University*); Spendiff, Sally (*Newcastle University*); Nazarpour, Kianoush (*Newcastle University*)
- 17:15-19:00 ThPoS-20.2  
**Visual and Electric Spiking Responses of Seven Types of Rabbit Retinal Ganglion Cells**  
 Verginz, Paul\* (*Massachusetts General Hospital / Harvard Medical School*); Im, Maesoon (*Henry Ford Health System*); Hadjinicolaou, Alex E. (*Australian College of Optometry*); Fried, Shelley (*Massachusetts General Hospital / Harvard Medical School*)
- 17:15-19:00 ThPoS-20.3  
**Evaluation of Time-Domain Features of Sensory ENG Signals**  
 Silveira, Carolina\* (*Newcastle Univ.*); Brunton, Emma Kate (*Newcastle Univ.*); Khushaba, Rami N. (*Univ. of Technology, Sydney (UTS)*); Nazarpour, Kianoush (*Newcastle Univ.*)
- 17:15-19:00 ThPoS-20.4  
**An ERP Study on the Combined-Stimulation Advantage in Vocoder Simulations**  
 Xu, Danying (*Southern Univ. of Science and Technology*); Wang, Lei (*South Univ. of Science and Technology of China*); Chen, Fei\* (*Southern Univ. of Science and Technology*)
- 17:15-19:00 ThPoS-20.5  
**Congruent Visual Stimulation Facilitates Auditory Frequency Change Detection: An ERP Study**  
 Wang, Lei\* (*South University of Science and Technology of China*); Tsao, Yu (*Academia Sinica*); Chen, Fei (*Southern University of Science and Technology*)
- 17:15-19:00 ThPoS-20.6  
**Neural Representation of Harmonic Single Sideband Encoder in Inferior Colliculus of Guinea Pigs**  
 Wang, Xing\* (*Chongqing University*); Xiong, Wei (*Chongqing University*); Jiang, Bin (*Chongqing University*); Hou, Wensheng (*Bioengineering Inst of Chongqing University*); Peng, Fei (*Chongqing University*); Hu, ning (*Chongqing University*)
- 17:15-19:00 ThPoS-20.7  
**Using Muscle Synergy to Evaluate the Neck Muscular Activities during Normal Swallowing**  
 Zhu, Mingxing (*ShenZhen Institutes of Advanced Technology Chinese Academy of Sciences*); Samuel, Oluwarotimi Williams (*Shenzhen Institutes of Advanced Technology*); Yang, Zijian (*Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences*); Lin, Wan-Hua (*Shenzhen Institutes of Advanced Technology*); Huang, Zhen (*Panyu Central Hospital, China*); Fang, Peng (*Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences*); Tan, Jingqian (*The Third Affiliated Hospital, Sun Yat-Sen Univ.*); Li, Peng (*The Third Affiliated Hospital of Sun Yat-Sen Univ.*); Tong, Michael C. F. (*Chinese Univ. of Hong Kong*); Leung, Ka Ying Karman (*Dept. of Otorhinolaryngology, Head and Neck Surgery (ENT) Chinese Univ. of Hong Kong*); Chen, Shixiong\* (*Shenzhen Institutes of Advanced Technology*); Li, Guanglin (*Shenzhen Institutes of Advanced Technology*)
- 17:15-19:00 ThPoS-20.8  
**Comparison of Responses of Visual Cortical Neurons in the Mouse to Intraocular and Extraocular Electric Stimulation of the Retina**  
 Ryu, Sang Baek (*Massachusetts General Hospital and Harvard Medical School*); Fried, Shelley\* (*Massachusetts General Hospital / Harvard Medical School*)

- 17:15-19:00 ThPoS-20.9  
**Computational Simulation of Array-Based Electroporation in the Cochlea**  
 Al Abed, Amr (*Univ. of New South Wales*); Foster, Evelyn (*The Univ. of New South Wales*); Pinyon, Jeremy (*Univ. of New South Wales*); Li, Chung Hon (*Univ. of New South Wales*); Cowin, Gary (*Univ. of Queensland*); Housley, Gary D. (*Univ. of New South Wales*); Lovell, Nigel H.\* (*Univ. of New South Wales*)

ThPoS-21: 17:15-19:00 Exhibit Hall 2  
**Neurorehabilitation – Poster (Theme 6) (Poster Session)**

- 17:15-19:00 ThPoS-21.1  
**Feasibility of using the RAPAE Smart Board for Upper Limb Therapy in Stroke Survivors: A Pilot Controlled Trial**  
 Joon Woo, Park (*Daegu Univ.*); Jung, Hee-Tae (*Univ. of Massachusetts Amherst*); Daneault, Jean-Francois (*Harvard Medical School*); Park, Sung Ji (*Heeyeon Hospital*); Ryu, Taekyeong (*Heeyeon Hospital*); Kim, Yangsoo (*Heeyeon Hospital*); Lee, Sunghoon Ivan\* (*Univ. of Massachusetts Amherst*)
- 17:15-19:00 ThPoS-21.2  
**Effect of Arm Deseighting using End-Effector based Robotic Devices on Muscle Activity**  
 Fong, Justin\* (*Univ. of Melbourne*); Crocher, Vincent (*Univ. of Melbourne*); Haddara, Raneem (*Univ. of Melbourne*); Ackland, David (*Univ. of Melbourne*); Galea, Mary P. (*Dept. of Medicine (Royal Melbourne Hospital)*); Tan, Ying (*Univ. of Melbourne*); Oetomo, Denny (*Univ. of Melbourne*)
- 17:15-19:00 ThPoS-21.3  
**Effect of Pelvic Movement on Healthy Subjects during Gait Training using a Gait Rehabilitation System**  
 Son, Choonghyun (*Korea Institute of Science and Technology*); Moon, Hyunsik (*Korea Institute of Science and Technology*); Kim, Daeun (*Yonsei University*); Chun, Min Ho (*Asan Medical Center, University of Ulsan*); Kim, Seung-Jong (*Korea Institute of Science and Technology*); Choi, Junho\* (*Korea Institute of Science and Technology*)
- 17:15-19:00 ThPoS-21.4  
**The Effect of Myoelectric Computer Interface Training on Arm Kinematics and Function after Stroke**  
 Tomic, Goran (*Northwestern University*); Mugler, Emily (*Northwestern University*); Singh, Aparna (*Vanderbilt University*); Gaide, Jonathan (*Purdue University*); Hameed, Saad (*Dow University of Health Sciences*); Alqadi, Murad (*University of Illinois at Chicago*); Robinson, Elizabeth (*Shirley Ryan AbilityLab*); Slutzky, Marc\* (*Northwestern University*)

- 17:15-19:00 ThPoS-21.5  
**Speaking Ability While using an Inductive Tongue-Computer Interface for Individuals with Tetraplegia: Talking and Driving a Powered Wheelchair – A Case Study**  
 Andreasen Struijk, Lotte N. S. (*Aalborg Univ.*); Bentsen, Bo (*Center for Sensory Motor Interaction, Aalborg Univ.*); Gaihede, Michael (*Aalborg Hospital, Dept. of Otorhinolaryngology and Head and Neck Surgery*); Lontis, Eugen Romulus\* (*Aalborg Univ.*)
- 17:15-19:00 ThPoS-21.6  
**Effects of Lower Body Positive Pressure Treadmill Training on Dynamic Balance of Children with Cerebral Palsy**  
 Dadashi, Farnoosh (*Tehran University of Medical Sciences*); Kharazi, Mohamad Reza (*Dept. of Training and Movement Sciences, Humboldt-Universität zu Berlin, Berlin, Germany*); Lotfian, Mahboube (*Tehran University of Medical Sciences*); Shahrokhi, Amin (*Noorafshar Hospital*); Mirbagheri, Alireza (*Tehran University of Medical Sciences (TUMS)*); Mirbagheri, Mehdi\* (*Northwestern University/RIC*)

- 17:15-19:00 ThPoS-21.7  
**The Effects of Low Frequency Repetitive Transcranial Magnetic Stimulation on White Matter Structural Connectivity in Children with Cerebral Palsy**  
 Marzbani, Hengameh (*Tehran Univ. of Medical Sciences*); Shahrokhi, Amin (*Noorafshar Hospital*); Irani, Ashkan (*Dept. of Occupational Therapy, Faculty of Rehabilitation, Shahid Beheshti Univ. of Medical Sciences Health Services*); Mehdinezhad, Mina (*Mina Mehdinezhad is Occupational Therapist, Noorafshar Hospital*); Kohanpour, Mohsen (*Dept. of Neuroimaging and Analysis Group (NIAG), Tehran Univ. of Medical Sciences, Imam Khomeini Hospital*); Mirbagheri, Mehdi\* (*Northwestern Univ./RIC*)
- 17:15-19:00 ThPoS-21.8  
**Assessment of Neuroplasticity of Corticospinal Tract Induced by Antigravity Treadmill (AlterG) in Cerebral Palsy Children**  
 Azizi, Shahla (*Dept. of Medical Physics and BioMedical Engineering, Tehran University of Medical Sciences*); Moradi Birgani, Parmida (*Tehran University of Medical Sciences*); Marzbani, Hengameh (*Tehran University of Medical Sciences*); Irani, Ashkan (*Dept. of Occupational Therapy, Faculty of Rehabilitation, Shahid Beheshti University of Medical Sciences Health Services*); Kohanpour, Mohsen (*Dept. of Neuroimaging and Analysis Group (NIAG), Tehran University of Medical Sciences, Imam Khomeini Hospital*); Mirbagheri, Mehdi\* (*Northwestern University/RIC*)
- 17:15-19:00 ThPoS-21.9  
**The Impact of AlterG Training on Balance and Structure of Vestibulospinal Tract in Cerebral Palsy Children**  
 Azizi, Shahla (*Dept. of Medical Physics and BioMedical Engineering, Tehran Univ. of Medical Sciences*); Rasooli, Amirhossein (*Tehran Univ. of Medical Sciences*); Soleimani, Maryam (*Dept. of Medical Basic Sciences, Univ. of Social Welfare and Rehabilitation Sciences*); Irani, Ashkan (*Dept. of Occupational Therapy, Faculty of Rehabilitation, Shahid Beheshti Univ. of Medical Sciences Health Services*); Shahrokhi, Amin (*Noorafshar Hospital*); Mirbagheri, Mehdi\* (*Northwestern Univ./RIC*)
- 17:15-19:00 ThPoS-21.10  
**Relative Efficacy of Sensor Modalities for Estimating Post-Stroke Motor Impairment**  
 Nelson, Zachariah (*University of Tennessee, Knoxville*); Wade, Eric\* (*University of Tennessee*)
- 17:15-19:00 ThPoS-21.11  
**Energetics during Robot-Assisted Training Predicts Recovery in Stroke**  
 Wright, Zachary\* (*University of Illinois at Chicago, Shirley Ryan AbilityLab*); Patton, James (*University Illinois at Chicago (UIC) & The Shirley Ryan AbilityLab (formerly RIC)*); Huang, Felix (*Shirley Ryan AbilityLab*)
- 17:15-19:00 ThPoS-21.12  
**Feature Learning in Assistive Rehabilitation Robotic Systems**  
 Lu, Lei\* (*Harbin Institute of Tech.*); Tan, Ying (*Univ. of Melbourne*); Oetomo, Denny (*Univ. of Melbourne*); Mareels, Iven (*Melbourne Univ., Australia*); An, Shi (*Harbin Institute of Tech.*)
- 17:15-19:00 ThPoS-21.13  
**Real-Time Electromyography-Driven Functional Electrical Stimulation Cycling System for Chronic Stroke Rehabilitation**  
 Fang, Yuqi\* (*Chinese Univ. of Hong Kong*); Chen, Sai (*Chinese Univ. of Hong Kong*); Wang, Xiaojun (*Chinese Univ. of Hong Kong*); Leung, Wing Cheong (*Chinese Univ. of Hong Kong*); Wang, Xin (*Chinese Univ. of Hong Kong*); Tong, Kai Yu, Raymond (*Chinese Univ. of Hong Kong*)
- 17:15-19:00 ThPoS-21.14  
**Directly Measuring the Rate of Slacking as Stroke Survivors Produced Isometric Forces during a Tracking Task**  
 Smith, Brendan W.\* (*Loyola Marymount University*); Rowe, Justin (*University of California at Irvine*); Reinkensmeyer, David J. (*University of California*)
- 17:15-19:00 ThPoS-21.15  
**The Impact of Repetitive Transcranial Magnetic Stimulation on Affected and Unaffected Sides of a Child with Hemiplegic Cerebral Palsy**  
 Parvin, Shokoofeh (*Tehran Univ. of Medical Sciences*); Mehdinezhad, Mina (*Mina Mehdinezhad is Occupational Therapist, Noorafshar Hospital*); Taghiloo, Aidin (*Day Hospital*); Nourian, Ruhollah (*Sports Medicine Research Center, Tehran Univ. of Medical Sciences; Dept. of Rehabilitation and Sports Medicine, Nooraf*); Mirbagheri, Mehdi\* (*Northwestern Univ./RIC*)
- ThPoS-22: 17:15-19:00 Exhibit Hall 2  
**Thursday 1 Page Research Poster Paper (I) (Poster Session)**
- 17:15-19:00 ThPoS-22.1  
**Preclinical Efficacy Evaluation of a Non-Invasive Fat Reduction Medical Device at DGMIF-LAC**  
 Ryu, Rae-Hyung (*Daegu-Gyeongbuk Medical Innovation Foundation (DGMIF)*); An, Sang-Hyun\* (*Daegu-Gyeongbuk Medical Innovation Foundation (DGMIF)*); Kim, Jun-Sik (*Lab Animal Center (LAC), Daegu-Gyeongbuk Medical Innovation Foundation (DGMIF)*); Kim, Jong Chul (*Daegu-Gyeongbuk Medical Innovation Foundation*)
- 17:15-19:00 ThPoS-22.2  
**Electron Microscopy Imaging and Analysis of 3D Tumor Model**  
 Madhavan, Mathangi (*Univ. of Connecticut, Storrs*); Almarshad, Hassan\* (*Aljofir Univ.*); Hoshino, K. (*Univ. of Connecticut*)
- 17:15-19:00 ThPoS-22.3  
**Long-Term Stable, Bidirectional, Osseo-Neuromuscular Interfaces for Upper and Lower Limb Amputations**  
 Ortiz-Catalan, Max\* (*Chalmers University of Technology*); Millenaar, Jason (*Integrum AB*); Thesleff, Alexander (*Chalmers University of Technology*); Håkansson, Bo (*Chalmers University of Technology*); Brånemark, Rickard (*Göteborg University*)
- 17:15-19:00 ThPoS-22.4  
**ISACHI: Integrated Segmentation and Alignment Correction of Heart Images**  
 Villard, Benjamin\* (*University of Oxford*); Zacur, Ernesto (*Oxford University*); Grau, Vicente (*University of Oxford*)
- 17:15-19:00 ThPoS-22.5  
**Optimization of 3D Knee Joint Angle Determination**  
 Roland, Theresa\* (*Johannes Kepler University Linz*); Fritz, Thomas (*Johannes Kepler University Linz*); Baumgartner, Werner (*Johannes Kepler University Linz*)
- 17:15-19:00 ThPoS-22.6  
**Does the Limb Position Influence the Motion Illusion Evoked by Tendon Vibration?**  
 Ohshima, Hiroyuki\* (*Tokyo Metropolitan Industrial Technology Research Institute*); Shimada, Shigenobu (*Tokyo Metropolitan Industrial Technology Research Institute*)
- 17:15-19:00 ThPoS-22.7  
**Simple Generation Method of Urethane Resin Fiber Model using 3D Printer and Its Application to Medical Model**  
 Kamiya, Naoki\* (*Aichi Prefectural University*); Yamada, Saki (*Nagoya Kougakuin College of Technology*)
- 17:15-19:00 ThPoS-22.8  
**The Effect of Chronic Ankle Instability on Knee Joint Loadings using a Musculoskeletal Model**  
 Li, Yumeng\* (*California State University*)
- 17:15-19:00 ThPoS-22.9  
**Localization of the Epileptogenic Zone using Scalp EEG during REM Sleep**  
 Duke, Tyler (*University of Manitoba*); Winkler, Jeff\* (*University of Manitoba*); Moussavi, Zahra (*University of Manitoba*); Ng, Marcus (*University of Manitoba*)

- 17:15-19:00 ThPoS-22.10  
**Cytotoxicity and Cellular Uptake Study of Polyethylene Glycol Coated Gold Nanoparticles**  
Zamora-Justo, José Alberto\* (*UPIBI, Instituto Politécnico Nacional*); Abrica-González, Paulina (*UPIBI-IPN*); Vázquez-Martínez, Guillermo Roca (*UPIBI-IPN*); Chavez-Sandoval, Blanca Estela (*Universidad Autónoma Metropolitana Unidad Azcapotzalco*); Ibañez-Hernández, Miguel Ángel Antonio (*Instituto Politécnico Nacional - ENCB*); Balderas-López, José Abraham (*UPIBI-IPN*); Muñoz-Diosdado, Alejandro (*UPIBI, Instituto Politécnico Nacional, Mexico*)
- 17:15-19:00 ThPoS-22.11  
**Hands-Free Interface for Laparoscope Robot based on Image Recognition of Surgical Instrument**  
Nishimura, Fumiaki\* (*Osaka Institute of Technology*); Kawai, Toshikazu (*Osaka Institute of Technology*); Nishikawa, Atsushi (*Shinshu Univ.*); Iwamoto, Noriyasu (*Shinshu Univ.*); Nishizawa, Yuji (*Dept. of Gastroenterological Surgery, Faculty of Medicine, Kagawa Univ.*); Nakamura, Tatsuo (*Kyoto Univ.*)
- 17:15-19:00 ThPoS-22.12  
**Thyroid Texture Classification in Ultrasound Images using Bootstrap Aggregating**  
Poudel, Prabal\* (*Otto-von-Guericke-Universität Magdeburg*); Illanes, Alfredo (*Otto-von-Guericke University of Magdeburg*); Friebe, Michael (*Otto-von-Guericke-University*)
- 17:15-19:00 ThPoS-22.13  
**Impact of Pulmonary Alveolar Epithelial Cells of Human Lung on Microfluidic Chips**  
Chen, Guan-Yu\* (*National Chiao Tung University*)
- 17:15-19:00 ThPoS-22.14  
**New Algorithms for CS – MRI: WTWTS, DWTS, WDWTS**  
Settisara Janney, Srivarna\* (*Kennesaw State University*); Chakravarty, Sumit (*Kennesaw state University*)
- 17:15-19:00 ThPoS-22.15  
**Analysis Method for Real-Time Evaluation of Muscle Function during Dynamic Exercise**  
Fukuhara, Shinichi\* (*Kawasaki Univ. of Medical Welfare*); Watanabe, Shogo (*Okayama Univ.*); Oka, Hisao (*Okayama Univ.*)
- 17:15-19:00 ThPoS-22.16  
**Size and Deformability based Separation of Viable Circulating Tumor Cells using a Microfluidic Device**  
Yoon, Yousang (*Hanyang University*); Lee, Jusin (*Hanyang University*); Yoo, Ki-Chun (*Hanyang University*); Sul, Onejae (*Hanyang University*); Lee, Su-Jae (*Hanyang University*); Choi, Ho Soon (*Hanyang University Medical Center*); Lee, Seung-Beck\* (*Hanyang University*)
- 17:15-19:00 ThPoS-22.17  
**Simultaneous Measurements of MMG/EMG to Provide Muscle Strength and Performance during Isotonic Contraction**  
Fukuhara, Shinichi\* (*Kawasaki Univ. of Medical Welfare*); Watanabe, Shogo (*Okayama Univ.*); Oka, Hisao (*Okayama Univ.*)
- 17:15-19:00 ThPoS-22.18  
**Estimation of Cycling-Wheelchair Pedaling using MMG/EMG Hybrid Transducer**  
Fukuhara, Shinichi (*Kawasaki Univ. of Medical Welfare*); Watanabe, Shogo (*Okayama Univ.*); Oka, Hisao\* (*Okayama Univ.*)
- 17:15-19:00 ThPoS-22.19  
**Characterization of Mice Brain Activity following Sleep Deprivation by Means of Permutation Entropy**  
Tosun, Pinar Deniz\* (*University of Surrey*); Winsky-Sommerer, Raphaelle (*Surrey Sleep Research Centre, University of Surrey*); Abasolo, Daniel (*University of Surrey*)
- 17:15-19:00 ThPoS-22.20  
**In-Vivo Condition on Transfer Function and Power Dissipation with a Dorsal Root Ganglion Stimulation System for Safety Evaluation during 1.5T MRI Scans**  
Min, Xiaoyi\* (*St. Jude Medical, Inc.*); Wan, Yuqing (*Yale University*); Sison, Shiloh (*St. Jude Medical, Inc.*)
- 17:15-19:00 ThPoS-22.21  
**Three-Dimensional Visualization of the Cochlear Micro-Structures without in Vitro Processing using In-Line Phase Contrast Micro-CT**  
Yin, Hongxia (*Beijing Friendship Hospital, Capital Medical University*); Liu, Yawen (*Beijing Friendship Hospital, Capital Medical University*); Zhang, Shaochuan (*Dept. of Radiology, Beijing Friendship Hospital, Capital Medical University*); Zhong, Zhaohui (*Beijing Friendship Hospital, Capital Medical University*); Yang, Zhenghan (*Beijing Friendship Hospital, Capital Medical University*); Wang, Zhenchang\* (*Beijing Friendship Hospital, Capital Medical University*)
- 17:15-19:00 ThPoS-22.22  
**Magnetic Resonance Wireless Power Transmission System for an Implantable Sensor in Common Marmoset**  
Fujii, Mayuko\* (*The Institute of Scientific and Industrial Research, Osaka Univ.*); Yoshimoto, Shusuke (*Osaka Univ.*); Nezu, Toshikazu (*Osaka Univ.*); Ohta, Hiroshi (*The Institute of Scientific and Industrial Research, Osaka Univ.*); Hamanaka, Hiroki (*Global Center for Medical Engineering and Informatics, Osaka Univ.*); Araki, Teppei (*Osaka Univ.*); Noda, Yuki (*Osaka Univ.*); Uemura, Takafumi (*Osaka Univ.*); Hirata, Masayuki (*Osaka Univ. Medical School*); Sekitani, Tsuyoshi (*Osaka Univ.*)
- 17:15-19:00 ThPoS-22.23  
**Computational Analysis of the Mechanical Properties of a Stent-Electrode Array**  
Anderson, Emily Elizabeth\* (*University of New South Wales*); Dokos, Socrates (*University of New South Wales*); Lovell, Nigel H. (*University of New South Wales*)
- 17:15-19:00 ThPoS-22.24  
**How Negative Emotion Processing Influences the Large-Scale Intrinsic Connectivity Network Architecture of the Human Brain**  
Jarrahi, Behnaz\* (*Stanford University School of Medicine*)
- 17:15-19:00 ThPoS-22.25  
**Effective Frequency Bands and Features for Epileptic Focus Detection from Interictal Electroencephalogram**  
Ito, Shintaro (*Tokyo Univ. of Agriculture and Technology*); Fukumori, Kosuke (*Tokyo Univ. of Agriculture and Technology*); Tanaka, Toshihisa\* (*Tokyo Univ. of Agriculture and Technology*); Sugano, Hidenori (*Juntendo Univ. School of Medicine*)
- 17:15-19:00 ThPoS-22.26  
**Establishment of Rabbit Glaucoma Model using Micro-Beads in Development of a Selective Laser Trabeculoplasty**  
Kim, Jun-Sik (*Lab Animal Center (LAC), Daegu-Gyeongbuk Medical Innovation Foundation (DGMIF)*); Ryu, Rae-Hyung (*Daegu-Gyeongbuk Medical Innovation Foundation (DGMIF)*); Kim, Jong Chul (*Daegu-Gyeongbuk Medical Innovation Foundation*); Bae, SeungKuk (*DGMIF*); An, Sang-Hyun\* (*Daegu-Gyeongbuk Medical Innovation Foundation (DGMIF)*)
- 17:15-19:00 ThPoS-22.27  
**Microfluidic Bacterial Lysis using Electric-Field Induced Vortices**  
Kim, Minseok\* (*Korea Institute of Machinery & Materials*)
- 17:15-19:00 ThPoS-22.28  
**Introducing BiSDL, a New Biological Systems Description Language**  
Benso, Alfredo\* (*Politecnico di Torino*); Di Carlo, Stefano (*Politecnico di Torino*); Politano, Gianfranco (*Politecnico di Torino*); Bardini, Roberta (*Politecnico di Torino*); Muggianu, Flavia (*Politecnico di Torino*)

- 17:15-19:00 ThPoS-22.29  
**A Computational Comparison of the Lateral Lumbar Interbody Fusion with Unilateral and Bilateral Fixation**  
 Zhang, Teng (*St George Hospital, Univ. of New South Wales*); Bai, Siwei\* (*Technical Univ. of Munich*); Fang, Chris (*Dept. of Orthopaedics and Traumatology, Queen Mary Hospital, Univ. of Hong Kong*); Wong, Tak-Man (*Dept. of Orthopaedics and Traumatology, Queen Mary Hospital, Univ. of Hong Kong*); Kulper, Sloan (*Dept. of Orthopaedics and Traumatology, Queen Mary Hospital, Univ. of Hong Kong*); Cheung, Jason Pui Yin (*Univ. of Hong Kong*); Lu, William (*Dept. of Orthopaedics and Traumatology, Queen Mary Hospital, Univ. of Hong Kong*); Diwan, Ashish (*Spine Service, St George Hospital*)
- 17:15-19:00 ThPoS-22.30  
**Design and Development of an Electro Stimulator System with Programmable Routines based on a Human Skin Depth Effect Model**  
 Amador Tejada, Alejandro Ian\* (*National Autonomous University of Mexico*); Robles Martínez, Karina (*National Autonomous University of Mexico*)
- 17:15-19:00 ThPoS-22.31  
**Extraordinarily Transmission based Super-Compact Acoustic Resonators Accounting for Mechanism of Human Auditory System**  
 Horii, Yasushi\* (*Kansai Univ.*); Hong, Wenjia (*Kansai Univ.*); Tamaki, Airi (*Kansai Univ.*); Kitamura, Toshiaki (*Kansai Univ.*)
- 17:15-19:00 ThPoS-22.32  
**Human-Centered or Mechanical Slip Resistance Testing Method?**  
 Li, Yue\* (*Toronto Rehabilitation Institute - University Health Network*); Gauvin, Chantal (*IRSST, Montreal*); Cheng, Wayne (*Toronto Rehabilitation Institute – University Health Network*); Dutta, Tilak (*Toronto Rehab, University Health Network*)
- 17:15-19:00 ThPoS-22.33  
**A Microfluidic Chip for High-Efficiency Multiple Single-Cell Capture**  
 He, Cheng-Kun (*National Chung Hsing University*); Chen, Chihchen (*National Tsing Hua University*); Hsu, Chia-Hsien\* (*National Health Research Institutes*)
- 17:15-19:00 ThPoS-22.34  
**3D Printing of PLGA Circuits for Transient Electronics**  
 Lin, Rongzan (*Tsinghua University*); Yan, Xinghui (*Tsinghua University*); Liu, Ran\* (*Tsinghua University*)
- 17:15-19:00 ThPoS-22.35  
**Classification of Major Depressive Disorder based on Multiscale Entropy Analysis of Heart Rate Dynamics**  
 Byun, Sangwon\* (*Incheon National University*); Kim, Ah-Young (*ETRI*); Jang, Eun-Hye (*ETRI*); Yu, hanyoung (*ETRI*)
- 17:15-19:00 ThPoS-22.36  
**Three Dimensional Flexible Microelectrodes for Subretinal Prosthesis**  
 Seo, Hee Won\* (*Daegu Gyeongsbuk Institute of Science and Technology (DGIST)*); Kim, Namju (*Daegu Gyeongsbuk Institute of Science of Technology*); Kim, Sohee (*Daegu Gyeongsbuk Institute of Science and Technology (DGIST)*)
- 17:15-19:00 ThPoS-22.37  
**Machine Learning-Based Brain Morphological Studies for Tinnitus**  
 Liu, Yawen (*Beijing Friendship Hospital, Capital Medical Univ.*); Lv, Han (*Beijing Friendship Hospital, Capital Medical Univ.*); Yin, Hongxia (*Beijing Friendship Hospital, Capital Medical Univ.*); Zhang, Shaochuan (*Dept. of Radiology, Beijing Friendship Hospital, Capital Medical Univ.*); Wang, Zhenchang\* (*Beijing Friendship Hospital, Capital Medical Univ.*)
- 17:15-19:00 ThPoS-22.38  
**A Microfluidic Interconnection Cable Delivering Pharmaceutical Drugs to Neural Electrodes**  
 Kang, YooNa\* (*DGIST (Daegu Gyeongbuk Institute of Science & Technology)*); Jang, JaeWon (*Daegu Gyeongbuk Institute Science & Technology*); Kim, Sohee (*Daegu Gyeongbuk Institute of Science and Technology (DGIST)*)
- 17:15-19:00 ThPoS-22.39  
**Super Estimation of Veins by Deep Convolutional Neural Networks**  
 Kashiara, Koji\* (*Tokushima University*)
- 17:15-19:00 ThPoS-22.40  
**Control of Culture Environment for Adherent Cells using Ultrasound Vibration**  
 Fujiwara, Koji (*Doshisha University*); Tani, Kentaro (*Doshisha University*); Koyama, Daisuke\* (*Doshisha University*)
- 17:15-19:00 ThPoS-22.41  
**Cell-Drug Interactions at Near Endothelial Wall Location**  
 Wang, Tong\* (*Nanjing University of Aeronautics and Astronautics*); Xing, Zhongwen (*Nanjing University*)
- 17:15-19:00 ThPoS-22.42  
**Heating Characteristics of Proposed Applicator using Rectangular Resonant Cavity for Treating Deep Tumors without Contact**  
 Ichishima, Yasuhito\* (*Meiji University, Graduate School of Science Technology*); Shindo, Yasuhiro (*Toyo University*); Iseki, Yuya (*Meiji University*); Kato, Kazuo (*Meiji University*)
- 17:15-19:00 ThPoS-22.43  
**Development of VR Simulator System for Effective Hyperthermia Treatments**  
 Tokutake, Ryo\* (*Graduate School of Science Technology, Meiji Univ.*); Shindo, Yasuhiro (*Toyo Univ.*); Kato, Kazuo (*Meiji Univ.*)
- 17:15-19:00 ThPoS-22.44  
**Tracking the Fate of Drug Nanocarrier using Photoluminescence Lifetime of Nanocrystalline Silicon**  
 Joo, Jinmyoung\* (*Asan Medical Center*)
- 17:15-19:00 ThPoS-22.45  
**Selective Cell Elimination Mediated by Ultrasonic Irradiation**  
 Inui, Takumi (*Keio Univ.*); Kurashina, Yuta (*Keio Univ.*); Imashiro, Chikahiro (*Keio Univ.*); Takemura, Kenjiro\* (*Keio Univ.*)
- 17:15-19:00 ThPoS-22.46  
**Cortical Classification of Cognitive-Motor Interactions during Walking**  
 Alam, Mohammad (*Space and Naval Warfare Systems Center Pacific*); Solon, Amelia (*DCS Corp*); Bradford, J. Cortney (*U.S. Army Research Lab*); Lukos, Jamie\* (*SPAWAR Systems Center Pacific*)
- 17:15-19:00 ThPoS-22.47  
**An Edge based PHR Platform “miParu®” using Secure SD Card**  
 Minami, Shigenobi\* (*MIRUWS Inc.*); Tanaka, Hirokazu (*Hiroshima City University*); Miyamoto, Tsutomu (*Miruws Inc.*)
- 17:15-19:00 ThPoS-22.48  
**Fast Delay-Multiply-and-Sum Beamformer for Ultrasound and Photoacoustic Imaging**  
 Jeon, Seungwan (*Pohang University of Science and Technology*); Park, Eunyeong (*Pohang University of Science and Technology (POSTECH)*); Choi, Wonseok (*Pohang University of Science and Technology (POSTECH)*); Kim, Chulhong\* (*Pohang University of Science and Technology*)
- 17:15-19:00 ThPoS-22.49  
**Homogenizing Cell Seeding Density on Cell Culture Surface by using Ekman Transport**  
 Fukuma, Yuki (*Keio Univ.*); Inui, Takumi (*Keio Univ.*); Imashiro, Chikahiro (*Keio Univ.*); Takemura, Kenjiro\* (*Keio Univ.*)

17:15-19:00	ThPoS-22.50	<b>A Study on Adhesion Strength between Parylene Interconnection Cable and Fluid Reservoir for Drug Delivery to Neural Electrodes</b> Jang, JaeWon* ( <i>Daegu Gyeongbuk Institute Science &amp; Technology</i> ); Kang, YooNa ( <i>DGIST (Daegu Gyeongbuk Institute of Science &amp; Technology)</i> ); Kim, Sohee ( <i>Daegu Gyeongbuk Institute of Science and Technology (DGIST)</i> )	17:15-19:00	ThPoS-23.9	<b>Modeling and Prediction of Sinusoidal Smooth Pursuit using Artificial Neural Networks</b> Costalago Meruelo, Alicia* ( <i>Ludwig-Maximilians-Univ. München</i> ); Fleuriot, Jérôme ( <i>Washington National Primate Research Center, Univ. of Washington</i> ); Bakst, Leah ( <i>Boston Univ.</i> ); Mustari, Michael J. ( <i>Washington National Primate Research Center</i> ); Glasauer, Stefan ( <i>Ludwig-Maximilians-Univ. München</i> )
ThPoS-23: 17:15-19:00		Exhibit Hall 2			
Thursday 1 Page Research Poster Paper (II) (Poster Session)					
17:15-19:00	ThPoS-23.1	<b>Multiview-Based Protruding Skin Disease Mobile Diagnostic System</b> Hong, Gee Yun ( <i>The Medical IT Engineering Dept., University of Soonchunhyang</i> ); Lee, Jiwon ( <i>The Medical IT Engineering Dept., University of Soonchunhyang</i> ); Moon, Cho-I ( <i>University of Soonchunhyang</i> ); Lee, Onseok* ( <i>Soonchunhyang University</i> )	17:15-19:00	ThPoS-23.10	<b>Hyperhidrosis Diagnosis Quantification System using Thermal Imagery</b> Lee, Jiwon ( <i>The Medical IT Engineering Dept., University of Soonchunhyang</i> ); Moon, Cho-I ( <i>University of Soonchunhyang</i> ); Hong, Gee Yun ( <i>The Medical IT Engineering Dept., University of Soonchunhyang</i> ); Kim, Eun Young ( <i>Dept. of Occupational Therapy, Soonchunhyang University</i> ); Lee, Onseok* ( <i>Soonchunhyang University</i> )
17:15-19:00	ThPoS-23.2	<b>Hand Motion Discrimination by Forearm Deformation Measurement using Distance Sensors</b> Miyata, Chika* ( <i>Ritsumeikan University</i> ); Makikawa, Masaaki ( <i>Ritsumeikan University</i> ); Okada, Shima ( <i>Ritsumeikan University</i> )	17:15-19:00	ThPoS-23.11	<b>Preliminary Study on Development of CT System Specialized in Pathology Diagnosis using Micro CT</b> Hayakawa, Tomonari ( <i>Fujita Health University</i> ); Yamada, Ayumi ( <i>Fujita Health University</i> ); Teramoto, Atsushi* ( <i>Fujita Health University</i> ); Fujita, Hiroshi ( <i>Gifu University</i> ); Saito, Kuniaki ( <i>Fujita Health University</i> ); Tsukamoto, Tetsuya ( <i>Fujita Health University</i> )
17:15-19:00	ThPoS-23.3	<b>The Possibility of Low-Cost Autofluorescence Measurement Device during Thyroidectomy</b> Kim, Yikeun ( <i>Pukyong National University</i> ); Kim, Sung Won ( <i>Kosin University College of Medicine</i> ); Lee, Kang Dae ( <i>Kosin University College of Medicine</i> ); Ahn, Yeh-Chan* ( <i>Pukyong National University</i> )	17:15-19:00	ThPoS-23.12	<b>Development of Application Software for Visually Impaired Persons to Support Cardiopulmonary Resuscitation</b> Tani, Kentaro* ( <i>Niigata University of Health and Welfare</i> ); Kamikura, Takahisa ( <i>Niigata University of Health and Welfare</i> ); Maeda, Yoshinobu ( <i>Niigata University</i> )
17:15-19:00	ThPoS-23.4	<b>Integrated Subretinal System Design with a Hexagonal Electrode Array for High Visual Acuity</b> Kang, Ho-Seong ( <i>Korea Univ.</i> ); Abbasi, Wajahat Habib ( <i>Dept. of Health Sciences and Technology, GAIHST, Gachon Univ.</i> ); Kim, Jungsuk ( <i>Gachon Univ.</i> ); Kim, Seong-Woo* ( <i>Korea Univ.</i> )	17:15-19:00	ThPoS-23.13	<b>Evaluating the use of Steering a Hearing Aid in a Dynamic Multi-Talker Environment using Body Signals</b> Favre-Félix, Antoine* ( <i>Eriksholm Research Centre</i> ); Harrison, Murron ( <i>Eriksholm Research Centre</i> ); Hietkamp, Renske K. ( <i>Eriksholm Research Centre</i> ); Bhuiyan, Tanveer A. ( <i>Eriksholm Research Centre</i> ); Lunner, Thomas ( <i>Eriksholm Research Centre - Part of Oticon</i> )
17:15-19:00	ThPoS-23.5	<b>A Novel Tuning Method for the Implantable Resonant Coupling Wireless Power Transmission</b> Ozawa, Yuta* ( <i>Tokyo City Univ.</i> ); Minemura, Kohei ( <i>Tokyo City Univ.</i> ); Shimatani, Yuichi ( <i>Tokyo City Univ.</i> ); Kyoso, Masaki ( <i>Tokyo City Univ.</i> ); Kiryu, Shogo ( <i>Tokyo City Univ.</i> )	17:15-19:00	ThPoS-23.14	<b>Vibration-Induced Whirling Flow based Erythrocyte Disaggregation</b> Kim, Sangho* ( <i>National University of Singapore</i> )
17:15-19:00	ThPoS-23.6	<b>Long-Term Changes in Effective Inductance of Thin Coils Implanted in Rats for the Resonance Coupling Wireless Power Transmission</b> Minemura, Kohei* ( <i>Tokyo City University</i> ); Ozawa, Yuta ( <i>Tokyo City University</i> ); Sasaki, Kosuke ( <i>Tokyo City University</i> ); Shimatani, Yuichi ( <i>Tokyo City University</i> ); Kyoso, Masaki ( <i>Tokyo City University</i> ); Kiryu, Shogo ( <i>Tokyo City University</i> )	17:15-19:00	ThPoS-23.15	<b>A Wearable Liquid Encapsulation Device for Real-Time Cardiovascular Monitoring</b> Fan, Xiangyu* ( <i>Chinese University of Hong Kong</i> ); Ding, Xiao-Rong ( <i>University of Oxford</i> ); Liu, Jing ( <i>Chinese University of Hong Kong</i> ); Zhao, Ni ( <i>Chinese University of Hong Kong</i> )
17:15-19:00	ThPoS-23.7	<b>An Optoelectronic Epiretinal Prosthesis</b> Waschkowski, Florian* ( <i>RWTH Aachen</i> ); Raffelberg, Pascal ( <i>University Duisburg Essen</i> ); Viga, Reinhard ( <i>University of Duisburg-Essen</i> ); Kokozinski, Rainer ( <i>Fraunhofer Institute for Microelectronic Circuits and Systems</i> ); Walter, Peter ( <i>University Clinics RWTH Aachen University</i> ); Mokwa, Wilfried ( <i>RWTH Aachen University</i> )	17:15-19:00	ThPoS-23.16	<b>A Medical Training System using AR: Evaluation of User Interfaces</b> Umeda, Ryosuke ( <i>Univ. of the Ryukyus</i> ); Gushi, Shotaro ( <i>Univ. of the Ryukyus</i> ); Higa, Hiroki* ( <i>Univ. of the Ryukyus</i> )
17:15-19:00	ThPoS-23.8	<b>A Proposal of the Image Acquisition Sequence of MR Fingerprinting for CEST MRI</b> Kamba, Kazuho* ( <i>Kyoto University</i> ); Imai, Hirohiko ( <i>Kyoto University</i> ); Nakao, Megumi ( <i>Kyoto University</i> ); Matsuda, Tetsuya ( <i>Kyoto University</i> )	17:15-19:00	ThPoS-23.17	<b>Ocular Biometric System based on Corneal Shapes</b> Khal, Nassima* ( <i>Univ. of Montreal</i> ); Meunier, Jean ( <i>Univ. de Montreal</i> ); Brunette, Isabelle ( <i>Univ. of Montréal</i> )
			17:15-19:00	ThPoS-23.18	<b>Power-Efficient Neural Stimulator using Charge Pumps</b> Kim, Jae Kun ( <i>Dept. of Health Sciences and Technology, GAIHST, Gachon Univ.</i> ); Abdullah Zawawi, Ruhaifi ( <i>Dept. of Health Sciences and Technology, GAIHST, Gachon Univ.</i> ); Kim, Seong-Woo ( <i>Korea Univ.</i> ); Kim, Jungsuk* ( <i>Gachon Univ.</i> )



- 17:15-19:00 ThPoS-23.19  
**Jerk-Related Perceptions of Kinematic Naturalness in Simulated Robot Grasping**  
 Hirose, James\* (*Shinshu University*); Nishikawa, Atsushi (*Shinshu University*); Pataky, Todd Colin (*Kyoto University*)
- 17:15-19:00 ThPoS-23.20  
**Spectral Characteristics of Angular Motion Captured by Microsoft Kinect® during Movements of an Exergame**  
 Moreira, Gabrielly (*Pontifícia Universidade Católica do Paraná*); Castro, Marcos (*PUCPR*); Nohama, Percy (*Pontifícia Universidade Católica do Paraná*); Manfra, Elisangela F.\* (*Pontifícia Universidade Católica Do Paraná*)
- 17:15-19:00 ThPoS-23.21  
**An Improved Exposure Therapy for Phobias using Virtual Reality and Motion Recognition Camera**  
 Kritikos, Jacob\* (*BioMedical Engineering Lab, School of Electrical and Computer Engineering, National Technical Univ. of Athens*); Koutsouris, Dimitrios (*BioMedical Engineering Lab, School of Electrical and Computer Engineering, National Technical Univ. of Athens*); Vellidou, Eleftheria (*National Technical Univ. of Athens*); Anastasiou, Manolis (*National Technical Univ. of Athens*); Pouloupoulou, Stavroula (*Univ. of Piraeus*)
- 17:15-19:00 ThPoS-23.22  
**Deep 3D Anatomy-Specific Neural Network Convolution for Radiation Dose Reduction in Chest CT at a Micro-Dose Level**  
 Zarshenas, Amin\* (*Illinois Institute of Technology*); Zhao, Yuji (*Illinois Institute of Technology*); Liu, Junchi (*Illinois Institute of Technology*); Higaki, Toru (*Hiroshima University*); Fukumoto, Wataru (*Hiroshima University*); Awai, Kazuo (*Illinois Institute of Technology*); Suzuki, Kenji (*Illinois Institute of Technology*)
- 17:15-19:00 ThPoS-23.23  
**Sequential Neural Network Convolution (NNC) Deep Learning in Radiation Dose Reduction in Digital Breast Tomosynthesis (DBT)**  
 Liu, Junchi\* (*Illinois Institute of Technology*); Zarshenas, Amin (*Illinois Institute of Technology*); Qadir, Syed Ammar (*Illinois Institute of Technology*); Yang, Limin (*University of Iowa Hospitals and Clinics*); Fajardo, Laurie (*University of Utah*); Suzuki, Kenji (*Illinois Institute of Technology*)
- 17:15-19:00 ThPoS-23.24  
**A Branch-and-Bound Method of Grid Search to Estimate Parameters of Biological Models**  
 Abe, Takeshi\* (*Yamaguchi University*); Asai, Yoshiyuki (*Yamaguchi University Graduate School of Medicine*)
- 17:15-19:00 ThPoS-23.25  
**Medical Image Dataset for Machine Learning based on OMOP CDM**  
 Noh, SiHyeong (*Wonkwang University*); Kim, SeungJin (*Wonkwang University*); Kim, Tae-Hoon (*Wonkwang University*); Jun, Hong Young (*Wonkwang University Hospital*); Jeong, Chang Won (*Wonkwang University*); Yoon, Kwon-Ha\* (*Wonkwang University School of Medicine*)
- 17:15-19:00 ThPoS-23.26  
**Forearm sEMG Sites across Individual for Gesture Recognition**  
 Wang, Yunlong (*Southeast Univ.*); Bao, Xueliang (*Southeast Univ., State Key Lab of Bioelectronics*); Zhou, Yuxuan (*School of Basic Medical Science, Nanjing Medical Univ.*); Lü, Xiaoying\* (*Southeast Univ.*); Wang, Zhigong (*Southeast Univ.*)
- 17:15-19:00 ThPoS-23.27  
**Deep-Learning based Active Neuron Segmentation in Two-Photon Calcium Imaging**  
 Soltanian-Zadeh, Somayyeh\* (*Duke University*); Sahingur, Kaan (*Duke University*); Blau, Sarah (*Duke University*); Gong, Yiyang (*Duke University*); Farsiu, Sina (*Duke University*)
- 17:15-19:00 ThPoS-23.28  
**Guidewire Tip Segmentation with Atrous Convolution**  
 Wu, Yu-Dong (*Institute of Automation, Chinese Academy of Sciences*); Xie, Xiao-Liang (*Chinese Academy of Sciences*); Bian, Gui-Bin (*Institute of Automation, Chinese Academy of Sciences*); Hou, Zeng-Guang\* (*Institute of Automation, Chinese Academy of Sciences*); Liu, Shiqi (*State Key Lab of Management and Control for Complex Systems, Institute of Automation, Chinese Academy of Science*)
- 17:15-19:00 ThPoS-23.29  
**Peak-Forming-Enhanced EM Imaging Method for Implantable Device Localization**  
 Kobayashi, Hisato\* (*Nagoya Institute of Technology*); Anzai, Daisuke (*Nagoya Institute of Technology*); Wang, Jianqing (*Nagoya Institute of Technology*)
- 17:15-19:00 ThPoS-23.30  
**Stabilization of Center of Mass by Kinematic Synergies during the Post-Stroke Hemiparetic Gait**  
 Devetak, Gisele Francini (*Pontifícia Universidade Católica do Paraná - PUCPR*); Bohrer, Roberta (*Parana Federal University and Universidade Positivo*); Rodacki, Andre Luiz Felix (*Universidade Federal do Parana*); Nohama, Percy (*Pontifícia Universidade Católica do Paraná*); Manfra, Elisangela F.\* (*Pontifícia Universidade Católica Do Paraná*)
- 17:15-19:00 ThPoS-23.31  
**Improvement in Chronic Stress Level Recognition by using Both Long-Term and Short-Term Measurements of Physiological Features**  
 Nakashima, Yoshiki\* (*NEC Corp.*); Tsujikawa, Masanori (*NEC Corp.*); Onishi, Yoshifumi (*NEC Corp.*)
- 17:15-19:00 ThPoS-23.32  
**Evaluation of Balance Ability of the Elderly during ADL using Convex-Hull Area**  
 Shin, I Su (*Eulji Univ.*); Kim, Wooseop (*The Seongnam Senior Experience Complex, Eulji Univ.*); Shin, Young Seok (*Eulji Univ.*); Chae, Seonah (*Eulji Univ.*); Choi, Dagyeong (*Eulji Univ.*); Kim, Ku Ho (*Eulji Univ.*); Jung, Duk Young\* (*The Seongnam Senior Experience Complex, Eulji Univ.*)
- 17:15-19:00 ThPoS-23.33  
**Knee Osteoarthritis Classification using Gait Analysis Data: A Feasibility Study**  
 Kwon, Soon Bin (*Seoul National University*); Ro, Du Hyun (*Seoul National University*); Kim, Hee Chan\* (*Seoul National University*)
- 17:15-19:00 ThPoS-23.34  
**Quantitative Assessment of Masticatory and Swallowing Function by MMG Measurement using PVDF Film**  
 Hashimoto, Takuya\* (*Tokyo University of Science*); Tsukagoshi, Keita (*Tokyo University of Science*)
- 17:15-19:00 ThPoS-23.35  
**Cell Suspension Culture using Acoustic Flow**  
 Fujii, Genichiro (*Keio University*); Kurashina, Yuta (*Keio University*); Takahara, Osamu (*Mitsubishi Electric Corp.*); Kodeki, Kazuhide (*Mitsubishi Electric Corp.*); Morikawa, Akira (*Mitsubishi Electric Corp.*); Azuma, Tetsushi (*Mitsubishi Electric Corp.*); Takemura, Kenjiro\* (*Keio University*)
- 17:15-19:00 ThPoS-23.36  
**A Study of Overhand Throwing using Simultaneous High-Speed Kinematic Videography and Surface Electromyography**  
 Doty, Steven\* (*Denison University*)
- 17:15-19:00 ThPoS-23.37  
**Velocity Dependent Light Interaction Force Improves Standing Balance**  
 Saini, Anirudh (*Missouri Univ. of Science and Technology*); Burns, Devin (*Missouri Univ. of Science & Technology*); Song, Yun Seong\* (*Missouri Univ. of Science and Technology*)

17:15-19:00	ThPoS-23.38	<b>Examination of the Relationship between Autistic Traits and Gait Characteristics While Two Persons Walk Toward Each Other using the Exhaustive Search Method</b> Shigeta, Masahiro* ( <i>Tokyo Univ. of Science</i> ); Sawatome, Akira ( <i>Tokyo Univ. of Science</i> ); Takemura, Hiroshi ( <i>Tokyo Univ. of Science</i> ); Ichikawa, Hiroko ( <i>Tokyo Univ. of Science</i> )	17:15-19:00	ThPoS-23.47	<b>Gold Nanorods Induce Oxidative Stress in Neurons and Promote Glial Proliferation</b> Kim, Soonyoung* ( <i>Ewha Womans Univ.</i> ); Cho, Yoon Kyung ( <i>Ewha Womans Univ.</i> ); Jun, Sang Beom ( <i>Ewha Womans Univ.</i> )
17:15-19:00	ThPoS-23.39	<b>Automated Tracking of Entrapped Nerves in Dynamic Sonography</b> Wu, Chueh-Hung ( <i>National Taiwan University</i> ); Hsiao, Ming-Yen ( <i>National Taiwan University</i> ); Syu, Wei-Ting ( <i>National Taiwan University</i> ); Kuo, Po-Ling* ( <i>National Taiwan University</i> )	17:15-19:00	ThPoS-23.48	<b>Depth-Dependent Burn Area Extraction for Burn Diagnosis</b> Wada, Daijiro* ( <i>Keio University</i> ); Kato, Soichiro ( <i>Kyorin University School of Medicine</i> ); Yamaguchi, Yoshihiro ( <i>Kyorin University School of Medicine</i> ); Tanaka, Toshiyuki ( <i>Keio University</i> )
17:15-19:00	ThPoS-23.40	<b>Superior Facilitation of Mirror Neuron System (MNS) by Congruent Character's Movement in Action Observation Game</b> Lim, Hyunmi ( <i>Keimyung Univ.</i> ); Ku, Jeonghun* ( <i>Keimyung Univ.</i> )	17:15-19:00	ThPoS-23.49	<b>A Development of Tactile Sensor and Tactile Feedback Device for Myoelectric Artificial Hand Users</b> Tsueda, Junya* ( <i>Tokai Univ.</i> ); Magatani, Kazushige ( <i>Tokai Univ.</i> )
17:15-19:00	ThPoS-23.41	<b>Tracking System for Image-Guided Radiation Surgery</b> Yang, Sejung* ( <i>Yonsei University</i> ); Shi, Jianing ( <i>UCLA</i> ); Oh, Byungho ( <i>Keimyung University, College of Medicine</i> ); Adler, John ( <i>Stanford University</i> )	17:15-19:00	ThPoS-23.50	<b>Comparing Amygdala Sub-Regions as a Stimulation Target for Animal Behavior Control</b> Lee, Youjin ( <i>Ewha Womans University</i> ); Lee, Jee Won ( <i>Ewha Womans University</i> ); Cho, Yoon Kyung ( <i>Ewha Womans University</i> ); Kim, Soonyoung ( <i>Ewha Womans University</i> ); Jun, Sang Beom* ( <i>Ewha Womans University</i> )
17:15-19:00	ThPoS-23.42	<b>Numerical Analysis of the Effect of Adjacent Reference Electrode Configuration in Retinal Prostheses</b> Kim, Namju* ( <i>Daegu Gyeongbuk Institute of Science of Technology</i> ); Seo, Hee Won ( <i>Daegu Gyeongbuk Institute of Science and Technology (DGIST)</i> ); Kim, Sohee ( <i>Daegu Gyeongbuk Institute of Science and Technology (DGIST)</i> )	ThPoS-24: 17:15-19:00 Exhibit Hall 2 <b>Thursday 1 Page Research Poster Paper (III) (Poster Session)</b>		
17:15-19:00	ThPoS-23.43	<b>Effect of Zinc on Astrocytic Calcium Signaling in Mice</b> Cho, Yoon Kyung ( <i>Ewha Womans Univ.</i> ); Noh, Kyungchul ( <i>Dept. of Neuroscience and Physiology, and Dental Research Institute, School of Dentistry, Seoul National Univ.</i> ); Cho, Woo-Hyun ( <i>Dept. of Neuroscience and Physiology, and Dental Research Institute, School of Dentistry, Seoul National Univ.</i> ); Lee, Sung Joong ( <i>Dept. of Neuroscience and Physiology, and Dental Research Institute, School of Dentistry, Seoul National Univ.</i> ); Jun, Sang Beom* ( <i>Ewha Womans Univ.</i> )	17:15-19:00	ThPoS-24.1	<b>Improving Clinical Outcomes of Balance after Traumatic Brain Injury using Computerized Biofeedback based Intervention</b> Ibironke, Oluwaseun ( <i>Kessler Foundation</i> ); Tanis, Daniel ( <i>Kessler Foundation</i> ); Nolan, Karen J. ( <i>Kessler Foundation</i> ); Pilkar, Rakesh* ( <i>Kessler Foundation - Rutgers NJMS</i> )
17:15-19:00	ThPoS-23.44	<b>Influence of Structures of Deep Neural Network on Classification of EEG during Motor Imagery Task</b> Gu, Feng* ( <i>Univ. of Tokyo</i> ); Kobayashi, Yuya ( <i>Univ. of Tokyo</i> ); Kotani, Kiyoshi ( <i>Univ. of Tokyo</i> ); Jimbo, Yasuhiko ( <i>Univ. of Tokyo</i> )	17:15-19:00	ThPoS-24.2	<b>Proposal of a New PTT Measurement Method using Tactile Sensors Toward Cuff-Less Blood Pressure Measurement</b> Ogishi, Yudai* ( <i>Meijo Univ.</i> ); Mukai, Toshiharu ( <i>Meijo Univ.</i> )
17:15-19:00	ThPoS-23.45	<b>Wrist Rehabilitation System using Enhanced Reality for Hemiplegic Patients' Rehabilitation</b> Phan, Huu Lam* ( <i>Ulsan Univ.</i> ); Duong Van, Thuy ( <i>Univ. of Ulsan</i> ); Nguyen, Trung ( <i>Univ. of Ulsan</i> ); Lee, HyoSeok ( <i>Univ. of Ulsan</i> ); Son, Hyewon ( <i>Dept. of BioMedical Engineering, Univ. of Ulsan</i> ); Jang, Hojeong ( <i>Dept. of BioMedical Engineering, Univ. of Ulsan</i> ); Oh, Seok ( <i>Univ. of Ulsan</i> ); Lee, Yeasol ( <i>Univ. of Ulsan</i> ); Hwang, Changho ( <i>Ulsan Univ. Hospital</i> ); Koo, Kyoin ( <i>Univ. of Ulsan</i> )	17:15-19:00	ThPoS-24.3	<b>Segmentation of Cell Images by Leaking the Information of Discriminator to Generator</b> Sawada, Kyoya* ( <i>Meijo University</i> ); Hotta, Kazuhiro ( <i>Meijo University</i> ); Imanishi, Ayako ( <i>Kyoto University</i> ); Matsuda, Michiyuki ( <i>Kyoto University</i> ); Terai, Kenta ( <i>Graduate School of Biostudies, Kyoto University</i> )
17:15-19:00	ThPoS-23.46	<b>Position Tracking System by using Unique Magnetic Field and 3D Magnetic Sensors for Surgical Navigation</b> Zhang, Dapeng* ( <i>National Institute of Advanced Industrial Science and Technology (AIST)</i> ); Lu, Jian ( <i>National Institute of Advanced Industrial Science and Technology (AIST)</i> ); Okuda, Yoichi ( <i>Tsukuba University</i> ); Zhang, Lan ( <i>National Institute of Advanced Industrial Science and Technology</i> ); Kurata, Masanao ( <i>University of Tsukuba</i> ); Maeda, Ryutaro ( <i>National Institute of Advanced Industry Science and Technology</i> ); Ohkohchi, Nobuhiro ( <i>University of Tsukuba</i> )	17:15-19:00	ThPoS-24.4	<b>Using Fuzzy Approximate Entropy to Analyze the Activation Changes of Paretic Wrist Flexor in Stroke Survivors</b> Luo, Zichong ( <i>Univ. of Macau</i> ); Wong, Seng Fat* ( <i>Univ. of Macau</i> ); Li, Le ( <i>The First Affiliated Hospital, Sun Yat-sen Univ.</i> ); Bian, Ruihao ( <i>The First Affiliated Hospital, Sun Yat-sen Univ.</i> )
			17:15-19:00	ThPoS-24.5	<b>Analysis of Deaeration Deformation in Ex Vivo Animal Lung by Laplacian-Based Surface Registration</b> Kobayashi, Kotaro* ( <i>Kyoto University</i> ); Nakao, Megumi ( <i>Kyoto University</i> ); Tokuno, Junko ( <i>Kyoto University</i> ); Chen-Yoshikawa, Toyofumi ( <i>Kyoto University</i> ); Matsuda, Tetsuya ( <i>Kyoto University</i> )
			17:15-19:00	ThPoS-24.6	<b>EMG Biofeedback Training Improves Motor Impairment of Mental Disease: A Case Study of Conversion Disorder</b> Oouchida, Yutaka* ( <i>Osaka Kyoiku Univ.</i> ); Ortiz-Catalan, Max ( <i>Chalmers Univ. of Technology</i> ); Sudo, Tamami ( <i>Tohoku Univ.</i> ); Inamura, Tetsunari ( <i>National Institute of Informatics</i> ); Ohki, Yukari ( <i>Kyorin Univ.</i> ); Izumi, Shin-ichi ( <i>Tohoku Univ.</i> )

- 17:15-19:00 ThPoS-24.7  
**Detection and Part Estimation of Heart Disease using Integral Values for Rat Magnetocardiography by LTS-SQUID**  
 Tsukamoto, Yuto\* (*Waseda Univ.*); Ono, Yumie (*Meiji Univ.*); Minamisawa, Susumu (*Jikei Univ. School of Medicine*); Kajimura, Ichige (*Univ.*); Ishiyama, Atsushi (*Waseda Univ.*)
- 17:15-19:00 ThPoS-24.8  
**Development of a Pressure Ulcer Severity Estimation Algorithm via Machine Learning**  
 Ono, Koki\* (*University of Tokyo*); Mori, Taketoshi (*University of Tokyo*); Noguchi, Hiroshi (*University of Tokyo*); Sanada, Hiromi (*University of Tokyo*)
- 17:15-19:00 ThPoS-24.9  
**Effect of Age in the Auditory Late Response during Gap-Prepulse Inhibition Paradigm**  
 Kim, Do Youn (*Interdisciplinary Program, Bioengineering, Graduate School, Seoul National University*); Ku, Yunseo (*Chungnam National University College of Medicine*); Ahn, Joong Woo (*Seoul National University*); Kwon, Chiheon (*Seoul National University*); Park, Moo Kyun (*Seoul National University Hospital*); Lee, Jun Ho (*Seoul National University College of Medicine*); Oh, Seung Ha (*Seoul National University of Medicine*); Suh, Myung-Whan (*Seoul National University Hospital*); Kim, Hee Chan\* (*Seoul National University*)
- 17:15-19:00 ThPoS-24.10  
**Convolutional Neural Networks for Sparse Cardiac CT Reconstruction**  
 Inkinen, Satu Irene\* (*University of Oulu*); Ketola, Juuso Heikki Jalmari (*University of Oulu*); Juntunen, Mikael Asko Kaarlo (*University of Oulu*); Nieminen, Miika Tapio (*University of Oulu*)
- 17:15-19:00 ThPoS-24.11  
**Characterization of Dielectric Properties of Cell Membrane with Cholesterol Depletion using Dielectrophoretic Technique**  
 Kim, Chaewon\* (*Yonsei University, BioMedical Engineering, Nanobiosystem Lab*)
- 17:15-19:00 ThPoS-24.12  
**Using Lasso and Group Lasso Techniques for Seizure Prediction**  
 Yu, Pen-Ning\* (*University of Southern California*); Song, Dong (*University of Southern California*); Berger, Theodore (*USC*)
- 17:15-19:00 ThPoS-24.13  
**Biometric Identity Authentication based on Biomechanical Transfer Characteristics of Fingers**  
 Sim, Joo Yong\* (*Electronics and Telecommunications Research Institute*); Noh, Hyung Wook (*Electronics and Telecommunications Research Institute*); Kim, Bong Kyu (*Electronics and Telecommunications Research Institute*); Ahn, Chang-Geun (*Electronics and Telecommunications Research Institute*)
- 17:15-19:00 ThPoS-24.14  
**Accelerating Worm Segmentation through Inter-Node Parallelism**  
 Pillai, Vineeth (*Illinois Institute of Technology*); Raicu, Daniela S. (*DePaul University*); Raicu, Ioan\* (*Illinois Institute of Technology*)
- 17:15-19:00 ThPoS-24.15  
**4D Printed Biomedical Soft Microdevices**  
 De Marco, Carmela\* (*ETH Zurich*); De Bernardis, Gaston (*Dept. of Pediatric Surgery Kantonspital Aarau*); Alcantara, Carlos (*Multi-Scale Robotics Lab, Institute of Robotics and Intelligent Systems, ETH Zurich*); Kadioglu, Ahmet (*Multi-Scale Robotics Lab, Institute of Robotics and Intelligent Systems, ETH Zurich*); Kim, Sangwon (*Multi-Scale Robotics Lab, Institute of Robotics and Intelligent Systems, ETH Zurich*); Nelson, Bradley (*ETH Zurich*); Pané Vidal, Salvador (*ETH Zürich*)
- 17:15-19:00 ThPoS-24.16  
**Selecting Artifactual Independent Components from fNIRS based on Decoding Analysis**  
 Hoshino, Takayuki (*Keio University*); Kanoga, Suguru (*National Institute of Advanced Industrial Science and Technology (AIST)*); Kanemura, Atsunori\* (*National Institute of Advanced Industrial Science and Technology (AIST)*); Ogawa, Takeshi (*ATR Cognitive Mechanisms Labs*)
- 17:15-19:00 ThPoS-24.17  
**Longitudinal Assessment of Vagus Nerve Stimulation in Awake Behaving Rats**  
 Yaghouby, Farid\* (*FDA*); Shafer, Benjamin (*Food and Drug Admin.*); Vasudevan, Srikanth (*Food and Drug Admin.*)
- 17:15-19:00 ThPoS-24.18  
**Crosswalk Guidance System for the Blind**  
 Hojun Son, Hojun\* (*Univ.*); Cheung, Kai Ho Edgar (*Univ. of Michigan Ann Arbor*); Chung, Yooree (*Univ. of Michigan*); Shergill, Harleen (*Univ. of Michigan*); Johnson-Roberson, Matthew (*Univ. of Michigan*); Weiland, James (*Univ. of Michigan*)
- 17:15-19:00 ThPoS-24.19  
**MRI Data of Cerebral Aneurysms Visualized with Augmented Reality**  
 Karmonik, Christof\* (*The Methodist Hospital Neurological Inst*); Elias, Saba (*Houston Methodist Research Institute*); Zhang, Jonathon (*The Methodist Hospital*); Diaz, Orlando (*The Methodist Hospital*); Klucznik, Richard (*The Methodist Hospital*); Grossman, Robert (*The Methodist Hospital*); Britz, Gavin (*Houston Methodist Research Institute*)
- 17:15-19:00 ThPoS-24.20  
**Quantitative Bone Morphometry with Sparse Projection Data**  
 Ketola, Juuso Heikki Jalmari\* (*Univ. of Oulu*); Karhula, Sakari (*Univ. of Oulu*); Finnilä, Mikko (*Univ. of Oulu*); Nieminen, Miika Tapio (*Univ. of Oulu*); Saarakkala, Simo (*Univ. of Oulu*)
- 17:15-19:00 ThPoS-24.21  
**Linear Discriminant Analysis and K-Means Clustering for Classification of Thyroid Texture in Ultrasound Images**  
 Poudel, Prabal\* (*Otto-von-Guericke-Universität Magdeburg*); Gomes Ataide, Elmer Jeto (*Otto-von-Guericke Universität*); Illanes, Alfredo (*Otto-von-Guericke University of Magdeburg*); Friebe, Michael (*Otto-von-Guericke-University*)
- 17:15-19:00 ThPoS-24.22  
**Mechanisms of Age-Related Memory Decline – MEG Study of Alpha-Band Activity during Memory Encoding**  
 Murakami, Yui (*Hokkaido Bunkyo Univ.*); Boasen, Jared (*Hokkaido Univ.*); Suzuki, Nagito (*Hokkaido Univ.*); Ogino, Koji (*Hokkaido Univ.*); Kuwatani, Wakana (*Hokkaido Bunkyo Univ.*); Takahashi, Saya (*Hokkaido Bunkyo Univ.*); Nagaya, Midori (*Hokkaido Bunkyo Univ.*); Hirayama, Itsuki (*Hokkaido Bunkyo Univ.*); Maruyama, Airi (*Hokkaido Bunkyo Univ.*); Yokosawa, Koichi\* (*Hokkaido Univ.*)
- 17:15-19:00 ThPoS-24.23  
**Assessment of Efficacy of Newly Developed Neural Electrical Stimulator (NerveON-EX)**  
 Kim, Doo Hee\* (*Seoul National University*); Ahn, Woojin (*KAIST*); Kim, Jinwon (*Seoul National University*); Min, Kyou Sik (*Seoul National University*); Bae, Ji Yeon (*Seoul National University Hospital*); Oh, Seung Ha (*Seoul National University of Medicine*)
- 17:15-19:00 ThPoS-24.24  
**Augmented Reality in Transbronchial Needle Aspiration Poster**  
 Garzon Ramirez, Alvaro Esteban\* (*Anhalt Univ. of Applied Sciences*); Khoxhaj, Festim (*Anhalt Univ. of Applied Sciences*); Shaji, Ashly (*Anhalt Univ. of Applied Sciences*); Bracio, Boris Romanus (*Univ. of Applied Science Anhalt*); Pannier, Judith (*Städtisches Klinikum Dessau*); Schulze, Jurgan (*UC San Diego*)

- 17:15-19:00 ThPoS-24.25  
**Segmentation of Myocardium in Ultrasound Image: A Method of Fast Superpixels and Neighborhood Patches based Continuous Min-Cut**  
 Song, Xiangfen (*Institute of Medical Information, School of BioMedical Engineering, Southern Medical Univ., Guangzhou, Guangdong, China*); Wang, Qing\* (*Southern Medical Univ.*)
- 17:15-19:00 ThPoS-24.26  
**Platinum-Iridium Coatings Increased Sensitivity of Impedance-Based Polymer Flow Sensors**  
 Baldwin, Alex\* (*University of Southern California*); Lee, Curtis (*University of Southern California*); Petrossians, Artin (*University of Southern California*); Weiland, James (*University of Michigan*); Meng, Ellis (*University of Southern California*)
- 17:15-19:00 ThPoS-24.27  
**Toward a Capacitive Energy and Signal Supply in Neural Implants: In-Vitro Evaluation of Coupling Behavior through Human Skin**  
 Kiele, Patrick\* (*University of Freiburg*); Pasluosta, Cristian Federico (*University of Freiburg*); Braig, David (*Dept. of Plastic Surgery, Medical Center, University of Freiburg*); Stieglitz, Thomas (*University of Freiburg*)
- 17:15-19:00 ThPoS-24.28  
**Continuous Walking Speed Estimation using Neural Networks and Multi-Sensor Data Fusion**  
 Camargo, Jonathan\* (*Georgia Institute of Technology*); Csomay-Shanklin, Noel (*Georgia Institute of Technology*); Kanwar, Bharat (*Georgia Institute of Technology*); Young, Aaron (*Georgia Tech*)
- 17:15-19:00 ThPoS-24.29  
**Muscle Synergies in Simultaneous Movement of Upper Limb**  
 Camargo, Jonathan\* (*Georgia Institute of Technology*); Young, Aaron (*Georgia Tech*)
- 17:15-19:00 ThPoS-24.30  
**Power-Law Scaling Properties of RR and QT Intervals in Electrocardiograms and at the Cellular Level**  
 Kim, Jiyeong\* (*Tampere University of Technology*); Molkkari, Matti (*Tampere University of Technology*); Shah, Disheet (*University of Tampere*); Aalto-Setälä, Katriina (*University of Tampere*); Räsänen, Esa (*Tampere University of Technology*)
- 17:15-19:00 ThPoS-24.31  
**Temporal Expansion and Parameter Varying Methods for the Identification of Nonlinear Time-Varying Ankle Dynamic Stiffness**  
 Vargas-Calixto, C. A. Johann\* (*McGill University*); Guarín, Diego Luis (*Harvard Medical School*); Sobhani Tehrani, Ehsan (*McGill University*); Kearney, Robert Edward (*McGill University*)
- 17:15-19:00 ThPoS-24.32  
**Improvement of Dry and Wet Adhesion of Parylene C to Platinum for Robust Thin Film Medical Microdevices**  
 Ortigoza-Diaz, Jessica Lizbeth\* (*University of Southern California*); Scholten, Kee (*University of Southern California*); Meng, Ellis (*University of Southern California*)
- 17:15-19:00 ThPoS-24.33  
**Contribution of the Central Pattern Generator and Reflex to the Performance of Hexapod Locomotion**  
 Nagahori, Masayuki\* (*Yamaguchi University*); Nishii, Jun (*Yamaguchi University*)
- 17:15-19:00 ThPoS-24.34  
**An Implantable Animal Neural Stimulation System Partly Powered by Biofuel Cell**  
 Yun, Seunghyeon (*Seoul National Univ.*); Seo, Jungmin (*Seoul National Univ.*); Ahn, Seung-Hee (*Seoul National Univ.*); Koh, Chin Su (*Yonsei Univ.*); Shin, Soowon (*Seoul National Univ.*); Choi, Gwang Jin (*Seoul National Univ.*); Lee, Dahye (*Seoul National Univ.*); Jeong, Sung Hee (*Seoul National Univ.*); Yoon, Min-Sik (*Yonsei Univ.*); Cho, Yoon Kyung (*Ewha Womans Univ.*); Lee, Jee Won (*Ewha Womans Univ.*); Lee, Youjin (*Ewha Womans Univ.*); Kim, Chaebin (*Seoul National Univ.*); Jung, Hyun Ho (*Yonsei Univ.*); Jun, Sang Beom (*Ewha Womans Univ.*); Chung, Taek Dong (*Seoul National Univ.*); Chang, Jin Woo (*Yonsei Univ.*); Kim, Sung June\* (*Seoul National Univ.*)
- 17:15-19:00 ThPoS-24.35  
**A Basic Study for Doorknob Biometric Authentication using High Frequency ECG Measured through Capacitive Electrodes**  
 Sasaki, Kosuke\* (*Tokyo City University*); Minemura, Kohei (*Tokyo City University*); Ozawa, Yuta (*Tokyo City University*); Kyoso, Masaki (*Tokyo City University*)
- 17:15-19:00 ThPoS-24.36  
**Active Visual Neurofeedback for Direct Alpha Wave Modulation**  
 Liu, Jia (*Shenzhen Univ.*); Huang, Gan\* (*Shenzhen Univ.*); Zhang, Li (*Shenzhen Univ.*); Chen, Xin (*Shenzhen Univ.*); Lu, Minhua (*Shenzhen Univ.*); Zhang, Xin-Yu (*Shenzhen Univ.*); Zhang, Zhiguo (*Shenzhen Univ.*)
- 17:15-19:00 ThPoS-24.37  
**Development of Thin Film based Flexible Pressure Sensor and Its Biomedical Application to Steam Popping Detection**  
 Jeong, Yongrok (*KAIST*); Park, Jaeho (*Korea Advanced Institute of Science and Technology (KAIST)*); Kim, Kyuyoung (*Korea Advanced Institute of Science and Technology*); Park, Inkyu\* (*Korea Advanced Institute of Science and Technology (KAIST)*)
- 17:15-19:00 ThPoS-24.38  
**Effects of Kinesio Taping on the Lower Limb in Drop Jump Performance**  
 Shinohara, Mai\* (*Ritsumeikan University*); Shiozawa, Naruhiro (*Ritsumeikan University*)
- 17:15-19:00 ThPoS-24.39  
**An End-to-End Electrocardiogram Delineator via Deep Neural Networks**  
 Jia, Dongya\* (*CVTE, Guangdong Province, China*); Zhao, Wei (*Guangzhou Shiyuan Electronics Co., Ltd.*); Xu, Yanwu (*Guangzhou Shiyuan Ltd. Co*); Sun, Xu (*Guangzhou Shiyuan Electronics Co., Ltd. (CVTE)*); Hu, Jing (*Guangzhou Shiyuan Electronics Technology Co., Ltd.*); Yan, Cong (*Guangzhou Shiyuan Electronics Co., Ltd.*); Wang, Hongmei (*Guangzhou Shiyuan Electronics Co., Ltd.*); You, Tianyuan (*Guangzhou Shiyuan Electronics Co., Ltd.*)
- 17:15-19:00 ThPoS-24.40  
**Ph-Responsive Polymer Coating for Transient Electronic Device with Capability of Controllable Degradation**  
 Park, Jaeho (*Korea Advanced Institute of Science and Technology (KAIST)*); Park, Inkyu\* (*Korea Advanced Institute of Science and Technology (KAIST)*)
- 17:15-19:00 ThPoS-24.41  
**Process for Bonding between Polydimethylsiloxane (PDMS) and Polyimide (pi) with Oxygen Plasma Treatment at Room Temperature**  
 Moon, Jin-hee\* (*Medical Device Development Center of Osong Medical Innovation Foundation*); Kwon, Dahye (*KBIO*); Lee, Seung-A (*Osong Medical Innovation Foundation*); Baek, Dong-Hyun (*Korea University*)

17:15-19:00	ThPoS-24.42	ThPoS-25: 17:15-19:00	Exhibit Hall 2
<b>An Infrared Images Monitoring System for Thrombosis of Free-Flap after Surgery</b>		<b>Thursday 1 Page Research Poster Paper (IV) (Poster Session)</b>	
Wu, Yi-Ju* ( <i>National Taiwan University</i> ); Perng, Cherng-Kang ( <i>Taipei Veterans General Hospital</i> ); Lu, Cheng-Che ( <i>National Taiwan University</i> ); Hsu, Fu-Sheng ( <i>National Taiwan University</i> ); Ding, Hsien-Ming ( <i>Fu-Jen Catholic University</i> ); Yu, Hsin-Ju ( <i>National Taiwan University</i> ); Chen, Bo-Wei ( <i>National Taiwan University</i> ); Chen, Chung-Ming ( <i>National Taiwan University</i> )		17:15-19:00	
17:15-19:00		ThPoS-25.1	
<b>BCI Action Observation Game using Flickering Action Video has a Positive Impact on Mirror Neuron System Activity in Stroke Patients</b>		<b>Real-Time Multichannel Processing of Peripheral Nerve Signals for Neuroprosthetic Hand</b>	
Lim, Hyunmi ( <i>Keimyung University</i> ); Choi, Hyoseon ( <i>Eulji University School of Medicine</i> ); Kang, Youn Joo ( <i>Eulji University School of Medicine</i> ); Ku, Jeonghun* ( <i>Keimyung University</i> )		Shon, Ahnsei ( <i>Texas A&amp;M University</i> ); Chu, Jun-Uk ( <i>Korea Institute of Machinery and Materials</i> ); Jung, Jiuk* ( <i>Korea Institute of Machinery and Materials</i> )	
17:15-19:00		ThPoS-25.2	
<b>Posture Control during Walking by Muscle Synergy Recruited by Plantar Information</b>		<b>Unobstrusive and Wireless Electronic Oscillometric Sphygmomanometer for Ambulatory Blood Pressure Monitoring</b>	
Hioki, Tomoko* ( <i>Yamaguchi Junior College</i> ); Goto, Mari ( <i>Yamaguchi University</i> ); Nishii, Jun ( <i>Yamaguchi University</i> )		Gosselin, Benoit* ( <i>Laval University</i> ); Robitaille, Pierre ( <i>Laval University</i> ); Juteau, Nicolas ( <i>Laval University</i> )	
17:15-19:00		ThPoS-25.3	
<b>Toward a Simplified Estimation of Abnormal Reflex Torque Due to Elbow Spasticity using Neuro-Musculoskeletal Model</b>		<b>3-D Hermetic Packaging of Sub-Mm Size Implantable Microelectronic Sensors by Atomic Layer Deposition (ALD) for Chronic Use</b>	
Sung, Joohwan ( <i>Daegu Gyeongbuk Institute of Science &amp; Technology (DGIST)</i> ); Choi, Seoyoung ( <i>Daegu Gyeongbuk Institute of Science &amp; Technology</i> ); Kim, Junyoung ( <i>Daegu Gyeongbuk Institute of Science and Technology (DGIST)</i> ); Kim, Jonghyun* ( <i>DGIST</i> )		Jeong, Joonsoo ( <i>Brown Univ.</i> ); Laiwalla, Farah ( <i>Brown Univ.</i> ); Lee, Jihun ( <i>Brown Univ.</i> ); Ritasalo, Riina ( <i>Picosun Oy</i> ); Marko, Pudas ( <i>Picosun Oy</i> ); Nurmikko, Arto* ( <i>Brown Univ.</i> )	
17:15-19:00		ThPoS-25.4	
<b>Design of a Low-Cost Open Source FES System</b>		<b>A Fast and Accurate Muscle Onset Detection Algorithm</b>	
Raasch, Ryan* ( <i>Univ. of California, Irvine</i> ); Edmunds, Jordan ( <i>Univ. of California, Irvine</i> ); Do, An H. ( <i>Univ. of California Irvine</i> )		Suvisheshamuthu, Easter ( <i>Kessler Foundation</i> ); Allexandre, Didier* ( <i>Kessler Foundation</i> ); Yue, Guang ( <i>Kessler Foundation</i> )	
17:15-19:00		ThPoS-25.5	
<b>Mitigating Blurring Artifacts and Reducing N/2 Ghost in Multi-Excitation Wideband Echo Planar Imaging</b>		<b>Integration of Radiomics Information in a Computerized Decision Support System for Research on Head and Neck Cancer</b>	
Cheng, Po-Wei ( <i>Taiwan</i> ); Zhao, Wan-Ting ( <i>National Taiwan Univ.</i> ); Wu, Edzer L. ( <i>National Taiwan Univ.</i> ); Chiueh, Tzi-Dar ( <i>National Taiwan Univ.</i> ); Chen, Jyh-Hong* ( <i>National Taiwan Univ.</i> )		Vazquez-Payno, Alberto ( <i>Univ. Polit�cnica de Madrid</i> ); Hernandez, Liss* ( <i>Univ. Polit�cnica de Madrid</i> ); Lopez-Perez, Laura ( <i>Univ. Polit�cnica de Madrid</i> ); Ugena, Ana Maria ( <i>Univ. Polit�cnica de Madrid</i> ); Guillen, Sergio ( <i>MYSPHERA S.L.</i> ); Arredondo, Mar�a Teresa ( <i>Univ. Polit�cnica de Madrid</i> ); Fico, Giuseppe ( <i>Univ. Polit�cnica de Madrid</i> )	
17:15-19:00		ThPoS-25.6	
<b>Development of Ph Monitoring System for Diagnosis of Gastroesophageal Reflux Disease</b>		<b>Change in the Stride Length and Gait Cycle Induced by Vibrotactile Stimulation on 4 Musculotendinous Parts in the Lower Extremity</b>	
Kim, EungBo ( <i>Hanbat National University</i> ); Joung, YeunHo* ( <i>Hanbat National University</i> )		Taichi, Ichikawa ( <i>Tokyo University of Science</i> ); Sawatome, Akira ( <i>Tokyo University of Science</i> ); Tada, Mitsunori ( <i>National Institute of Advanced Industrial Science and Technology</i> ); Takemura, Hiroshi* ( <i>Tokyo University of Science</i> )	
17:15-19:00		ThPoS-25.7	
<b>Node-Pore Sensing Enables Integrated Surface Marker Screening and Mechanical Phenotyping of Single Cells</b>		<b>Stereotactic Radiosurgery for Spinal Metastases Delivered with Volumetric Modulated Arc Therapy – A Paradigm Shift</b>	
Cotner, Kristen L.* ( <i>University of California, Berkeley</i> ); Scheideler, Olivia J. ( <i>University of California, Berkeley</i> ); Kim, Junghyun ( <i>University of California, Berkeley</i> ); Sohn, Lydia ( <i>University of California-Berkeley</i> )		Song, Yulin ( <i>Memorial Sloan-Kettering Cancer Ctr</i> ); Mueller, Boris ( <i>Memorial Sloan-Kettering Cancer Center</i> ); Voros, Laszlo ( <i>Memorial Sloan Kettering Cancer Center</i> ); Zhang, Miao ( <i>Memorial Sloan Kettering Cancer Center</i> ); Tang, Xiaoli* ( <i>Memorial Sloan Kettering Cancer Center</i> ); Mychalczak, Borys ( <i>Memorial Sloan-Kettering Cancer Center</i> )	
17:15-19:00		ThPoS-25.8	
<b>Microfluidic Platform Incorporating Microelectrode Array for Motor Neuron Regeneration</b>		<b>Trachea Axes Detection for Semi-Automatic Registration in Robotic Thyroid Surgery</b>	
Jeong, Hee Soo* ( <i>Ewha Womans University</i> ); Yoo, Hyun Ji ( <i>Ewha Womans University</i> ); Cho, Yoon Kyung ( <i>Ewha Womans University</i> ); Min, Kyou Sik ( <i>Seoul National University</i> ); Jun, Sang Beom ( <i>Ewha Womans University</i> )		Lee, Dongheon ( <i>Seoul National Univ.</i> ); Chai, Young Jun ( <i>Seoul National Univ.</i> ); Kong, Hyoun-Joong ( <i>Chungnam National Univ. School of Medicine</i> ); Kim, Hee Chan* ( <i>Seoul National Univ.</i> )	
17:15-19:00		ThPoS-25.9	
<b>fMRI Deconvolution via Temporal Regularization using a LASSO Model and the LARS Algorithm</b>		<b>fMRI Deconvolution via Temporal Regularization using a LASSO Model and the LARS Algorithm</b>	
		Costantini, Isa* ( <i>Inria Sophia Antipolis-M�diterran�e, Univ. C�te d'Azur, France</i> ); Filipiak, Patryk ( <i>INRIA Sophia Antipolis-M�diterran�e, Univ. C�te d'Azur</i> ); Maksymenko, Kostiantyn ( <i>Inria Sophia Antipolis-M�diterran�e, Univ. C�te d'Azur, France</i> ); Deslauriers-Gauthier, Samuel ( <i>Univ. C�te d'Azur, Inria, France</i> ); Deriche, Rachid ( <i>INRIA Sophia Antipolis-M�diterran�e</i> )	

- 17:15-19:00 ThPoS-25.10  
**A System for Testing Epidural Stimulation to Enhance Stroke Recovery in Non-Human Primates**  
 Totten, Douglas\* (*University of California, San Francisco*); Carmena, Jose M. (*University of California, Berkeley*); Morecraft, Robert (*University of South Dakota School of Medicine*); Ganguly, Karunesh (*University of California, San Francisco*)
- 17:15-19:00 ThPoS-25.11  
**Implementing a Hybrid Bi-Directional Communication between Neuronal Assemblies**  
 Buccelli, Stefano (*Istituto Italiano di Tecnologia, Genova*); Colombi, Ilaria (*Istituto Italiano di Tecnologia*); Bornat, Yannick (*IMS Lab*); Pasquale, Valentina (*Istituto Italiano di Tecnologia*); Martines, Laura (*Istituto Italiano di Tecnologia*); Difato, Francesco (*fondazione istituto italiano di tecnologia*); Averna, Alberto (*Istituto Italiano di Tecnologia*); Tessadori, Jacopo (*IIT - Italian Institute of Technology*); Tedesco, Mariateresa (*Univ. of Genova*); Massobrio, Paolo (*Univ. of Genova*); Levi, Timothee (*Univ. of Tokyo*); Chiappalone, Michela\* (*Istituto Italiano di Tecnologia*)
- 17:15-19:00 ThPoS-25.12  
**Automated Detection of Epileptogenic Lesions on MRI Data: A Comparison of Voxel and Surface-Based Methods**  
 Poudel, Govinda\* (*University of Sydney*); Nikpour, Armin (*University of Sydney*); Wang, Chenyu (*University of Sydney*); Barnett, Michael (*University of Sydney*)
- 17:15-19:00 ThPoS-25.13  
**Autoencoder-Based Source Localization using MEG/EEG**  
 Chan, Hui-Ling (*National Chiao Tung Univ.*); Yu, Chun-Hsien (*National Chiao Tung Univ.*); Chen, Li-Fen (*National Yang-Ming Univ.*); Chen, Yong-Sheng\* (*National Chiao Tung Univ.*)
- 17:15-19:00 ThPoS-25.14  
**Classification of Cognitive Workload using Electroencephalogram (EEG) during N-Back Task**  
 Kwon, Joo-Hee (*Chonnam National University*); Kim, Euijin (*Hanyang University*); Im, Chang-Hwan (*Hanyang University*); Kim, Do-Won\* (*Chonnam National University*)
- 17:15-19:00 ThPoS-25.15  
**Step Initiation Perturbations Lead to Sustained Adaptation**  
 Shirazi, Seyed Yahya\* (*University of Central Florida*); Huang, Helen J. (*University of Central Florida*)
- 17:15-19:00 ThPoS-25.16  
**Diffusion Tensor Imaging Reveals Highly Atypical White Matter in 22q11.2 Deletion Syndrome: Meta and Mega-Analysis Findings of the ENIGMA Consortium**  
 Villalon Reina, Julio Ernesto\* (*Imaging Genetics Center*); Martinez, Kenia (*Univ. Autonoma de Madrid*); Thompson, Paul (*Univ. of Southern California*); Bearden, Carrie (*Semel Institute for Neuroscience and Human Behavior and Dept. of Psychiatry, Univ. of California Los Angeles*); Working Group, ENIGMA 22q11 (*Univ. of Southern California*)
- 17:15-19:00 ThPoS-25.17  
**Estrogen Receptor Alpha Protein Extraction with Nanowire Utilizing Microfluidic Device and Effect of Fluid Velocity on Lysis Efficiency**  
 Kim, Jung (*Korea Research Institute of Chemical Technology*); Park, Je-Kyun (*KAIST*); Park, Inkyu\* (*Korea Advanced Institute of Science and Technology (KAIST)*)
- 17:15-19:00 ThPoS-25.18  
**Estimating How Longitudinal Confounds Contribute to Fractional Anisotropy Variability in Diffusion Tensor Imaging of the Brain**  
 Rostowsky, Kenneth A. (*Univ. of Southern California*); Chowdhury, Nahian F. (*Univ. of Southern California*); Maher, Alexander S. (*Univ. of Southern California*); Suzuki, Sydney K. (*Univ. of Southern California*); Irimia, Andrei\* (*Univ. of Southern California*)
- 17:15-19:00 ThPoS-25.19  
**The Uncertainty Ellipsoid and Radius: Novel Metrics for Assessing Confounds in Longitudinal Diffusion Tensor Imaging of the Brain**  
 Rostowsky, Kenneth A. (*Univ. of Southern California*); Chowdhury, Nahian F. (*Univ. of Southern California*); Maher, Alexander S. (*Univ. of Southern California*); Suzuki, Sydney K. (*Univ. of Southern California*); Irimia, Andrei\* (*Univ. of Southern California*)
- 17:15-19:00 ThPoS-25.20  
**Quantitative Assessment of Traumatic Upper Limb Peripheral Nerve Injuries using Surface Electromyography**  
 Tang, Weidi (*Univ. of Science and Technology of China*); Sun, Yong (*Institute of Criminal Sciences at Hefei Public Security Bureau*); Yao, Bo (*Chinese Academy of Medical Sciences & Peking Union Medical College Institute of BioMedical Engineering*); Chen, Xiang (*Univ. of Science & Technology of China*); Zhang, Xu\* (*Univ. of Science and Technology of China*)
- 17:15-19:00 ThPoS-25.21  
**Detection of Heat Stress Effects on Greenhouse Workers by using Photoplethysmogram**  
 Zhao, Tiejun (*Niigata Agro-Food Univ.*); Sviridova, Nina\* (*Univ. of Tokyo*); Aihara, Kazuyuki (*Univ. of Tokyo*); Okada, Kunihiko (*National Agriculture and Food Research Organization*); Nakano, Akimasa (*National Agriculture and Food Research Organization*)
- 17:15-19:00 ThPoS-25.22  
**Visual Flow with an Immersive Virtual Reality System Reduces Gait Variability in Steady Walking: A Self-Paced Treadmill Study**  
 Kato, Kenji\* (*National Center for Geriatrics and Gerontology*)
- 17:15-19:00 ThPoS-25.23  
**A Hand Rehabilitation Exercise System for People with Stroke (Hand REPS)**  
 Mohan, Akhil\* (*Indian Institute of Technology Madras*); R, Aruna (*Christian Medical College Vellore*); Samuelkamaleshkumar, Selvaraj (*Christian Medical College Vellore*); Tharion, George (*Christian Medical College Vellore*); Ramarathnam, Krishna Kumar (*Indian Institute of Technology Madras*); Devasahayam, Suresh R (*Christian Medical College Vellore*)
- 17:15-19:00 ThPoS-25.24  
**Operation Verification of an EEG-Driven Virtual Reality Concert Experience System Implemented as a Client-Server System**  
 Kobayashi, Shohei\* (*Shibaura Institute of Technology*); Horie, Ryota (*Shibaura Institute of Technology*)
- 17:15-19:00 ThPoS-25.25  
**An Experiment of the Proprioception Drift with Virtual Hand Illusion**  
 Lim, Seungeui (*Keimyung Univ.*); Ku, Jeonghun\* (*Keimyung Univ.*)
- 17:15-19:00 ThPoS-25.26  
**A Simulation Study for Visualizing sEMG Sources using a Bayesian Framework**  
 Piovanelli, Enrico\* (*University of Tokyo*); Shirafuji, Shouhei (*University of Tokyo*); Ogata, Yousuke (*Tokyo Institute of Technology*); Yoshimura, Natsue (*Tokyo Institute of Technology*); Ota, Jun (*University of Tokyo*)
- 17:15-19:00 ThPoS-25.27  
**Development of a Neural Recording ASIC for an ECoG and Spike and Its Wireless System for BMI**  
 Ando, Hiroshi\* (*NICT*); Kamata, Takatsugu (*Osaka University*); Suzuki, Katsuyoshi (*Nihon Kohden Corp.*); Kameda, Seiji (*Osaka University*); Suzuki, Takafumi (*National Institute of Information and Communications Technology*); Hirata, Masayuki (*Osaka University Medical School*)



- 17:15-19:00 ThPoS-25.28  
**Development of a Direct Feeding FES Treatment System with Selective High Precision Function**  
 Kato, Yuta\* (*Tohoku Gakuin University*); Yokoshita, Yuta (*Tohoku Gakuin University*); Abe, Takuma (*Tohoku Gakuin University*); Miyahara, Satoshi (*Tohoku Gakuin University*); Sato, Fumihiko (*Tohoku Gakuin University*); Ishikawa, Kazumi (*Tohoku Gakuin University*)
- 17:15-19:00 ThPoS-25.29  
**Effects of Personalized Exoskeleton-Based Rehabilitation on Upper Limb Kinematics and Muscle Activation after Stroke: A Pilot Study**  
 Pierella, Camilla\* (*École Polytechnique Fédérale de Lausanne*); Kinany, Nawal (*Swiss Federal Institute of Technology*); Coscia, Martina (*TNE Lab Ecole Polytechnique Fédérale de Lausanne*); Pirondini, Elvira (*Institute of Bioengineering/Center for Neuroprosthetics, Ecole Polytechnique Fédérale de Lausanne (EPFL)*); Miehlsbradt, Jennifer (*École Polytechnique Fédérale de Lausanne*); Giang, Christian (*École Polytechnique Fédérale de Lausanne*); Guggisberg, Adrian G (*University Hospital of Geneva*); Micera, Silvestro (*Scuola Superiore Sant'Anna*)
- 17:15-19:00 ThPoS-25.30  
**Pinna Orienting by Multiple Auricular Muscles in Response to Exogenously Driven Attention**  
 Schroeder, Andreas (*Saarland University of Applied Sciences*); Corona-Strauss, Farah I. (*Saarland University*); Hackley, Steven Allen (*University of Missouri, Columbia*); Strauss, Daniel J.\* (*Saarland University, Medical Faculty*)
- 17:15-19:00 ThPoS-25.31  
**Interactive Control of Elbow Movement in Virtual Reality for Limb Movement Rehabilitation**  
 Hou, Wensheng (*Bioengineering Inst of Chongqing University*); Chen, Lin\* (*Chongqing University*); Zhai, Shengjie (*University of Nevada, Las Vegas*)
- 17:15-19:00 ThPoS-25.32  
**A Measurement System for Contact Pressure Distribution between Oronasal Mask and the Face to Evaluate Fitting**  
 Noguchi, Hiroshi\* (*Univ. of Tokyo*); Shikama, Maiko (*Univ. of Tokyo*); Nakagami, Gojiro (*Univ. of Tokyo*); Sanada, Hiromi (*Univ. of Tokyo*); Mori, Taketoshi (*Univ. of Tokyo*)
- 17:15-19:00 ThPoS-25.33  
**A Lower Limb Phantom for Testing High-Density EMG**  
 Schlink, Bryan\* (*Univ. of Florida*); Ferris, Daniel (*Univ. of Florida*)
- 17:15-19:00 ThPoS-25.34  
**Enabling Communication with Pseudocoma Patients using EEG and Deep Learning**  
 Comaniciu, Alexandra\* (*The Lawrenceville School*); Najafzadeh, Laleh (*Rutgers University*)
- 17:15-19:00 ThPoS-25.35  
**Enhancement of Hippocampal Spatial Decoding with Q-Learning Method Utilizing  $\theta$  Rhythm Phase Precession as the Relative Reward Approach**  
 Chen, Ko-Chiang (*National Yang-Ming Univ.*); Chen, Bo-Wei (*National Yang-Ming Univ.*); Yeh, Yi-hsin (*Yang Ming Univ.*); Ting-Yu, Ho (*Yang Ming Univ.*); Syu, Yi-Siang (*Yang Ming Univ.*); Pan, Han-Chi (*National Health Research Institutes*); Lai, Hsin-Yi (*Zhejiang Univ.*); Chen, You-Yin\* (*National Chiao-Tung Univ.*)
- 17:15-19:00 ThPoS-25.36  
**Somatosensory Attentional Correlates Elicited by Ultrasound in Mid-Air**  
 Lehser, Caroline\* (*Saarland University*); Strauss, Daniel J. (*Saarland University, Medical Faculty*)
- 17:15-19:00 ThPoS-25.37  
**Muscle Synergies as Index for Expert Sit-to-Stand Therapy**  
 Lao, Bryan\* (*Nara Institute of Science and Technology*); Tamei, Tomoya (*Nara Institute of Science and Technology*); Ikeda, Kazushi (*Nara Institute of Science and Technology*)
- 17:15-19:00 ThPoS-25.38  
**Distributed Implantation of Intracortical Microdevice Sensors**  
 Sigurdsson, Stefan Alexis (*Brown University*); Yu, Zeyang (*Brown University*); Pages, Stephane (*Wyss Center for Bio and Neuroengineering*); Batti, Laura (*Wyss Center for Bio and Neuroengineering*); Nurmikko, Arto\* (*Brown University*)
- 17:15-19:00 ThPoS-25.39  
**Multi-Joint Neuromuscular Electrical Stimulation Improves Post-Stroke Gait Kinematics**  
 Makowski, Nathaniel\* (*MetroHealth Medical Center*); Kobetic, Rudi (*Louis Stokes Veterans Affairs Medical Center*); Foglyano, Kevin M. (*Cleveland APT Center/Louis Stokes Cleveland VA Medical Center*); Lombardo, Lisa (*Louis Stokes Cleveland VA Medical Center / Cleveland FES Center*); Bailey, Stephanie (*Louis Stokes Cleveland Veterans Affairs Medical Center*); Pinault, Gilles (*Case Western Reserve University*); Selkirk, Stephen (*Louis Stokes Cleveland Veterans Affairs Medical Center*); Triolo, Ronald J. (*US Dept of Veterans Affairs/Case Western Reserve*)
- 17:15-19:00 ThPoS-25.40  
**A Deep Learning based Reconstruction Method for Sparse-View CT**  
 Zhang, Zhicheng (*Virginia Polytechnic Institute and State Univ.*); Dong, Xu (*Virginia Polytechnic Institute and State Univ.*); Cao, Guohua\* (*Virginia Polytechnic Institute and State Univ.*)
- 17:15-19:00 ThPoS-25.41  
**A Comparison of Alpha Rhythm Detection by Tripolar Concentric Ring Electrodes and Conventional Disk EEG Electrodes**  
 Haddix, Chase (*University of Kentucky*); Al-Bakri, Amir (*University of Kentucky*); Besio, W. G. (*University of Rhode Island*); Sunderam, Sridhar\* (*University of Kentucky*)
- 17:15-19:00 ThPoS-25.42  
**Advance Target Locator for Blind/Visually Impaired Archers**  
 Hess, Robert (*Wilkes University*); Kiehart, John (*Wilkes University*); Mugg, David (*Wilkes University*); Patriarco, Vincent (*Wilkes University*); Sabouni, Abas\* (*Wilkes University*); Westawski, Sean (*Wilkes University*)
- 17:15-19:00 ThPoS-25.43  
**Tomography based Multi-Distance Near Infrared Spectroscopy for Measuring Muscle Oxygen Saturation**  
 Choi, JongKwan\* (*OBELAB*); Han, IITaek (*OBELAB*)
- 17:15-19:00 ThPoS-25.44  
**Archelis: A Wearable Chair for Reducing Surgeons' Fatigue in the Operating Room**  
 Nakamura, Ryoichi\* (*Chiba University*); Kawahira, Hiroshi (*Jichi Medical University*)
- 17:15-19:00 ThPoS-25.45  
**An Implantable Photovoltaic Device using Single-Walled Carbon Nanotubes and Performance Evaluation in Vivo**  
 Murakami, Orie\* (*Tokyo City Univ.*); Minemura, Kohei (*Tokyo City Univ.*); Hirata, Takamichi (*Tokyo City Univ.*); Hatakeyama, Rikizo (*Tohoku Univ.*); Kyoso, Masaki (*Tokyo City Univ.*)
- 17:15-19:00 ThPoS-25.46  
**A Low-Cost, Passive Bodyweight Support System for Overground Walking**  
 MacLean, Mhairi\* (*Univ. of Florida*); Ferris, Daniel (*Univ. of Florida*)

17:15-19:00 ThPoS-25.47  
**Detecting Changes of Bradykinesia of Patients with Parkinson's Disease by Wearable Sensors**  
 Wang, Jingying (*Fudan University*); Gong, Dawei (*Nanjing Brain Hospital*); Luo, Huichun (*University of Science and Technology of China, Hefei*); Zhang, Wenbin (*Nanjing Medical University*); Wang, Shouyan\* (*Chinese Academy of Sciences*)

17:15-19:00 ThPoS-25.48  
**Development of Low Concentration Hydrogen Peroxide with Plasma Jet Device for Surface Sterilization**  
 Choi, Jongbong (*Hanyang University*); Lim, Taeho (*Hanyang University, College of Medicine*); Song, Yeongtak\* (*Hanyang University*); Oh, Jaehoon (*Hanyang University, College of Medicine*); Kim, Minwoo (*Hanyang University*); Sung, Hyunji (*Hanyang University*); Lee, Yoonje (*Hanyang University Medical Center*); Kang, Hyunggoo (*Hanyang University*)

17:15-19:00 ThPoS-25.49  
**Relation between Facial Surface EMG and Facial Displacements**  
 Guarin, Diego Luis\* (*Harvard Medical School*); Tsrar, Guy (*McGill University*); Jowett, Nathan (*Harvard University*)

ThPoS-26: 17:15-19:00 Exhibit Hall 2  
**Thursday 1 Page Research Poster Paper (V)** (Poster Session)

17:15-19:00 ThPoS-26.1  
**Innovative Larynx Elevation Counter during Saliva Swallowing using a Series of Flexible Stretchable Strain Sensors**  
 Yamamoto, Akio\* (*Kobe Univ.*); Nakamoto, Hiroyuki (*Kobe Univ.*); Bessho, Yusuke (*Bando Chemical Industries, Ltd.*); Terada, Tsutomu (*Kobe Univ.*); Ishikawa, Akira (*Kobe Univ.*)

17:15-19:00 ThPoS-26.2  
**3D Printed Normal Force Graphene Sensor**  
 Kaduwela, Asitha\* (*UCLA*); Sun, Songping (*University of California Los Angeles*)

17:15-19:00 ThPoS-26.3  
**An Optical Monitoring System for Laser Interstitial Thermal Therapy**  
 Geoghegan, Rory\* (*Univ. of California Los Angeles*); Priester, Alan (*Univ. of California Los Angeles*); Zhang, Le (*Univ. of California Los Angeles*); Fuad, Elkhouri (*Univ. of California Los Angeles*); Wu, Holden (*Univ. of California Los Angeles*); Marks, Leonard (*Univ. of California Los Angeles*); Grundfest, Warren S. (*UCLA*); Natarajan, Shyam (*Univ. of California Los Angeles*)

17:15-19:00 ThPoS-26.4  
**Wavelet Leader based Multifractal Analysis of Heart Rate Variability in Atrial Fibrillation**  
 Kais, Gadhumi\* (*University of California San Francisco*); Do, Duc H. (*University of California Los Angeles*); Hu, Xiao (*University of California, San Francisco*)

17:15-19:00 ThPoS-26.5  
**Photometric Stereo for Endoscopic 3D Reconstruction**  
 Fu, Yifan (*Tsinghua University*); Huang, Zhiwen (*Tsinghua University*); Wu, Jian\* (*Tsinghua University*)

17:15-19:00 ThPoS-26.6  
**The Relation between Electrophysiological and Motor Outcomes in Adult Stroke Survivors**  
 Sandison, Melissa\* (*The Catholic Univ. of America*); Kukke, Sahana (*Catholic Univ. of America*); Casas, Rafael (*The Catholic Univ. of America*); Lum, Peter (*The Catholic Univ. of America*)

17:15-19:00 ThPoS-26.7  
**Cross-Correlation based ROI Detection for SNR Maximization in Calcium Imaging**  
 Kang, Seongtak (*DGIST (Daegu Gyeongbuk Institute of Science & Tech.)*); Kim, Kyungsoo (*Daegu Gyeongbuk Institute of Science and Tech.*); Han, Young-Eun (*KBRI (Korea Brain Research Institute)*); Rah, Jong Cheol (*KBRI (Korea Brain Research Institute)*); Choi, Ji-Woong\* (*Daegu Gyeongbuk Institute of Science and Tech.*)

17:15-19:00 ThPoS-26.8  
**Fixed-Point CPWC Ultrasound Image Reconstruction**  
 Shi, Ji (*Univ. of Victoria*); Rakhmatov, Daler\* (*Univ. of Victoria*)

17:15-19:00 ThPoS-26.9  
**Optimization of the Surgical Tool Marker in Optical-Navigation-Guided Endoscopic Sinus Surgery**  
 Sawano, Yuichiro\* (*Chiba Univ.*); Nakamura, Ryoichi (*Chiba Univ.*)

17:15-19:00 ThPoS-26.10  
**Smaller Alginate Micro-Droplets using Three Inlets Microfluidic Device for the Drug Delivery System**  
 Nguyen, Trung\* (*Univ. of Ulsan*); Lee, Hyoseok (*Univ. of Ulsan*); Lee, Yeasol (*Univ. of Ulsan*); Duong Van, Thuy (*Univ. of Ulsan*); Phan, Huu Lam (*Ulsan Univ.*); Son, Hyewon (*Dept. of BioMedical Engineering, Univ. of Ulsan*); Jang, Hojeong (*Dept. of BioMedical Engineering, Univ. of Ulsan*); Oh, Seok (*Univ. of Ulsan*); Hwang, Changho (*Ulsan Univ. Hospital*); Koo, Kyoin (*Univ. of Ulsan*)

17:15-19:00 ThPoS-26.11  
**Application of High Density Connector to Plug-In Type Microelectrode Array System for in Vitro Neural Spike Recording**  
 Kim, Daejeong (*KAIST*); Kang, Hongki (*KAIST*); Nam, Yoonkey\* (*Korea Advanced Institute of Science and Technology*)

17:15-19:00 ThPoS-26.12  
**Evaluation of Implantable Cortical Multimodality Probe in a Feline**  
 Ishihara, Yuya\* (*Kumamoto University*); Yamakawa, Toshitaka (*Kumamoto University*)

17:15-19:00 ThPoS-26.13  
**Improvement of Voxel Arrangement for Depth Selective Filtering Algorithm**  
 Yamamoto, Kohei\* (*Sophia University*)

17:15-19:00 ThPoS-26.14  
**Development of Dual Mode Feedback-Controlled Cycling System for Upper Limb Rehabilitation of Children with Cerebral Palsy**  
 Cho, Seung Yeon (*Handong Global University*); Seo, Seong Won (*Handong Global University*); Kim, Sung Gyung (*K Institute of Motor Development*); Kim, Jihun (*Handong Global University*); Kim, Jaehyo\* (*Handong Global University*)

17:15-19:00 ThPoS-26.15  
**Walking on a Treadmill with Perturbations during Every Stride: Effects on Step Length and Step Width**  
 Li, Jinfeng\* (*University of Central Florida*); Huang, Helen J. (*University of Central Florida*)

17:15-19:00 ThPoS-26.16  
**Towards Contactless Interaction for Image-Guided Surgery Base on Hand Gesture Recognition**  
 Sun, Yu (*Hangzhou Normal Univ.*); Yuan, Zhenming (*Hangzhou Normal Univ.*); Sun, Xiaoyan\* (*Hangzhou Normal Univ.*)

July 19 Thursday

FrAT1: 08:00-09:30 Meeting Room 311  
**Brain-Computer Interface (III) (Theme 6)** (Oral Session)  
**Chair:** Weiland, James (*University of Michigan*)

08:00-08:15 FrAT1.1  
**Enhancement of Cortical Activation for Motor Imagery during BCI-FES Training**

Wang, Zhongpeng (*Tianjin Univ.*); Chen, Long (*Tianjin Univ.*); Yi, Weibo (*Tianjin Univ.*); Gu, Bin (*Tianjin Univ.*); Liu, Shuang (*Tianjin Univ.*); An, Xingwei (*Tianjin Univ.*); Xu, Minpeng (*Tianjin Univ.*); Qi, Hongzhi (*Tianjin Univ.*); He, Feng (*Tianjin Univ.*); Wan, Bai-kun (*Tianjin Univ.*); Ming, Dong\* (*Tianjin Univ.*)

08:15-08:30 FrAT1.2  
**Enhancing Detection of SSVEPs with Intermodulation Frequencies using Individual Calibration Data**

Chen, Xiaogang\* (*Institute of BioMedical Engineering, Chinese Academy of Medical Sciences*); Wang, Yijun (*Institute of Semiconductors, Chinese Academy of Sciences*); Zhang, Shangen (*Tsinghua Univ.*); Gao, Xiaorong (*Tsinghua Univ.*)

08:30-08:45 FrAT1.3  
**EEG Data Augmentation for Emotion Recognition using a Conditional Wasserstein GAN**  
 Luo, Yun (*Shanghai Jiao Tong University*); Lu, Bao-Liang\* (*Shanghai Jiao Tong University*)

08:45-09:00 FrAT1.4  
**Neural Decoding Forelimb Trajectory using Evolutionary Neural Networks with Feedback-Error-Learning Schemes**  
 Lin, Yu-Chieh (*National Yang Ming Univ.*); Chou, Chin (*National Yang-Ming Univ.*); Yang, Shih-Hung (*Feng Chia Univ.*); Lai, Hsin-Yi (*Zhejiang Univ.*); Lo, Yu-Chun (*Taipei Medical Univ.*); Chen, You-Yin\* (*National Chiao-Tung Univ.*)

09:00-09:15 FrAT1.5  
**Analyzing P300 Distractors for Target Reconstruction**  
 McDaniel, Jonathan\* (*DCS Corp*); Gordon, Stephen (*DCS Corp*); Solon, Amelia (*DCS Corp*); Lawhern, Vernon (*Human Research and Engineering Directorate, Army Research Lab*)

09:15-09:30 FrAT1.6  
**Spike Rate Estimation using Bayesian Adaptive Kernel Smoother (BAKS) and Its Application to Brain Machine Interfaces**  
 Ahmadi, Nur\* (*Imperial College London*); Constandinou, Timothy (*Imperial College of Science, Technology and Medicine*); Bouganis, Christos-Savvas (*Imperial College London*)

FrAT2: 08:00-09:30 Meeting Room 312  
**Neural Networks for Cardiac Signal Applications (Theme 1)** (Oral Session)  
**Chair:** Nguyen, Hung T. (*Swinburne University of Technology*)  
**Co-Chair:** Wang, Guijin (*Tsinghua University*)

08:00-08:15 FrAT2.1  
**Premature Ventricular Contraction Detection from Ambulatory ECG using Recurrent Neural Networks**  
 Zhou, Xue\* (*University of Aizu*); Zhu, Xin (*The University of Aizu*); Nakamura, Keijiro (*Toho University Ohashi Medical Center*); Mahito, Noro (*Toho University Sakura Medical Center*)

08:15-08:30 FrAT2.2  
**Bidirectional Recurrent Neural Network and Convolutional Neural Network (BiRCNN) for ECG Beat Classification**  
 Xie, Pengwei (*Tsinghua University*); Wang, Guijin\* (*Tsinghua University*); Zhang, Chenshuang (*Tsinghua University*); Chen, Ming (*Tsinghua University*); Yang, Huazhong (*Tsinghua University*); Lv, TingTing (*Beijing Tsinghua Changgung Hospital*); Sang, ZhenHua (*Beijing Tsinghua Changgung Hospital*); Zhang, Ping (*Beijing Tsinghua Changgung Hospital*)

08:30-08:45 FrAT2.3  
**Region Aggregation Network: Improving Convolutional Neural Network for ECG Characteristic Detection**  
 Chen, Ming (*Tsinghua University*); Wang, Guijin\* (*Tsinghua University*); Xie, Pengwei (*Tsinghua University*); Sang, ZhenHua (*Beijing Tsinghua Changgung Hospital*); Lv, TingTing (*Beijing Tsinghua Changgung Hospital*); Zhang, Ping (*Beijing Tsinghua Changgung Hospital*); Yang, Huazhong (*Tsinghua University*)

08:45-09:00 FrAT2.4  
**A Novel Deep Learning based Neural Network for Heartbeat Detection in Ballistocardiograph**  
 Lu, Han (*Nanyang Technological Univ.*); Zhang, Haihong (*Institute for Infocomm Research*); Lin, Zhiping\* (*Nanyang Technological Univ.*); Ng, Soon Huat (*Institute for Infocomm Research*)

09:00-09:15 FrAT2.5  
**Real-Time Cardiac Arrhythmia Classification using Memristor Neuromorphic Computing System**  
 Hassan, Amr Mahmoud\* (*Univ. of Pittsburgh*); Khalaf, Aya (*Cairo Univ.*); Sayed, Khaled (*Univ. of Pittsburgh*); Li, Hai (Helen) (*Duke Univ.*); Chen, Yiran (*Univ. of Pittsburgh*)

09:15-09:30 FrAT2.6  
**A Generative Modeling Approach to Limited Channel ECG Classification**  
 Rajan, Deepa\* (*IBM Research*); J. Thiagarajan, Jayaraman (*Lawrence Livermore National Lab*)

FrAT3: 08:00-09:30 Meeting Room 314  
**Deep Learning Imaging (II) (Theme 2)** (Oral Session)

08:00-08:15 FrAT3.1  
**Classification of Skin Lesions using an Ensemble of Deep Neural Networks**  
 Harangi, Balazs\* (*Univ. of Debrecen*); Hajdu, Andras (*Univ. of Debrecen*); Baran, Agnes (*Faculty of Informatics, Univ. of Debrecen*)

08:15-08:30 FrAT3.2  
**Using Octuplet Siamese Network for Osteoporosis Analysis on Dental Panoramic Radiographs**  
 Chu, Peng\* (*Temple University*); Bo, Chunjuan (*College of Electromechanical Engineering, Dalian Nationalities University, Dalian, China*); Xin, Liang (*School of Stomatology, Dalian Medical University, Dalian, China*); Yang, Jie (*Temple University*); Megalooikonomou, Vasileios (*University of Patras*); Yang, Fan (*Temple University*); Ling, Haibin (*Temple University*); Huang, Bingyao (*Temple University*); Li, Xinyi (*Temple University*)

08:30-08:45 FrAT3.3  
**Unsupervised Deep Learning Features for Lung Cancer Overall Survival Analysis**  
 Wang, Shuo (*Chinese Academy of Sciences*); Liu, Zhenyu (*Institute of Automation, Chinese Academy of Sciences*); Chen, Xi (*School of Information and Electronics, Beijing Institute of Technology*); Zhu, Yongbei (*Institute of Automation, Chinese Academy of Sciences*); Zhou, Hongyu (*Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences*); Tang, Zhenchao (*Shandong University, Weihai*); Wei, Wei (*Xi'an Polytechnic University*); Dong, Di (*Chinese Academy of Sciences*); Wang, Yunmei (*Dept. of Radiology, Henan Provincial People's Hospital*); Tian, Jie\* (*Chinese Academy of Sciences*)

08:45-09:00 FrAT3.4  
**Transfer Representation Learning using Inception-V3 for the Detection of Masses in Mammography**  
 Mednikov, Yuval (*BioMedical Engineering Dept., Ben-Gurion University of the Negev, Beer-Sheba*); Nehemia, Sapir (*BioMedical Engineering Dept., Ben-Gurion University of the Negev, Beer-Sheba*); Zheng, Bin (*University of Oklahoma*); Benzaquen, Oshra (*Dept. of Radiology, Rabin Medical Center, Petah-Tikva*); Lederman, Dror\* (*Holon Institute of Technology*)

09:00-09:15	FrAT3.5	<b>Controlled Synthesis of Dermoscopic Images via a New Color Labeled Generative Style Transfer Network to Enhance Melanoma Segmentation</b> Chi, Yucong ( <i>Duke University</i> ); Bi, Lei ( <i>University of Sydney</i> ); Kim, Jinman* ( <i>University of Sydney</i> ); Feng, Dagan ( <i>University of Sydney</i> ); Kumar, Ashnil ( <i>University of Sydney</i> )	08:15-08:30	FrAT5.2	<b>A Two-Level Food Classification System for People with Diabetes Mellitus using Convolutional Neural Networks</b> Kogias, Kleomenis ( <i>National Technical University of Athens</i> ); Andreadis, Ioannis ( <i>BioMedical Simulations and Imaging Lab</i> ); Dalakleidi, Kalliopi ( <i>National Technical University of Athens</i> ); Nikita, Konstantina* ( <i>National Technical University of Athens</i> )
09:15-09:30	FrAT3.6	<b>Heart Rate Estimation using Hermite Transform Video Magnification and Deep Learning</b> Moya-Albor, Ernesto ( <i>Univ. Panamericana</i> ); Brieva, Jorge* ( <i>Univ. Panamericana</i> ); Ponce, H. ( <i>Univ. Panamericana</i> ); Rivas-Scott, O.Y. ( <i>Univ. Panamericana</i> ); Gomez-Peña, C.A. ( <i>Univ. Panamericana</i> )	08:30-08:45	FrAT5.3	<b>The Analysis of Temperature Changes of the Saliva Traces Left on the Fur during Laboratory Rats Social Contacts</b> Mazur-Milecka, Magdalena ( <i>Gdańsk University of Technology</i> ); Ruminski, Jacek* ( <i>Gdansk University of Technology</i> )
FrAT4: 08:00-09:30	Meeting Room 315	<b>Minisymposia: Bio-Signal Authentication Technologies (892y7) (Minisymposium)</b> <b>Chair:</b> Kim, Jason ( <i>Korea Internet &amp; Security Agency</i> ) <b>Co-Chair:</b> Sanchez-Reillo, Raul ( <i>Carlos III University of Madrid, University Group for Identification Technologies (GUTI)</i> )	08:45-09:00	FrAT5.4	<b>MARBLES – Metal ARTifact based Landmark Enhanced Susceptibility Weighted Imaging for Interventional Device Localization in MRI</b> Dhulipala, Pranav Vaidik* ( <i>Texas A&amp;M University</i> ); Shi, Caiyun ( <i>Shenzhen Institutes of Advanced Technology, Lauterbur Research Center for BioMedical Imaging</i> ); Xie, Guoxi ( <i>Shenzhen Institutes of Advanced Technology, Lauterbur Research Center for BioMedical Imaging</i> ); Wang, Haifeng ( <i>Chinese Academy of Sciences</i> ); Ji, Jim Xiuquan ( <i>Texas A&amp;M University</i> )
08:00-08:15	FrAT4.1	<b>Fusing ECG and Fingerprints to Improve Recognition Performance and Robustness</b> Sanchez-Reillo, Raul* ( <i>Carlos III Univ. of Madrid, Univ. Group for Identification Tech. (GUTI)</i> ); Tirado-Martin, Paloma ( <i>Carlos III Univ. of Madrid, Univ. Group for Identification Tech. (GUTI)</i> ); Miranda-Escalada, Antonio ( <i>Carlos III Univ. of Madrid, Univ. Group for Identification Tech. (GUTI)</i> ); Bartolome-Molina, Pablo ( <i>Carlos III Univ. of Madrid, Univ. Group for Identification Tech. (GUTI)</i> )	09:00-09:15	FrAT5.5	<b>A Convolutional Neural Network based Auto-Positioning Method for Dental Arch in Rotational Panoramic Radiography</b> Du, Xin* ( <i>UEG Medical Imaging, Co., Ltd.</i> ); Chen, Yi ( <i>UEG Medical Imaging Equipment Co. Ltd., Shanghai, China</i> ); Zhao, Jun ( <i>Shanghai Jiao Tong University</i> ); Xi, Yan ( <i>Rensselaer Polytechnic Institute</i> )
08:15-08:30	FrAT4.2	<b>Telebiometric Personal Authentication Technologies using Bio-Signals</b> Lee, Saewoom* ( <i>KISA (Korea Internet &amp; Security Agency)</i> ); Kim, Jason ( <i>Korea Internet &amp; Security Agency</i> )	FrAT6: 08:00-09:30	Meeting Room 316B	<b>Neural Signal Processing (II) (Theme 6) (Oral Session)</b>
08:30-08:45	FrAT4.3	<b>Analysis of Bio-Signal Sensor Requirements for Personal Authentication</b> Kwon, Young-Bin* ( <i>Chung-Ang University</i> ); Kim, Jason ( <i>Korea Internet &amp; Security Agency</i> )	08:00-08:15	FrAT6.1	<b>Estimation of Neural Inputs and Detection of Saccades and Smooth Pursuit Eye Movements by Sparse Bayesian Learning</b> Wadehn, Federico* ( <i>ETH Zurich</i> ); Loeliger, Hans-Andrea ( <i>ETH Zurich</i> ); Weber, Thilo ( <i>ETH Zurich</i> ); Mack, David J. ( <i>University Hospital Zurich</i> )
08:45-09:00	FrAT4.4	<b>ECG-Based Human Authentication Algorithm for Wrist-Worn Device</b> Kim, Jeehoon ( <i>Seoul National University</i> ); Sung, Dongsuk ( <i>Seoul National University</i> ); Kim, Jason ( <i>Korea Internet &amp; Security Agency</i> ); Park, Kwang S.* ( <i>Seoul National University</i> )	08:15-08:30	FrAT6.2	<b>Extraction of Muscle Synergies in Spinal Cord Injured Patients</b> Cheng, Richard* ( <i>California Institute of Technology</i> ); Burdick, Joel W. ( <i>Caltech</i> )
09:00-09:15	FrAT4.5	<b>Secure Transmission Protocol for ECG and PPG z Ultra-Low-Power Wireless Applications</b> Caras, John* ( <i>Telebiometrics Inc.</i> )	08:30-08:45	FrAT6.3	<b>Independent Component Analysis for Fully Automated Multi-Electrode Array Spike Sorting</b> Buccino, Alessio Paolo* ( <i>Univ. of Oslo</i> ); Hagen, Espen ( <i>Univ. of Oslo</i> ); Einevoll, Gaute ( <i>Norwegian Univ. of Life Sciences</i> ); Häfliger, Philipp ( <i>Univ. of Oslo, Dept. of Informatics</i> ); Cauwenberghs, Gert ( <i>Univ. of California San Diego</i> )
FrAT5: 08:00-09:30	Meeting Room 316A	<b>New Imaging Methods and Applications (I) (Theme 2) (Oral Session)</b> <b>Chair:</b> Gu, Xuejun ( <i>University of Texas Southwestern Medical Center</i> ) <b>Co-Chair:</b> Gonzalez Ballester, Miguel Angel ( <i>ICREA &amp; Universitat Pompeu Fabra</i> )	08:45-09:00	FrAT6.4	<b>An Information-Theoretic Measure of Multiscale Causality for Spike-Field Activity</b> Wang, Chuanmeizhi* ( <i>University of Southern California</i> ); Shanechi, Maryam ( <i>University of Southern California</i> )
08:00-08:15	FrAT5.1	<b>Fetal MRI Synthesis via Balanced Auto-Encoder based Generative Adversarial Networks</b> Torrents-Barrena, Jordina ( <i>Univ. Pompeu Fabra</i> ); Piella, Gemma ( <i>Univ. Pompeu Fabra</i> ); Masoller, Narcis ( <i>Fetal i+D Fetal Medicine Research Center, BCNatal - Barcelona Center for Maternal-Fetal and Neonatal Medicine (Hospital Clínic a); Gratacós, Eduard (Fetal i+D Fetal Medicine Research Center, BCNatal - Barcelona Center for Maternal-Fetal and Neonatal Medicine (Hospital Clínic a); Eixarch, Elisenda (BCNatal, Hospital Clínic, Hospital Sant Joan de Déu); Ceresa, Mario (Univ. Pompeu Fabra); Gonzalez Ballester, Miguel Angel* (ICREA &amp; Univ. Pompeu Fabra)</i>	09:00-09:15	FrAT6.5	<b>Estimation of Functional Dependence in High-Dimensional Spike-Field Activity</b> Bighamian, Ramin* ( <i>University of Southern California</i> ); Shanechi, Maryam ( <i>University of Southern California</i> )

09:15-09:30	FrAT6.6	08:15-08:30	FrAT8.2
<b>Imputing Missing Values in EEG with Multivariate Autoregressive Models</b> Kanemura, Atsunori* ( <i>National Institute of Advanced Industrial Science and Technology (AIST)</i> ); Cheng, Yuhsein ( <i>Tokyo Metropolitan College of Industrial Technology</i> ); Kaneko, Takumi ( <i>Tokyo Metropolitan College of Industrial Technology</i> ); Nozawa, Kento ( <i>National Institute of Advanced Industrial Science and Technology (AIST)</i> ); Fukunaga, Shuichi ( <i>Tokyo Metropolitan College of Industrial Technology</i> )		<b>Preliminary Study of Time to Recovery of Rat Sciatic Nerve from High Frequency Alternating Current Nerve Block</b> Rapeaux, Adrien* ( <i>Imperial College London</i> ); Brunton, Emma Kate ( <i>Newcastle University</i> ); Nazarpour, Kianoush ( <i>Newcastle University</i> ); Constantinou, Timothy ( <i>Imperial College of Science, Technology and Medicine</i> )	
<b>FrAT7: 08:00-09:30</b> Meeting Room 316C <b>Signal Processing and Classification of Electromyographic Signals (Theme 1)</b> (Oral Session) <b>Chair:</b> Ramakrishnan, Swaminathan ( <i>IIT Madras, India</i> ) <b>Co-Chair:</b> Li, Guanglin ( <i>Shenzhen Institutes of Advanced Technology</i> )		08:30-08:45 FrAT8.3 <b>Capacitive Micromachined Ultrasonic Transducer (CMUT) Ring Array for Transcranial Ultrasound Neuromodulation</b> Kim, Hyunggug ( <i>KAIST</i> ); Kim, Seongyeon ( <i>Korea Advanced Institute of Science and Tech. (KAIST)</i> ); Lee, Hyunjo Jenny* ( <i>Korea Advanced Institute of Science and Tech. (KAIST)</i> )	
08:00-08:15 FrAT7.1 <b>Transfer Learning Over Time and Placement in Wearable Myoelectric Control Systems</b> Kanoga, Suguru* ( <i>National Institute of Advanced Industrial Science and Technology (AIST)</i> ); Matsuoka, Masashi ( <i>Keio University</i> ); Kanemura, Atsunori ( <i>National Institute of Advanced Industrial Science and Technology (AIST)</i> )		08:45-09:00 FrAT8.4 <b>Improved Target Specificity of Transcranial Focused Ultrasound Stimulation (TFUS) using Double-Crossed Ultrasound Transducers</b> Kim, Seongyeon* ( <i>Korea Advanced Institute of Science and Technology (KAIST)</i> ); Kim, Hyunggug ( <i>KAIST</i> ); Shim, Chaeyun ( <i>Korea Advanced Institute of Science and Technology (KAIST)</i> ); Lee, Hyunjo Jenny ( <i>Korea Advanced Institute of Science and Technology (KAIST)</i> )	
08:15-08:30 FrAT7.2 <b>Improved MUP Template Estimation using Local Time Warping and Kernel Weighted Averaging</b> Hamilton-Wright, Andrew* ( <i>Mount Allison University</i> ); Stashuk, Daniel William ( <i>University of Waterloo</i> )		09:00-09:15 FrAT8.5 <b>Bayesian Optimization of Asynchronous Distributed Microelectrode Stimulation for Spatial Memory</b> Ashmaig, Omer ( <i>Emory Univ.</i> ); Connolly, Mark ( <i>Emory Univ.</i> ); Gross, Robert ( <i>Emory Univ.</i> ); Mahmoudi, Babak* ( <i>Emory Univ.</i> )	
08:30-08:45 FrAT7.3 <b>EMG-Based Real Time Facial Gesture Recognition for Stress Monitoring</b> Orguc, Sirma* ( <i>Massachusetts Institute of Technology</i> ); Khurana, Harneet Singh ( <i>Massachusetts Institute of Technology</i> ); Stankovic, Konstantina M. ( <i>Harvard Medical School, Massachusetts Eye and Ear Infirmary</i> ); Lee, Hae-Seung ( <i>Massachusetts Institute of Technology</i> ); Chandrakasan, Anantha P. ( <i>Massachusetts Institute of Technology</i> )		09:15-09:30 FrAT8.6 <b>Noninvasive Detection of Motor-Evoked Potentials in Response to Brain Stimulation Below the Noise Floor – How Weak can a Stimulus Be and Still Stimulate</b> Goetz, Stefan* ( <i>Duke University</i> ); Zhongxi, Li ( <i>Duke University</i> ); Peterchev, Angel V ( <i>Duke University</i> )	
<b>FrAT9: 08:00-09:30</b> Meeting Room 318B <b>Time-Frequency Analysis of Cardiovascular Signals (Theme 1)</b> (Oral Session) <b>Chair:</b> Behbehani, Khosrow ( <i>University of Texas at Arlington</i> )		08:00-08:15 FrAT9.1 <b>Real-Time ECG Delineation with Randomly Selected Wavelet Transform Feature and Random Walk Estimation</b> Xia, Zhouhui ( <i>Beijing Univ. of Posts and Telecommunications</i> ); Wang, Guijin ( <i>Tsinghua Univ.</i> ); Fu, Dapeng ( <i>Beijing Zhong Guan Cun Hospital (Chinese Academy of Sciences Zhong Guan Cun Hospital)</i> ); Wang, Haiqing* ( <i>Beijing Zhong Guan Cun Hospital (Chinese Academy of Sciences Zhong Guan Cun Hospital)</i> ); Chen, Ming ( <i>Tsinghua Univ.</i> ); Xie, Pengwei ( <i>Tsinghua Univ.</i> ); Yang, Huazhong ( <i>Tsinghua Univ.</i> )	
08:45-09:00 FrAT7.4 <b>Real-Time Hand Motion Recognition using sEMG Patterns Classification</b> Crepin, Roxane* ( <i>Laval University</i> ); Cheikh Latyr, Fall ( <i>Université Laval</i> ); Mascaret, Quentin ( <i>Laval University</i> ); Gosselin, Clément ( <i>Université Laval</i> ); Campeau-Lecours, Alexandre ( <i>Université Laval</i> ); Gosselin, Benoit ( <i>Laval University</i> )		08:15-08:30 FrAT9.2 <b>Parametric Modeling of Electrocardiograms using Particle Swarm Optimization</b> Peng, Tommy* ( <i>University of Auckland</i> ); Trew, Mark L. ( <i>University of Auckland</i> ); Malik, Avinash ( <i>University of Auckland</i> )	
09:00-09:15 FrAT7.5 <b>Analysis of Sequential Visibility Motifs in Isometric Surface Electromyography Signals in Fatiguing Condition</b> Makaram, Navaneethakrishna* ( <i>Indian Institute of Technology Madras</i> ); Ramakrishnan, Swaminathan ( <i>IIT Madras, India</i> )		08:30-08:45 FrAT9.3 <b>Daily Stress Monitoring using Heart Rate Variability of Bathtub ECG Signals</b> Li, Tianhui* ( <i>University of Aizu</i> ); Chen, Ying ( <i>University of Aizu</i> ); Chen, Wenxi ( <i>University of Aizu</i> )	
<b>FrAT8: 08:00-09:30</b> Meeting Room 318A <b>Neural Stimulation (I) (Theme 6)</b> (Oral Session) <b>Chair:</b> Lee, Hyunjo Jenny ( <i>Korea Advanced Institute of Science and Technology (KAIST)</i> )		08:45-09:00 FrAT9.4 <b>Improved Heart Rate Tracking using Multiple Wrist-Type Photoplethysmography during Physical Activities</b> Zhu, Lianning ( <i>1990</i> ); Du, Dongping* ( <i>Texas Tech University</i> )	
08:00-08:15 FrAT8.1 <b>Long-Term Depression Learning in Spinal Cord Networks</b> Baker, Zachary* ( <i>George Mason University</i> ); Therrien, Karen ( <i>George Mason University</i> ); LaFosse, Paul ( <i>George Mason University</i> ); Noor, Abdul ( <i>George Mason University</i> ); Peixoto, Nathalia ( <i>George Mason University</i> )			

09:00-09:15 FrAT9.5  
**Classification of Heart Diseases based on ECG Signals using Long Short-Term Memory**  
 Liu, Ming (*Hanyang University ERICA*);  
 Kim, Younghoon\* (*Hanyang University*)

09:15-09:30 FrAT9.6  
**Mathematical Modeling of Arterial Blood Pressure using Photo-Plethysmography Signal in Breath-Hold Maneuver**  
 Soltan zadi, Armin (*University of Texas at Arlington*); Alex, Raichel (*University of Texas Arlington*); Zhang, Rong (*University of Texas Southwestern Medical Center at Dallas*); Watenpau, Donald (*Sleep Consultants Inc.*); Behbehani, Khosrow\* (*University of Texas at Arlington*)

FrAT10: 08:00-09:30 Meeting Room 319A  
**Ophthalmic and Retinal Imaging (I) (Theme 2)** (Oral Session)  
**Chair:** Chan, Kevin C. (*New York University*)  
**Co-Chair:** Palaniappan, Kannappan (*University of Missouri-Columbia*)

08:00-08:15 FrAT10.1  
**Automated Diabetic Macular Edema (DME) Analysis using Fine Tuning with Inception-Resnet-V2 on OCT Images**  
 Kamble, Ravi (*SGGS India*); Chan, Genevieve C Y (*Universiti Teknologi Petronas*); Perdomo Charry, Oscar Julian (*Universidad Nacional de Colombia*); Kokare, Manesh (*SGGSIE& T, Nanded, India*); Müller, Henning (*University of Applied Sciences Western Switzerland (HES-SO)*); Meriaudeau, Fabrice\* (*Universiti Teknologi Petronas, Malaysia*); González, Fabio (*Universidad Nacional de Colombia*)

08:15-08:30 FrAT10.2  
**Are There Categories of Corneal Shapes?**  
 Bouazizi, Hala\* (*University of Montreal*); Brunette, Isabelle (*University of Montréal*); Meunier, Jean (*Université de Montreal*)

08:30-08:45 FrAT10.3  
**Multi-Cell Multi-Task Convolutional Neural Networks for Diabetic Retinopathy Grading**  
 Zhou, Kang\* (*ShanghaiTech University*); Gu, Zaiwang (*Ningbo Institute of Materials Technology and Engineering; Shanghai University*); Liu, Wen (*ShanghaiTech University*); Luo, Weixin (*ShanghaiTech University*); Cheng, Jun (*Institute of Biomedical Engineering, Chinese Academy of Sciences*); Gao, Shenghua (*ShanghaiTech University*); Liu, Jiang (*Ningbo Institute of Materials Technology and Engineering, CAS*)

08:45-09:00 FrAT10.4  
**Monocular Retinal Depth Estimation and Joint Optic Disc and Cup Segmentation using Adversarial Networks**  
 M Shankaranarayana, Sharath\* (*Indian Institute of Technology Madras*); Ram, Keerthi (*IIT Madras*); Mitra, Kaushik (*Indian Institute of Technology Madras*); Sivaprakasam, Mohanasankar (*Indian Institute of Technology Madras*)

09:00-09:15 FrAT10.5  
**Detection of Diabetes by Macrovascular Tortuosity of Superior Bulbar Conjunctiva**  
 Kondarage, Achintha Iroshan\* (*University of Moratuwa*); De Zoysa, Dulara Nawanath (*University of Moratuwa*); Warnapura, Chamari (*National Diabetes Center, Rajagiriya, Sri Lanka*); Wijesuriya, Mahen (*National Diabetes Center, Rajagiriya, Sri Lanka*); Jayasinghe, Saroj (*Dept. of Clinical Medicine, University of Colombo*); Nanayakkara, Nuwan Dayananda (*University of Moratuwa*); De Silva, Anjula (*University of Moratuwa*)

09:15-09:30 FrAT10.6  
**Sensitivity of Cross-Trained Deep CNNs for Retinal Vessel Extraction**  
 Kassim, Yasmin M.\* (*University of Missouri Columbia*); Palaniappan, Kannappan (*University of Missouri-Columbia*)

FrAT11: 08:00-09:30 Meeting Room 319B  
**Neurological Disorders (I) (Theme 6)** (Oral Session)

08:00-08:15 FrAT11.1  
**Anatomical Biomarkers for Adolescent Major Depressive Disorder from Diffusion Weighted Imaging using SVM Classifier**  
 Chu, Shu-Hsien\* (*University of Minnesota*); Lenglet, Christophe (*University of Minnesota*); Westlund Schreiner, Melinda (*University of Minnesota*); Klimes-Dougan, Bonnie (*University of Minnesota*); Cullen, Kathryn R. (*University of Minnesota*); Parhi, Keshab (*University of Minnesota*)

08:15-08:30 FrAT11.2  
**A Quantitative Model for Estimating the Scale of Photochemically Induced Ischemic Stroke**  
 Yao, Zhaojie\* (*University of Washington, Seattle*); Yazdan-Shahmorad, Azadeh (*University of Washington*)

08:30-08:45 FrAT11.3  
**Visual Displacement Perception in Parkinson's Disease Analyzed using a Computer-Generated Graphical Tool**  
 Bernardinis, Matthew\* (*Univ. of Western Ontario (UWO)*); Atashzar, Seyed Farokh (*ECE Dept. at Western Univ. (UWO)*); and Canadian Surgical Technologies & Advanced Robotics); Jog, Mandar (*Univ. of Western Ontario - London Health Sciences Centre*); Patel, Rajni (*London Health Sciences Centre*)

08:45-09:00 FrAT11.4  
**Altered Connectivity in Autistic Adults during Complex Facial Emotion Recognition: A Study of EEG Imaginary Coherence**  
 Black, Melissa H (*Curtin University, School of Occupational Therapy, Social Work and Speech Pathology*); Almabruk, Tahani A. A. (*Omar Al-Mukhtar University*); Albrecht, Matt A (*Curtin University, Curtin Health Innovation Research Institute, School of Public Health*); Chen, Nigel, T (*Curtin University, School of Occupational Therapy, Social Work and Speech Pathology*); Lipp, Ottmar, V (*Curtin University, School of Psychology*); Tan, Tele\* (*Curtin University*); Bölte, Sven (*Karolinska Institutet*); Girdler, Sonya (*Curtin University*)

09:00-09:15 FrAT11.5  
**Deep Learning Enabled Automatic Abnormal EEG Identification**  
 Roy, Subhrajit\* (*IBM Research*); Kiral-Kornek, Filiz Isabell (*IBM Research Australia*); Harrer, Stefan (*IBM Research*)

09:15-09:30 FrAT11.6  
**Design of Soft Robotic Actuation for Supporting Eyelid Closure Movement**  
 Kozaki, Yuta\* (*University of Tsukuba*); Matsushiro, Naoki (*Osaka Police Hospital*); Suzuki, Kenji (*University of Tsukuba*)

FrAT12: 08:00-09:30 Meeting Room 321A  
**Baroreflex (Theme 5)** (Oral Session)  
**Chair:** Porta, Alberto (*Università degli Studi di Milano*)

08:00-08:15 FrAT12.1  
**Modified Sequence Method to Assess Baroreflex Sensitivity in Rats**  
 Schultz, James\* (*Univ. of Minnesota*); Annoni, Elizabeth (*Univ. of Minnesota*); Tolkacheva, Elena (*Univ. of Minnesota*)

08:15-08:30 FrAT12.2  
**Effects of Instructed Meditation Augmented by Computer-Rendered Artificial Virtual Environment on Heart Rate Variability**  
 Kazzi, Christina (*Macquarie University*); Blackmore, Conner (*Macquarie University*); Shirbani, Fatemeh (*Macquarie University, Faculty of Medicine and Health Sciences*); Tan, Isabella (*Macquarie University*); Butlin, Mark (*Macquarie University*); Avolio, Alberto P\* (*Macquarie University*); Barin, Edward (*Macquarie University*)

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- 08:30-08:45 FrAT12.3  
**Variations of Heart Rate, Pulse Arrival Time and Blood Pressure in a Versatile Laboratory Protocol**  
 Ahmaniemi, Teemu\* (*Nokia Technologies*); Rajala, Satu (*Nokia Technologies*); Lindholm, Harri (*Nokia Technologies*); Taipalus, Tapio (*Nokia Technologies*); Müller, Kiti (*Nokia Bell Labs*)
- 08:45-09:00 FrAT12.4  
**Baroreflex Sensitivity during Listening to Music Computed from Time Domain Sequences and Frequency Domain Transfer Function**  
 Biswal, Dibyajyoti\* (*University of Kentucky*); Mollakazemi, Mohammad Javad (*University of Kentucky*); Thyagarajan, Sridevi (*University of Kentucky*); Evans, Joyce (*University of Kentucky*); Patwardhan, Abhijit (*University of Kentucky*)
- 09:00-09:15 FrAT12.5  
**Comparison of Different Strategies to Assess Cardiac Baroreflex Sensitivity based on Transfer Function Technique in Patients Undergoing General Anesthesia**  
 Bari, Vlasta\* (*IRCCS PoliClinico San Donato*); Vaini, Emanuele (*IRCCS PoliClinico San Donato*); De Maria, Beatrice (*IRCCS Fondazione Salvatore Maugeri, Milano*); Cairo, Beatrice (*Università degli Studi di Milano*); Pistuddi, Valeria (*Dept. of Cardiothoracic, Vascular Anesthesia and Intensive Care, IRCCS PoliClinico San Donato, Milan*); Ranucci, Marco (*Dept. of Cardiothoracic, Vascular Anesthesia and Intensive Care, IRCCS PoliClinico San Donato, Milan*); Porta, Alberto (*Università degli Studi di Milano*)
- 09:15-09:30 FrAT12.6  
**The Role of Baroreflex Sensitivity in Acute Hypotensive Episodes Prediction in the Intensive Care Unit**  
 Angelotti, Giovanni (*Politecnico di Milano*); Morandini, Pierandrea (*Politecnico di Milano*); Lehman, Li-wei (*Massachusetts Institute of Technology*); Mark, Roger (*Massachusetts Institute of Technology*); Barbieri, Riccardo\* (*Politecnico di Milano*)
- FrAT13: 08:00-09:30 Meeting Room 321B  
**Lower Limb Exoskeleton (Theme 8) (Oral Session)**  
**Chair:** Dhaher, Yasin (*Northwestern University*)
- 08:00-08:15 FrAT13.1  
**FES Coupled with a Powered Exoskeleton for Cooperative Muscle Contribution in Persons with Paraplegia**  
 Murray, Spencer\* (*Parker Hannifin*); Farris, Ryan (*Vanderbilt University*); Goldfarb, Michael (*Vanderbilt University*); Hartigan, Clare (*Shepherd Center*); Kandilakis, Casey (*Shepherd Center*); Truex, Don (*Vanderbilt University*)
- 08:15-08:30 FrAT13.2  
**Effects of Exoskeleton Training Intervention on Net Loading Force in Chronic Spinal Cord Injury**  
 Husain, Syed (*Kessler Foundation*); Ramanujam, Arvind (*Kessler Foundation*); Momeni, Kamyar (*Kessler Foundation*); Forrest, Gail F\* (*Kessler Foundation*)
- 08:30-08:45 FrAT13.3  
**A Velocity-Based Flow Field Control Approach for Reshaping Movement of Stroke-Impaired Individuals with a Lower-Limb Exoskeleton**  
 Martinez Guerra, Andres\* (*Vanderbilt University*); Lawson, Brian (*Vanderbilt University*); Goldfarb, Michael (*Vanderbilt University*)
- 08:45-09:00 FrAT13.4  
**Repeatability of EMG Activity during Exoskeleton Assisted Walking in Children with Cerebral Palsy: Implications for Real Time Adaptable Control**  
 Bulea, Thomas C.\* (*National Institutes of Health*); Lerner, Zachary (*Northern Arizona University*); Damiano, Diane (*National Institutes of Health*)
- 09:00-09:15 FrAT13.5  
**Mechanisms for Improving Walking Speed after Longitudinal Powered Robotic Exoskeleton Training for Individuals with Spinal Cord Injury**  
 Ramanujam, Arvind (*Kessler Foundation*); Momeni, Kamyar (*Kessler Foundation*); Husain, Syed (*Kessler Foundation*); Augustine, Jonathan (*Kessler Foundation*); Garbarini, Erica (*Kessler Foundation*); Barrance, Peter (*Kessler Foundation*); Spungen, Ann (*James J. Peters Veterans Affairs Medical Center, Bronx, NY*); Asselin, Pierre (*James J. Peters Veterans Affairs Medical Center, Bronx, NY*); Knezevic, Steven (*James J. Peters Veterans Affairs Medical Center, Bronx, NY*); Forrest, Gail F\* (*Kessler Foundation*)
- 09:15-09:30 FrAT13.6  
**Robotic Exoskeleton Gait Training for Inpatient Rehabilitation in a Young Adult with Traumatic Brain Injury**  
 Nolan, Karen J.\* (*Kessler Foundation*); Karunakaran, Kiran (*NJIT, Kessler Foundation*); Ehrenberg, Naphtaly (*NJIT*); Kesten, Adam (*Kessler Institute for Rehabilitation*)
- FrAT14: 08:00-09:30 Meeting Room 322AB  
**Ambulatory and Diagnostic Systems and Devices (I) (Theme 9) (Oral Session)**  
**Chair:** Smith, Michael (*University Of Calgary*)  
**Co-Chair:** Farajidavar, Aydin (*New York Institute of Technology*)
- 08:00-08:15 FrAT14.1  
**Inverse Kinematic Assessment of Rehabilitative Therapy in Children using Orthotics**  
 Murphy, Michael (*Loyola Univ. Stritch School of Medicine*); Rammer, Jacob (*Marquette Univ.*); Vinehout, Kaleb\* (*Marquette Univ.*); Caballero, Meghan (*Medical College of Wisconsin*); Cornwell, Christy (*Bay Cliff Health Camp*); Fritz, Jessica (*Marquette Univ.*); Harris, Gerald (*Marquette Univ.*)
- 08:15-08:30 FrAT14.2  
**A Low Cost, Handheld E-Nose for Renal Diseases Early Diagnosis**  
 Le Maout, Paul\* (*IMT Atlantique*); Laquintinie, Pierre (*IMT Atlantique*); Lahuec, Cyril (*TELECOM Bretagne, France*); Seguin, Fabrice (*Institut Mines Telecom Atlantique*); Wojkiewicz, Jean-Luc (*IMT Lille Douai*); Redon, Nathalie (*IMT Lille Douai*); Dupont, Laurent (*IMT Atlantique*)
- 08:30-08:45 FrAT14.3  
**Evaluation of Dynamic Time Warp Barycenter Averaging (DBA) for Its Potential in Generating a Consensus Nanopore Signal for Genetic and Epigenetic Sequences**  
 Chan, Rachel S. L. (*Electrical and Computer Engineering, University of Calgary*); Gordon, Paul (*Bioinformatics, Alberta Children's Hospital Research Institute, University of Calgary*); Smith, Michael\* (*University of Calgary*)
- 08:45-09:00 FrAT14.4  
**Towards the Ambulatory Assessment of Movement Quality in Stroke Survivors using a Wrist-Worn Inertial Sensor**  
 Lee, Sunghoon Ivan\* (*Univ. of Massachusetts Amherst*); Jung, Hee-Tae (*Univ. of Massachusetts Amherst*); Joon Woo, Park (*Daegu Univ.*); Jeong, Jugyeong (*Heeeyeon Hospital*); Ryu, Taekyeong (*Heeeyeon Hospital*); Kim, Yangsoo (*Heeeyeon Hospital*); dos Santos, Vitor Sotero (*Institute of Physics, Lab of Biosystems, Univ. Federal da Bahia*); Miranda, Jose Garcia Vivas (*Institute of Physics, Lab of Biosystems, Univ. Federal da Bahia*); Daneault, Jean-Francois (*Harvard Medical School*)
- 09:00-09:15 FrAT14.5  
**A Configurable Portable System for Ambulatory Monitoring of Gastric Bioelectrical Activity and Delivering Electrical Stimulation**  
 Alrofati, Wahib (*New York Institute of Tech.*); Javan Khoshkholgh, Amir (*New York Institute of Tech.*); Bao, Rui (*New York Institute of Tech.*); Kang, Qi (*New York Institute of Tech.*); Abumahfouz, Nadi (*New York Institute of Tech.*); Farajidavar, Aydin\* (*New York Institute of Tech.*)

09:15-09:30 FrAT14.6  
**A Novel Diagnostic System for Infectious Diseases using Solid-State Nanopore Devices**  
 Miyagawa, Takuya\* (*Toshiba Corp.*); Hongo, Sadato (*Toshiba Corp.*); Nakamura, Naofumi (*Toshiba Corp.*); Horiguchi, Yukichi (*Tokyo Medical and Dental University*); Miyahara, Yuji (*Tokyo Medical and Dental University, Institute of Biomaterials and Bioengineering*); Shibata, Hideki (*Toshiba Corp.*)

FrAT15: 08:00-09:30 Meeting Room 323A  
**Minisymposia: Addressing the Need for New Neuro-Technologies with Innovative Optical Approaches (pgupc)** (Minisymposium)  
**Chair:** Choi, Bernard (*University of California, Irvine*)

08:00-08:15 FrAT15.1  
**Low Power 2-Photon Microscopy for in Vivo Imaging**  
 Sadegh, Sanaz\* (*University of California San Diego*)

08:15-08:30 FrAT15.2  
**Next-Generation SCAPE Microscopes for High-Speed Neuroimaging**  
 Hillman, Elizabeth M. C.\* (*Columbia University*); Voleti, Venkatakaushik (*Columbia University*); Li, Wenzhe (*Columbia University*); Patel, Kripa (*Columbia University*); Yu, Hang (*Columbia University*); Perez-Campos, Citali (*Columbia University*); Lee, Grace Sooyeon (*Columbia University*)

08:30-08:45 FrAT15.3  
**New Optical Tools for Chronic Imaging of Neurovascular Remodeling**  
 Dunn, Andrew\* (*University of Texas at Austin*)

08:45-09:00 FrAT15.4  
**Emergence of Optical Approaches to Address Unmet Clinical Needs in Acute Brain Injury**  
 Akbari, Yama\* (*University of California, Irvine*); Crouzet, Christian (*University of California, Irvine*); Wilson, Robert (*University of California, Irvine*); Bazrafkan, Afsheen (*University of California, Irvine*); Maki, Niki (*University of California, Irvine*); Tromberg, Bruce (*University of California, Irvine*); Choi, Bernard (*University of California, Irvine*)

FrAT16: 08:00-09:30 Meeting Room 323B  
**General and Theoretical Informatics – Algorithms (I) (Theme 10)** (Oral Session)

08:00-08:15 FrAT16.1  
**Integrating Signal Processing Modules of Hearing Aids into a Real-Time Smartphone App**  
 Chowdhury, Tahsin Ahmed (*University of Texas at Dallas*); Sehgal, Abhishek (*University of Texas at Dallas*); Kehtarnavaz, Nasser\* (*University of Texas at Dallas*)

08:15-08:30 FrAT16.2  
**Towards Non-Invasive Labour Detection: A Free-Living Evaluation**  
 Altini, Marco\* (*Bloom Technologies, USA - ACTLab, University of Passau, DE*); Rossetti, Elisa (*Bloom Technologies*); Rooijakkers, Michael Johannes (*Eindhoven University of Technology*); Penders, Julien (*Bloomlife*)

08:30-08:45 FrAT16.3  
**Estimating Running Performance Combining Non-Invasive Physiological Measurements and Training Patterns in Free-Living**  
 Altini, Marco\* (*Bloom Technologies, USA - ACTLab, University of Passau, DE*); Amft, Oliver (*Friedrich-Alexander Universität Erlangen-Nürnberg (FAU)*)

08:45-09:00 FrAT16.4  
**A Fast Respiratory Rate Estimation Method using Joint Sparse Signal Reconstruction based on Regularized Sparsity Adaptive Matching Pursuit**  
 Han, Zhongyi (*Beijing Institute of Technology*); Wang, Qun\* (*Beijing Institute of Technology*); Yue, Liang (*Beijing Institute of Technology*); Liu, Zhiwen (*Beijing Institute of Technology*)

09:00-09:15 FrAT16.5  
**Near-Infrared Spectroscopy Studies on TBI Patients with Modified Multiscale Entropy Analysis**  
 Wang, Hengbing (*Fudan University*); Ren, Haoran\* (*Fudan University*); Jiang, Xinyu (*Fudan University*); Sun, Yirui (*Huashan Hospital of Fudan University*); Wang, Zeyu (*Fudan University*); Chen, Wei (*Fudan University*)

09:15-09:30 FrAT16.6  
**Features Extraction for Cuffless Blood Pressure Estimation by Autoencoder from Photoplethysmography**  
 Shimazaki, Shota\* (*Aichi Prefectural Univ.*); Bhuiyan, Md. Shoaib (*Suzuka Univ. of Medical Science*); Kawanaka, Haruki (*Aichi Prefectural Univ.*); Oguri, Koji (*Aichi Prefectural Univ.*)

FrAT17: 08:00-09:30 Meeting Room 323C  
**Sensors for Long Term Monitoring (Theme 7)** (Oral Session)

08:00-08:15 FrAT17.1  
**Respiratory and Cardiac Monitoring at Night using a Wrist Wearable Optical System**  
 Renevey, Philippe (*CSEM*); Delgado-Gonzalo, Ricard\* (*CSEM*); Lemkaddem, Alia (*CSEM*); Verjus, Christophe (*CSEM*); Combertaldi, Selina (*Dept. of Psychology of University of Fribourg*); Rasch, Björn (*Dept. of Psychology of University of Fribourg*); Leeners, Brigitte (*UniversitätsSpital Zürich*); Dammeier, Franziska (*Ava*); Kübler, Florian (*Ava*)

08:15-08:30 FrAT17.2  
**Wearable Textile based on Silver Plated Knitted Sensor for Respiratory Rate Monitoring**  
 Molinaro, Nunzia (*Università Campus Bio-Medico di Roma*); Massaroni, Carlo\* (*Università Campus Bio-Medico di Roma*); Lo Presti, Daniela (*Campus Bio-Medico di Roma University*); Saccomandi, Paola (*University Campus Bio-Medico of Rome*); Di Tomaso, Giulia (*Feinstein Institute for Medical Research, Northwell Health*); Zollo, Loredana (*Università Campus Bio-Medico*); Perego, Paolo (*Politecnico di Milano*); Andreoni, Giuseppe (*Politecnico di Milano*); Schena, Emiliano (*University of Rome Campus Bio-Medico*)

08:30-08:45 FrAT17.3  
**Effect of Compression Garments on Cardiovascular Function during Recovery Phase**  
 Nguyen, Thi Nhu Lan\* (*Univ. of Technology Sydney*); David, Eager (*UTS*); Nguyen, Hung T. (*Swinburne Univ. of Technology*)

08:45-09:00 FrAT17.4  
**E-BiInSn Enhanced Rigidity Alterable Artificial Bandage**  
 Yao, Youyou (*Tsinghua University*); Wang, Hongzhang (*Tsinghua University*); Yang, Xiaohu (*University of Chinese Academy of Sciences*); Liu, Jing\* (*Tsinghua University*)

09:00-09:15 FrAT17.5  
**An Ultra-Miniaturized Near Infrared Spectroscopy System to Assess Sleep Apnea in Children with Down Syndrome**  
 Beppler, Eric (*North Carolina State University*); Dieffenderfer, James (*North Carolina State University*); Songkakul, Tanner (*1991*); Krystal, Andrew (*Duke University*); Bozkurt, Alper\* (*North Carolina State University*)

09:15-09:30 FrAT17.6  
**Accelerometer based Active Snore Detection for Behavioral Modification**  
 Beppler, Eric (*North Carolina State Univ.*); Dieffenderfer, James (*North Carolina State Univ.*); Hood, Charles (*North Carolina State Univ.*); Bozkurt, Alper\* (*North Carolina State Univ.*)

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FrAT18: 08:00-09:30 Meeting Room 324  
**Advances in Chemo / Bio Sensing (Theme 7) (Oral Session)**

08:00-08:15 FrAT18.1  
**Gold Foil-Based Biosensor for the Determination of Hydrogen Peroxide**  
 Narayanan, J. Shankara (*Univ. of Maryland Baltimore County*); Slaughter, Gymama\* (*Univ. of Maryland Baltimore County*)

08:15-08:30 FrAT18.2  
**Portable Fluorescence Detection Platform with Integrating Sphere**  
 Harmon, Dain (*Univ. of Alaska Fairbanks*); Chen, Cheng-fu\* (*Univ. of Alaska Fairbanks*); Halford IV, John (*Univ. of Alaska Fairbanks*)

08:30-08:45 FrAT18.3  
**Applying Machine Learning to the Flagellar Motor for Biosensing**  
 Zajdel, Tom\* (*University of California, Berkeley*); Nam, Andrew (*University of California, Berkeley*); Yuan, Jove (*University of California, Berkeley*); Shirsat, Vikram Rajas (*University of California, Berkeley*); Rad, Behzad (*Lawrence Berkeley National Labs*); Maharbiz, Michel (*University of California, Berkeley*)

08:45-09:00 FrAT18.4  
**Capacitive Micromachined Ultrasonic Transducer (CMUT)-Based Biosensor for Detection of Low Concentration Neuropeptide**  
 Lee, Sung Woo (*Korea Advanced Institute of Science and Technology*); Eom, Gayoung (*Korea Advanced Institute of Science and Technology (KAIST)*); Yoon, Inug (*KAIST*); Park, Sangjun (*KAIST*); Kook, Geon (*Korea Advanced Institute of Science and Technology*); Kim, Mi Kyung (*Korea Advanced Institute of Science and Technology (KAIST)*); Kim, Hyojung (*Korea Advanced Institute of Science and Technology*); Seo, Ji-Won (*Korea Advanced Institute of Science and Technology*); Lee, Hyunjo Jenny\* (*Korea Advanced Institute of Science and Technology (KAIST)*)

09:00-09:15 FrAT18.5  
**Label-Free Paper-Based Immunosensor with Graphene Nanocomposites for Electrochemical Detection of Follicle-Stimulating Hormone**  
 Luo, Jinping (*Institute of Electronics, Chinese Academy of Sciences*); Kong, Zhuang (*State Key Lab of Transducer Technology, Institute of Electronics, Chinese Academy of Sciences*); Wang, Yang (*State Key Lab of Transducer Technology, Institute of Electronics, Chinese Academy of Sciences*); Xie, Jing Yu (*Institute of Electronics, Chinese Academy of Sciences*); Liu, Juntao (*Institute of Electronics, Chinese Academy of Sciences*); Jin, Hongyan (*Obstetrics and Gynecology Dept., First Hospital Peking University*); Cai, Xinxia\* (*Institute of Electronics, Chinese Academy of Sciences*)

09:15-09:30 FrAT18.6  
**Identification of Biomarkers with Different Classifiers in Urine Test**  
 Zhang, Haotian (*ChongQing Technology and Business Univ.*); Dong, Tao\* (*Univ. College of Southeast Norway - HSN, TekMar*)

FrAT19: 08:00-09:30 Meeting Room 325A  
**Health Informatics – Mobile Health (Theme 10) (Oral Session)**

08:00-08:15 FrAT19.1  
**A Mobile App for the Remote Monitoring and Assistance of Patients with Parkinson's Disease and Their Caregivers**  
 Bernardini, Silvia (*Campus Bio-medico University of Rome*); Cianfrocca, Claudia (*Università Campus Bio Medico di Roma*); Maioni, Melissa (*Università Campus Bio-Medico di Roma/Istituto dell'Agire Scientifico e Tecnologico FAST*); Pennacchini, Maddalena (*Università Campus Bio-Medico di Roma*); Tartaglino, Daniela (*Università Campus Bio-Medico di Roma*); Vollero, Luca\* (*Università Campus Bio-Medico di Roma*)

08:15-08:30 FrAT19.2  
**Identification of Parkinson's Disease Utilizing a Single Self-recorded 20-step Walking Test Acquired by Smartphone's Inertial Measurement Unit**  
 Mehrang, Saeed (*Tampere University of Technology*); Jauhainen, Milla Karoliina (*Tampere University of Technology*); Pietilä, Julia\* (*Tampere University of Technology*); Puustinen, Juha (*Satakunta Hospital District, Satakunta Central Hospital*); Ruokolainen, Jari (*Tampere University of Technology*); Nieminen, Hannu (*Tampere University of Technology*)

08:30-08:45 FrAT19.3  
**Activity Tracking with Momentary Assessments**  
 Moon, Jon\* (*MEI Research, Ltd.*); Shade, John (*MEI Research*); Wolff-Hughes, Dana (*National Institutes of Health*); Josse, Pabitra (*National Institutes of Health*); Locke, Sarah (*National Institutes of Health*); Beane Freeman, Laura (*National Institutes of Health*); Hofmann, Jonathan (*National Institutes of Health*); Bowles, Heather (*National Institutes of Health*); Friesen, Melissa (*National Institutes of Health*)

08:45-09:00 FrAT19.4  
**CEA: Clinical Event Annotator mHealth Application for Real-Time Patient Monitoring**  
 Nizami, Shermeen\* (*Carleton University*); Basharat, Amna (*National University of Computer & Emerging Sciences*); Shoukat, Arslan (*National University of Computer & Emerging Sciences, Islamabad*); Hameed, Uzair (*National University of Computer & Emerging Sciences, Islamabad*); Raza, Syed Ali (*National University of Computer & Emerging Sciences, Islamabad*); Bekele, Amente (*Carleton University*); Giffen, Perry Randall (*IBM*); Green, James R. (*Carleton University*)

09:00-09:15 FrAT19.5  
**Congestive Heart Failure Risk Assessment Monitoring through Internet of Things and Mobile Personal Health Systems**  
 Spanakis, Emmanouil G. (*Foundation for Research and Technology – Hellas (FORTH)*); Psaraki, Maria (*Foundation for Research and Technology - Hellas*); Sakkalis, Vangelis\* (*ICS-FORTH*)

09:15-09:30 FrAT19.6  
**Severity Classification of Chronic Obstructive Pulmonary Disease and Asthma with Heart Rate and SpO2 Sensors**  
 Siddiqui, Tasnuba\* (*University of Memphis*); Morshed, Bashir (*University of Memphis*)

FrAT20: 08:00-09:30 Meeting Room 325B  
**Invited Session: Computational Human Models (VI) Emerging Modeling and Measurement Techniques (y8t3v) (Invited Session)**

08:00-08:15 FrAT20.1  
**Continuous Phase Estimation for Phase-Locked Neural Stimulation using an Autoregressive Model for Signal Prediction**  
 Blackwood, Ethan (*Massachusetts General Hospital*); Lo, Meng-chen\* (*Massachusetts General Hospital*); Widge, Alik (*Massachusetts General Hospital*)

08:15-08:30 FrAT20.2  
**Head-to-Nerve Analysis of Electro-Mechanical Impairments of Diffuse Axonal Injury**  
 Cinelli, Ilaria\* (*NUI of Galway*)

08:30-08:45 FrAT20.3  
**Modelling of Brain Injuries under Altered Gravity Conditions: Understanding Brain Plasticity**  
 Cinelli, Ilaria\* (*NUI of Galway*)

08:45-09:00 FrAT20.4  
**Water-Content Electrical Property Tomography (wEPT) for Mapping Brain Tissues' Conductivity in the 100-1000 kHz Range: Results of an Animal in-Vivo Study**  
 Wenger, Cornelia\* (*Novocure GmbH*); Hershkovich, Hadas Sara (*Novocure Ltd.*); Tempel-Brami, Catherine (*Novocure Ltd.*); Giladi, Moshe (*Novocure Ltd.*); Bomzon, Ze'ev (*Novocure Ltd.*)

09:00-09:15 FrAT20.5  
**Modeling of Invasive Electrographic Measurements: Point and Complete Electrode Models**  
 Hyde, Damon\* (*Boston Children's Hospital and Harvard Medical School*); Tomas-Fernandez, Xavier (*Harvard University*); Stone, Scellig (*Boston Children's Hospital and Harvard Medical School*); Peters, Jurriaan (*Boston Children's Hospital*); Warfield, Simon K. (*Harvard Medical School*)

09:15-09:30 FrAT20.6  
**Brain Haemorrhage Detection through Classification of Impedance Measurements**  
 O'Halloran, Martin\* (*National Univ. of Ireland Galway*); Porter, Emily (*National Univ. of Ireland Galway*); Santorelli, Adam (*McGill Univ.*); McDermott, Barry (*National Univ. of Ireland, Galway*)

FrBT1: 10:00-11:30 Meeting Room 311  
**Neural Interfaces (I) (Theme 6) (Oral Session)**

10:00-10:15 FrBT1.1  
**Low Temperature Approach for High Density Electrical Feedthroughs for Neural Implants using Maskless Fabrication Techniques**  
 Langenmair, Michael\* (*Univ Freiburg*); Martens, Julien (*Albert-Ludwigs-Univ. Freiburg*); Gierthmuehlen, Mortimer (*Dept. of Neurosurgery Univ. Freiburg*); Plachta, Dennis T.T. (*Univ. of Freiburg - IMTEK*); Stieglitz, Thomas (*Univ. of Freiburg*)

10:15-10:30 FrBT1.2  
**An Energy-Efficient, Inexpensive, Spinal Cord Stimulator with Adaptive Voltage Compliance for Freely Moving Rats**  
 Olafsdottir, Gudrun Erla\* (*Össur hf.*); Serdijn, Wouter A. (*Delft University of Technology*); Giagka, Vasiliki (*Bioelectronics Section, Dept. of Microelectronics, Faculty of Electrical Engineering, Mathematics and Computer Science, Del*)

10:30-10:45 FrBT1.3  
**PDMS Gasket Underfill for Long-Term Insulation of High-Density Interconnections in Active Implantable Medical Devices**  
 Khan, Sharif\* (*University of Freiburg*); Scholz, Daniel (*Albert-Ludwigs-Universität Freiburg*); Ordonez, Juan Sebastian (*Indigo*); Stieglitz, Thomas (*University of Freiburg*)

10:45-11:00 FrBT1.4  
**Velocity Selective Recording: A Demonstration of Effectiveness on the Vagus Nerve in Pig**  
 Metcalfe, Benjamin William\* (*Univ. of Bath*); Taylor, John (*Univ. of Bath*); Nielsen, Thomas Nørgaard (*Aalborg Univ.*)

11:00-11:15 FrBT1.5  
**Experimental Factors Affecting Stability of Electrochemical Impedance Spectroscopy Measurements**  
 Koo, Beomseo\* (*University of Michigan*); Weiland, James (*University of Michigan*)

11:15-11:30 FrBT1.6  
**Neurophysiological Evaluation of a Customizable  $\mu$ ECOG-Based Wireless Brain Implant**  
 Gkogkidis, Constantin Alexis\* (*Dept. of Neurosurgery, Medical Center - University of Freiburg, Germany*); Bentler, Christian (*University of Freiburg*); Wang, Xi (*Dept. of Neurosurgery, Medical Center - University of Freiburg, Germany*); Gierthmuehlen, Mortimer (*Dept. of Neurosurgery University Freiburg*); Scheiwe, Christian (*University Hospitals, Freiburg*); Cristina Schmitz, Heidi Ramona (*University Hospitals, Freiburg*); Haberstroh, Joerg (*University Hospitals, Freiburg*); Stieglitz, Thomas (*University of Freiburg*); Ball, Tonio (*Dept. of Neurosurgery, Medical Center - University of Freiburg, Germany*)

FrBT2: 10:00-11:30 Meeting Room 312  
**Nonlinear Analysis of Cardiovascular Signals (Theme 1) (Oral Session)**  
 Chair: Valenza, Gaetano (*University of Pisa*)

10:00-10:15 FrBT2.1  
**Cardiovascular Variability in Young Male and Female Subjects in Health and Orthostatic Intolerance**  
 Reulecke, Sina (*Universidad Autónoma Metropolitana*); Charleston-Villalobos, Sonia\* (*Universidad Autónoma Metropolitana*); Voss, Andreas (*University of Applied Sciences Jena*); Gonzalez-Camarena, Ramon (*Universidad Autónoma Metropolitana*); Gaitan-Gonzalez, Mercedes (*Universidad Autónoma Metropolitana*); Gonzalez-Hermosillo, Jesus Antonio (*Instituto Nacional de Cardiología*); Hernandez-Pacheco, Guadalupe (*Instituto Nacional de Cardiología "Ignacio Chavez"*); Aljama-Corrales, Tomas (*Universidad Autónoma Metropolitana*)

10:15-10:30 FrBT2.2  
**Coupling Analysis of Fetal and Maternal Heart Rates via Transfer Entropy using Magnetocardiography**  
 Avci, Recep (*Univ. of Arkansas for Medical Sciences*); Escalona-Vargas, Diana Irazú\* (*Univ. of Arkansas for Medical Sciences*); Siegel, Eric (*Univ. of Arkansas for Medical Sciences*); Lowery, Curtis (*Univ. of Arkansas for Medical Sciences*); Eswaran, Hari (*Univ. of Arkansas for Medical Sciences*)

10:30-10:45 FrBT2.3  
**Motion Artifact Removal for PPG Signals based on Accurate Fundamental Frequency Estimation and Notch Filtering**  
 Zhang, Qirui (*Shanghai Jiao Tong University*); Xie, Qingsong (*Shanghai Jiao Tong University*); Wang, Min (*Shanghai Jiao Tong University*); Wang, Guoxing\* (*Shanghai Jiao Tong University*)

10:45-11:00 FrBT2.4  
**Reconstructed Dynamics of the Imaging Photoplethysmogram**  
 Sviridova, Nina\* (*University of Tokyo*); Savchenko, Vladimir (*Hosei University*); Savchenko, Maria (*Meiji University*); Aihara, Kazuyuki (*University of Tokyo*); Okada, Kunihiko (*National Agriculture and Food Research Organization*); Zhao, Tiejun (*Niigata Agro-Food University*)

11:00-11:15 FrBT2.5  
**Poincare Analysis based on Short-Term Heart Rate Variability Data for Stress Evaluation**  
 Bu, Nan\* (*NIT, Kumamoto College*)

FrBT4: 10:00-11:30 Meeting Room 315  
**Implantable Sensors (I) (Theme 7) (Oral Session)**  
 Chair: Majerus, Steve (*APT Center, Cleveland VAMC*)

10:00-10:15 FrBT4.1  
**A 3.3 V, 8.89  $\mu$ A and 5.5 Ppm/ c CMOS Bandgap Voltage Reference for Power Telemetry in Retinal Prosthesis Systems**  
 Abdullah Zawawi, Ruhaifi (*Dept. of Health Sciences and Technology, GAIHST, Gachon University*); Kim, Jae Kun (*Dept. of Health Sciences and Technology, GAIHST, Gachon University*); Park, Jong-bum (*KETI*); Abd Manaf, Asrulnizam (*Collaborative Microelectronic Design Excellence Center (CEDEC), Universiti Sains Malaysia*); Kim, Jungsuk\* (*Gachon University*); Kim, Seong-Woo (*Korea University*)

10:15-10:30 FrBT4.2  
**Interface Adhesion in Implantable Chip-In-Foil Systems**  
 Bleck, Lena\* (*Natural and Medical Sciences Institute at the University of Tübingen*); Steins, Helen (*Natural and Medical Sciences Institute at the University of Tübingen*); von Metzner, Rene Patrick (*Natural and Medical Sciences Institute at the University of Tübingen*)

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- 10:30-10:45 FrBT4.3  
**Long-Term in Vivo Performance of Novel Ultrasound Powered Implantable Devices**  
 Kang, Chaoyi (*Food and Drug Administration*); Chang, Ting Chia (*Stanford University*); Vo, Jesse (*Food and Drug Administration*); Charthad, Jayant (*Stanford University*); Weber, Marcus J. (*Stanford University*); Arbajian, Amin (*Stanford University*); Vasudevan, Srikanth\* (*Food and Drug Administration*)
- 10:45-11:00 FrBT4.4  
**Vascular Graft Pressure-Flow Monitoring using 3D Printed MWCNT-PDMS Strain Sensors**  
 Majerus, Steve\* (*APT Center, Cleveland VAMC*); Chong, Hao (*Case Western Reserve University*); Ariando, David (*Case Western Reserve University*); Lerchbacker, Joseph (*Louis Stokes Cleveland VA Medical Center*); Potkay, Joseph (*VA Ann Arbor Healthcare System*); Bogle, Kath (*Cleveland VA Medical Center/Case Western Reserve University*); Zorman, Christian (*Case Western Reserve University*)
- 11:00-11:15 FrBT4.5  
**A Low-Power Injection-Locked VCO for an Implantable MICS Band Transmitter with Wireless Frequency Reference and Tune-while-Lock Channel Calibration**  
 Nenadovic, Miljana\* (*IHP GmbH*); Fiebig, Norbert (*IHP GmbH*); Fischer, Gunter (*IHP GmbH*); Wessel, Jan (*IHP*); Kissinger, Dietmar (*IHP*)
- 11:15-11:30 FrBT4.6  
**Sensors Selection for Continuous Monitoring of Bowel State and Activity**  
 Smiley, Aref\* (*Cleveland Clinic*); Majerus, Steve (*APT Center, Cleveland VAMC*); McAdams, Ian (*Cleveland Clinic*); Hanzlicek, Brett (*Advanced Platform Technology Center, Louis Stokes Cleveland VA Medical Center*); Bourbeau, Dennis (*FES Center, Cleveland VAMC*); Damaser, Margot S. (*Lerner Research Institute, The Cleveland Clinic Foundation*)
- FrBT5: 10:00-11:30 Meeting Room 316A  
**Optical Imaging (I) (Theme 2)** (Oral Session)  
**Chair:** Jo, Javier Antonio (*Texas A&M University*)  
**Co-Chair:** Pesaran, Bijan (*New York University*)
- 10:00-10:15 FrBT5.1  
**Spectral Imaging of Thermal Damage Induced during Microwave Ablation in the Liver**  
 Clancy, Neil\* (*Univ. College London*); Gurusamy, Kurinchi (*Univ. College London*); Jones, Geoffrey (*Univ. College London*); Davidson, Brian (*Univ. College London*); Clarkson, Matthew (*Univ. College London*); Hawkes, David J (*Univ. College London*); Stoyanov, Danaïl (*Univ. College London*)
- 10:15-10:30 FrBT5.2  
**A Molecular Imaging “Skin”: A Time-Resolving Intraoperative Imager for Microscopic Residual Cancer Detection using Enhanced Upconverting Nanoparticles**  
 Najafiaghdam, Hossein\* (*UC Berkeley*); Papageorgiou, Efthymios Philip (*UC Berkeley*); Torquato, Nicole A. (*Molecular Foundry, Lawrence Berkeley National Lab, CA USA*); Tajon, Cheryl A (*Lawrence Berkeley National Lab*); Zhang, Hui (*UCSF*); Park, Catherine (*UCSF*); Boser, Bernhard (*UC Berkeley*); Cohen, Bruce E. (*Lawrence Berkeley National Lab*); Anwar, Mekhail (*UCSF*)
- 10:30-10:45 FrBT5.3  
**Endogenous Fluorescence Lifetime Imaging (FLIM) Endoscopy for Early Detection of Oral Cancer and Dysplasia**  
 Jo, Javier Antonio\* (*Texas A&M Univ.*); Cheng, Shuna (*Texas A&M Univ.*); Cuenca, Rodrigo (*Texas A&M Univ.*); Duran, Elvis (*Texas A&M Univ.*); Malik, Bilal (*QT Ultrasound Labs*); Ahmed, Beena (*Univ. of New South Wales*); Maitland, Kristen (*Texas A&M Univ.*); Cheng, Yi-Shing (*Texas A&M Univ.*); Wright, John (*Texas A&M Univ.*)
- 10:45-11:00 FrBT5.4  
**Monkey-MIMMS: Towards Automated Cellular Resolution Large Scale Two-Photon Microscopy in the Awake Macaque Monkey**  
 Choi, John\* (*New York University*); Goncharov, Vasily (*Janelia Research Campus, Howard Hughes Medical Institute*); Kleinbart, Jessica (*New York University*); Orsborn, Amy (*University of California Berkeley*); Pesaran, Bijan (*New York University*)
- 11:00-11:15 FrBT5.5  
**Automating Event-Detection of Brain Neuron Synaptic Activity and Action Potential Firing in Vivo using a Random-Access Multiphoton Laser Scanning Microscope for Real-Time Analysis**  
 Sakaki, Kelly Dean Roy\* (*University of British Columbia, Centre for Brain Health*); Coleman, Patrick (*University of British Columbia*); Dellazizzo Toth, Tristan (*University of British Columbia*); Guerrier, Claire (*University of British Columbia*); Haas, Kurt (*University of British Columbia*)
- 11:15-11:30 FrBT5.6  
**Fast and Robust Heart Rate Estimation from Videos through Dynamic Region Selection**  
 Fujita, Yuya\* (*Kyoto University*); Hiromoto, Masayuki (*Kyoto University*); Sato, Takashi (*Kyoto University*)
- FrBT6: 10:00-11:30 Meeting Room 316B  
**Human Performance (I) (Theme 6)** (Oral Session)  
**Chair:** Jones, Richard D. (*New Zealand Brain Research Institute*)  
**Co-Chair:** Ellis, Michael (*Northwestern University*)
- 10:00-10:15 FrBT6.1  
**Sensibility Assessment for User Interface and Training Program of an Upper-Limb Rehabilitation Robot, D-SEMUL**  
 Kikuchi, Takehito\* (*Oita University*); Nagata, Tomoya (*Oita University*); Sato, Chihiro (*Oita University*); Abe, Isao (*Oita University*); Inoue, Akio (*ER Tec, Corp.*); Kugimiya, Shintaro (*Oita Rehabilitation Hospital*); Ohno, Tetsuya (*Oita Rehabilitation Hospital*); Hatabe, Shinnosuke (*Oita Rehabilitation Hospital*)
- 10:15-10:30 FrBT6.2  
**The Effectiveness of Compression Garments on EEG during a Running Test**  
 Nguyen, Thi Nhu Lan\* (*Univ. of Technology Sydney*); David, Eager (*UTS*); Nguyen, Hung T. (*Swinburne Univ. of Technology*)
- 10:30-10:45 FrBT6.3  
**Ensemble Learning based on Overlapping Clusters of Subjects to Predict Microsleep States from EEG**  
 Buriro, Abdul Baseer\* (*Univ. of Canterbury*); Shoorangiz, Reza (*Univ. of Canterbury*); Weddell, Stephen J. (*Univ. of Canterbury*); Jones, Richard D. (*New Zealand Brain Research Institute*)
- 10:45-11:00 FrBT6.4  
**The Impact of Freezing of Gait on Balance Perception and Mobility in Community-Living with Parkinson’s Disease**  
 Mancini, Martina\* (*OHSU*); Curtze, Carolin (*Oregon Health & Science University*); Stuart, Samuel (*Oregon Health & Science University*); El-Gohary, Mahmoud (*Portland State University*); McNames, James (*Portland State University*); Nutt, John (*Oregon Health & Science University*); Horak, Fay (*Oregon Health & Science University*)
- 11:00-11:15 FrBT6.5  
**Perception of Mechanical Impedance during Active Ankle and Knee Movement**  
 Azocar, Alejandro\* (*University of Michigan*); Shorter, Amanda (*Northwestern University*); Rouse, Elliott (*University of Michigan*)

FrBT7: 10:00-11:30 Meeting Room 316C  
**Signal Processing and Classification of Electrophysiological Signals (Theme 1)** (Oral Session)  
**Chair:** Kameneva, Tatiana (*Swinburne University of Technology*)

10:00-10:15 FrBT7.1  
**Analysis of Nociceptive Evoked Potentials during Multi-Stimulus Experiments using Linear Mixed Models**  
 van den Berg, Boudewijn\* (*University of Twente*); Buitenweg, Jan Reinoud (*University of Twente*)

10:15-10:30 FrBT7.2  
**Investigation of the Influence of ECoG Grid Spatial Density on Decoding Hand Flexion and Extension**  
 Jiang, Tianxiao (*University of Houston*); Jiang, Tao (*Tian Tan Hospital*); Mei, Shenshen (*Haidian Hospital*); Wang, Taylor (*Tian Tan Hospital*); Li, Yunlin (*Haidian Hospital*); Sujit, Prabhu (*MD Anderson Cancer Center*); Sha, Zhiyi (*University of Minnesota, Dept. of Neurology*); Ince, Nuri Firat\* (*University of Houston*)

10:30-10:45 FrBT7.3  
**Differences between Morphological and Electrophysiological Retinal Ganglion Cell Classes**  
 Zehra, Syeda (*Swinburne University of Technology*); Hicks, Damien (*Swinburne University of Technology*); Hadjinicolaou, Alex E. (*Australian College of Optometry*); Ibbotson, Michael R (*Australian College of Optometry*); Kameneva, Tatiana\* (*Swinburne University of Technology*)

10:45-11:00 FrBT7.4  
**EEG Complexity Maps to Characterize Brain Dynamics during Upper Limb Motor Imagery**  
 Catrambone, Vincenzo\* (*Univ. di Pisa*); Greco, Alberto (*Univ. of Pisa*); Averta, Giuseppe (*Univ. of Pisa*); Bianchi, Matteo (*Univ. of Pisa*); Bicchi, Antonio (*Univ. of Pisa*); Scilingo, Enzo Pasquale (*Univ. of Pisa*); Valenza, Gaetano (*Univ. of Pisa*)

11:00-11:15 FrBT7.5  
**Chaotic Analysis of Hippocampal and Cortical Sleep EEG during Various Vigilance States**  
 Dahal, Prawesh (*Trinity College*); Ning, Taikang (*Trinity College*); Blaise, J. Harry\* (*Trinity College*)

11:15-11:30 FrBT7.6  
**A New Sympathovagal Balance Index from Electrodermal Activity and Instantaneous Vagal Dynamics: A Preliminary Cold Pressor Study**  
 Ghiasi, Shadi (*University of Pisa*); Greco, Alberto (*University of Pisa*); Nardelli, Mimma (*University of Pisa*); Catrambone, Vincenzo (*Università di Pisa*); Barbieri, Riccardo (*Politecnico di Milano*); Scilingo, Enzo Pasquale (*University of Pisa*); Valenza, Gaetano\* (*University of Pisa*)

FrBT8: 10:00-11:30 Meeting Room 318A  
**Neural Stimulation (II) (Theme 6)** (Oral Session)  
**Chair:** Abbas, James (*Arizona State University*)

10:00-10:15 FrBT8.1  
**ROAST: An Open-Source, Fully-Automated, Realistic vOLumetric-Approach-based Simulator for TES**  
 Huang, Yu\* (*City College of New York*); Datta, Abhishek (*Soterix Medical, Inc.*); Bikson, Marom (*The City College of New York*); Parra, Lucas C. (*City College of New York*)

10:15-10:30 FrBT8.2  
**Neuroengineering Tools for Studying the Effect of Intracortical Microstimulation in Rodent Models**  
 Averna, Alberto\* (*Istituto Italiano di Tecnologia*); Guggenmos, David (*Dept. of Physical Medicine and Rehabilitation University of Kansas Medical Center*); Pasquale, Valentina (*Istituto Italiano di Tecnologia*); Semprini, Marianna (*Italian Institute of Technology*); Nudo, Randolph (*University of Kansas Medical Center*); Chiappalone, Michela (*Istituto Italiano di Tecnologia*)

10:30-10:45 FrBT8.3  
**The Effect of Movement Phase on the Contralaterally Coordinated Paired Associative Stimulation-Induced Excitability**  
 Alokaily, Ahmad (*New Jersey Institute of Technology*); Yarossi, Mathew (*Northeastern Univ.*); Fluet, Gerard (*Rutgers, The State Univ. of New Jersey*); Tunik, Eugene (*Northeastern Univ.*); Adamovich, Sergei\* (*New Jersey Institute of Technology*)

10:45-11:00 FrBT8.4  
**Effect of Aging on Cortical Current Flow Due to Transcranial Direct Current Stimulation: Considerations for Safety**  
 Thomas, Chris\* (*Soterix Medical, Inc.*); Datta, Abhishek (*Soterix Medical, Inc.*); Woods, Adam J. (*University of Pennsylvania*)

11:00-11:15 FrBT8.5  
**Cortical Brain Stimulation with Endovascular Electrodes**  
 Gerboni, Giulia\* (*Univ. of Melbourne*); John, Sam (*Vascular Bionics Lab, Dept. of Medicine, Univ. of Melbourne*); Ronayne, Stephen (*Vascular Bionics Lab, Dept. of Medicine, Univ. of Melbourne*); Rind, Gil (*Vascular Bionics Lab, Dept. of Medicine, Univ. of Melbourne*); May, Clive (*Florey Institute of Neuroscience and Mental Health*); Oxley, Thomas (*Univ. of Melbourne*); Grayden, David B. (*Univ. of Melbourne*); Opie, Nicholas (*Univ. of Melbourne*); Wong, Yan Tat (*Monash Univ.*)

11:15-11:30 FrBT8.6  
**Stimulation Effect of Inter-Subject Variability in tDCS – Multi-Scale Modeling Study**  
 Im, Cheolki (*Gwangju Institute of Science and Technology*); Seo, Hyeon (*Gwangju Institute of Science and Technology*); Jun, Sung Chan\* (*Gwangju Institute of Science and Technology*)

FrBT9: 10:00-11:30 Meeting Room 318B  
**Time-Frequency Analysis of Neural Signals (Theme 1)** (Oral Session)  
**Chair:** Song, Dong (*University of Southern California*)

10:00-10:15 FrBT9.1  
**Signal-Adaptive Denoising of Event-Related Potentials**  
 Leistritz, Lutz\* (*Jena Univ. Hospital, Friedrich Schiller Univ. Jena*); Ligges, Carolin (*Dept. of Child and Adolescent Psychiatry, Psychosomatic Medicine and Psychotherapy; Jena Univ. Hospital*)

10:15-10:30 FrBT9.2  
**Analysis of Spontaneous EEG Activity in Alzheimer's Disease using Weighted Visibility Graph**  
 Cai, Lihui (*Tianjin University*); Deng, Bin (*Tianjin University*); Wei, Xile (*Tianjin University*); Wang, Ruofan (*Tianjin University of Technology and Education*); Wang, Jiang\* (*Tianjin University*)

10:30-10:45 FrBT9.3  
**Dynamic Time-Frequency Feature Extraction for Brain Activity Recognition**  
 Shi, Yang\* (*University of Georgia*); Li, Fangyu (*University of Georgia*); Liu, Tianming (*University of Georgia*); Beyette, Fred R (*University of Georgia*); Song, WenZhan (*University of Georgia*)

10:45-11:00 FrBT9.4  
**Compressed Sensing of EEG with Gabor Dictionary: Effect of Time and Frequency Resolution**  
 Dao, Phuong Thi (*Auckland University of Technology*); Griffin, Anthony (*Auckland University of Technology*); Li, Xue Jun\* (*Auckland University of Technology*)

11:00-11:15 FrBT9.5  
**The Embedding Transform. A Novel Analysis of Non-Stationarity in the EEG**  
 Loza, Carlos\* (*Universidad San Francisco de Quito*); Principe, Jose (*University of Florida*)

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11:15-11:30	FrBT9.6	<b>Automated Detection of High Frequency Oscillations in Human Scalp Electroencephalogram</b> Charupanit, Krit ( <i>University of California, Irvine</i> ); Nunez, Michael Dawson ( <i>University of California, Irvine</i> ); Bernardo, Danilo ( <i>University of North Carolina School of Medicine</i> ); Bebin, Martina ( <i>UAB</i> ); Krueger, Darcy A ( <i>Cincinnati Children's Hospital Medical Center</i> ); Northrup, Hope ( <i>McGovern Medical School; University of Texas Health Science Center at Houston</i> ); Sahin, Mustafa ( <i>Boston Children's Hospital</i> ); Wu, Joyce ( <i>University of California Los Angeles</i> ); Lopour, Beth* ( <i>University of California, Irvine</i> )	11:15-11:30	FrBT10.6	<b>Automated Myocardial Wall Motion Classification using Handcrafted Features vs a Deep CNN-Based Mapping</b> Omar, Hasmila* ( <i>Oxford University</i> ); Patra, Arijit ( <i>Oxford University</i> ); Domingos, Joao ( <i>University of Oxford</i> ); Leeson, Paul ( <i>John Radcliffe Hospital</i> ); Noble, J Alison ( <i>University of Oxford</i> )
FrBT10: 10:00-11:30	Meeting Room 319A	<b>Ultrasound Imaging (I) (Theme 2) (Oral Session)</b> <b>Chair:</b> Linguraru, Marius George ( <i>Children's National Health System</i> )	FrBT11: 10:00-11:30	Meeting Room 319B	<b>Neurological Disorders (II) (Theme 6) (Oral Session)</b> <b>Chair:</b> Zouridakis, George ( <i>University of Houston</i> )
10:00-10:15	FrBT10.1	<b>A New Method for the Anterior Mitral Leaflet Segmentation in Echocardiography Videos by using the Virtual M-Mode Space</b> Sultan, Malik Saad ( <i>University of Porto</i> ); Martins, Nelson ( <i>Neadvance, Machine Vision, SA; Universidade do Porto</i> ); Eva, Costa ( <i>Enermeter, Sistemas de Medição, Lda, Braga, Portugal</i> ); Veiga, Diana ( <i>Neadvance Machine Vision SA</i> ); Ferreira, Manuel Joao ( <i>University of Minho</i> ); Sandra, Mattos ( <i>Cículo do Coração de Pernambuco, Recife PE, Brazil</i> ); Coimbra, Miguel* ( <i>Instituto de Telecomunicações / Universidade do Porto</i> )	10:00-10:15	FrBT11.1	<b>A Deep Learning Framework for the Remote Detection of Parkinson's Disease using Smart-Phone Sensor Data</b> Prince, John* ( <i>Univ. of Oxford</i> ); De Vos, Maarten ( <i>Univ. of Oxford</i> )
10:15-10:30	FrBT10.2	<b>B-Mode Ultrasound based Diagnosis of Liver Cancer with CEUS Images as Privileged Information</b> Meng, Fanqing ( <i>Shanghai University</i> ); Shi, Jun* ( <i>Shanghai University</i> ); Gong, Bangming ( <i>Shanghai University</i> ); Zhang, Qi ( <i>Shanghai University</i> ); Leheng, Guo ( <i>Shanghai Tenth People's Hospital</i> ); Dan, Wang ( <i>Shanghai Tenth People's Hospital</i> ); Huixiong, Xu ( <i>Shanghai Tenth People's Hospital</i> )	10:15-10:30	FrBT11.2	<b>EEG Classification via Convolutional Neural Network-Based Interictal Epileptiform Event Detection</b> Thomas, John* ( <i>Nanyang Technological Univ.</i> ); Comoretto, Luca ( <i>Politecnico di Milano</i> ); Jing, Jin ( <i>Nanyang Technological Univ.</i> ); Dauwels, Justin ( <i>NTU</i> ); Cash, Sydney ( <i>Massachusetts General Hospital</i> ); Westover, Brandon ( <i>Massachusetts General Hospital</i> )
10:30-10:45	FrBT10.3	<b>Contrast-Enhanced Ultrasound to Quantify Perfusion in a Machine-Perfused Pig Liver</b> Chen, Melinda ( <i>Massachusetts Institute of Technology</i> ); Li, Qian ( <i>Massachusetts General Hospital</i> ); Karimian, Negin ( <i>Center for Engineering in Medicine, Dept. of Surgery, Division of Transplantation, Massachusetts General Hospital</i> ); Yeh, Heidi ( <i>Massachusetts General Hospital</i> ); Duan, Yu ( <i>The First Affiliated Hospital, Sun Yat-sen University</i> ); Fontan, Fermin ( <i>Massachusetts General Hospital</i> ); Aburawi, Mohamed ( <i>Harvard Medical School, Massachusetts General Hospital</i> ); Anthony, Brian W.* ( <i>Massachusetts Institute of Technology</i> ); Uygun, Korkut ( <i>Massachusetts General Hospital/Harvard Medical School</i> ); Samir, Anthony Edward ( <i>Harvard Medical School, Massachusetts General Hospital</i> )	10:30-10:45	FrBT11.3	<b>Seizure Reduction using Model Predictive Control</b> Brar, Harleen* ( <i>Georgia Institute of Technology</i> ); Exarchos, Ioannis ( <i>Emory University</i> ); Pan, Yunpeng ( <i>Georgia Institute of Technology</i> ); Theodorou, Evangelos ( <i>Georgia Institute of Technology</i> ); Mahmoudi, Babak ( <i>Emory University</i> )
10:45-11:00	FrBT10.4	<b>Multiple Empirical Kernel Mapping based Broad Learning System for Classification of Parkinson's Disease with Transcranial Sonography</b> Shen, Lu ( <i>Shanghai Univ.</i> ); Shi, Jun* ( <i>Shanghai Univ.</i> ); Gong, Bangming ( <i>Shanghai Univ.</i> ); Zhang, Yingchun ( <i>The Second Affiliated Hospital of Soochow Univ.</i> ); Dong, Yun ( <i>Shanghai East Hospital of Tongji Univ.</i> ); Zhang, Qi ( <i>Shanghai Univ.</i> ); An, Hedi ( <i>Shanghai East Hospital of Tongji Univ.</i> )	10:45-11:00	FrBT11.4	<b>Supra-Spinal Modulation of Walking in Healthy Individuals and Persons with Multiple Sclerosis: An fNIRS Mobile Imaging Study</b> Saleh, Soha* ( <i>Kessler Foundation</i> ); Sandroff, Brian ( <i>University of Alabama</i> ); Owweye, Oyindamola ( <i>New Jersey City Institute of Technology</i> ); Vitiello, Tyler ( <i>Kessler Foundation</i> ); Hoxha, Armand ( <i>Kessler Foundation</i> ); Yue, Guang ( <i>Kessler Foundation</i> ); DeLuca, John ( <i>Kessler Foundation</i> )
11:00-11:15	FrBT10.5	<b>Automatic Segmentation of Neonatal Ventricles from Cranial Ultrasound for Prediction of Intraventricular Hemorrhage Outcome</b> Roshanitabrizi, Pooneh* ( <i>Children's National Health System</i> ); Obeid, Rawad ( <i>Children's National Health System</i> ); Cerrolaza, Juan J. ( <i>Imperial College London</i> ); Penn, Anna ( <i>Children's National Medical Center</i> ); Mansoor, Awais ( <i>Children's National Health System</i> ); Linguraru, Marius George ( <i>Children's National Health System</i> )	11:00-11:15	FrBT11.5	<b>Development of Sensor-Based Measures of Upper Extremity Interlimb Coordination</b> Miller, Aaron* ( <i>University of Tennessee</i> ); Duff, Susan ( <i>Chapman University, Physical Therapy</i> ); Quinn, Lori ( <i>Teachers College, Columbia University</i> ); Bishop, Lauri ( <i>Teachers College, Columbia University</i> ); Youdan Jr., Gregory ( <i>Teachers College, Columbia University</i> ); Ruthrauff, Heather ( <i>Children's Hospital of Philadelphia</i> ); Wade, Eric ( <i>University of Tennessee</i> )
			11:15-11:30	FrBT11.6	<b>Source Connectivity Analysis can Assess Recovery of Acute Mild Traumatic Brain Injury Patients</b> Li, Lianyang ( <i>Univ. of Houston</i> ); Arakaki, Xianghong ( <i>Huntington Medical Research Inst.</i> ); Harrington, Michael ( <i>Huntington Medical Research Inst.</i> ); Zouridakis, George* ( <i>Univ. of Houston</i> )
			FrBT12: 10:00-11:30	Meeting Room 321A	<b>Blood Flow (Theme 5) (Oral Session)</b> <b>Chair:</b> Avolio, Alberto P. ( <i>Macquarie University</i> )
			10:00-10:15	FrBT12.1	<b>Transfer Function between Intracranial Pressure and Aortic Blood Pressure and Carotid Blood Flow</b> Lara Hernandez, Julio Antonio ( <i>Macquarie University</i> ); Kim, Mi Ok ( <i>Macquarie University</i> ); Avolio, Alberto P* ( <i>Macquarie University</i> ); Butlin, Mark ( <i>Macquarie University</i> )
			10:15-10:30	FrBT12.2	<b>Estimation of Three-Dimensional Blood Flow with Ultrasound – Continuity Equation on Multiplane Dual-Angle Doppler Imaging</b> Yaegashi, So ( <i>Tohoku Univ.</i> ); Maeda, Moe ( <i>Tohoku Univ.</i> ); Nagaoka, Ryo ( <i>Tohoku Univ.</i> ); Saijo, Yoshifumi* ( <i>Tohoku Univ.</i> )

10:30-10:45 FrBT12.3  
**Left Ventricular Blood Flow Dynamics in Aortic Stenosis before and after Aortic Valve Replacement**  
 Minagawa, Tadanori\* (*Tohoku Medical and Pharmaceutical University Hospital*); Saijo, Yoshifumi (*Tohoku University*); Oktamuliani, Sri (*Graduate School of BioMedical Engineering, Tohoku University*); Kurokawa, Takafumi (*Tohoku Welfare Pension Hospital*); Hasegawa, Kaoru (*Tohoku University*); Matsuoka, Takayuki (*Tohoku Medical and Pharmaceutical University Hospital*); Shimizu, Takuya (*Dept. of Cardiovascular Surgery, Tohoku Medical and Pharmaceutical University Hospital*); Miura, Makoto (*Dept. of Cardiovascular Surgery, Tohoku Medical and Pharmaceutical University Hospital*); Takahiro, Ohara (*Tohoku Medical and Pharmaceutical University Hospital*); Kawamoto, Shunsuke (*Dept. of Cardiovascular Surgery, Tohoku Medical and Pharmaceutical University Hospital*)

10:45-11:00 FrBT12.4  
**Valuation of Implanted-Stent Impact on Coronary Artery Trifurcation Blood Flow by using CFD**  
 Fujimoto, Kazushi\* (*Tokyo Univ. of Science*); Tsukahara, Takahiro (*Tokyo Univ. of Science*); Yamada, Yuya (*Tokyo Univ. of Science*); Yamamoto, Ken (*Tokyo Univ. of Science*); Motosuke, Masahiro (*Tokyo Univ. of Science*); Tanaka, Kentaro (*Univ. Hospitals*); Tahara, Satoko (*New Tokyo Hospital*); Tani, Kenjiro (*New Tokyo Hospital*); Nakamura, Sunao (*New Tokyo Hospital*); Fujino, Yusuke (*New Tokyo Hospital*)

11:00-11:15 FrBT12.5  
**Different Blood Flow Models in Coronary Artery Diseases: Effects on Hemodynamic Parameters**  
 Gaudio, Lina Teresa (*Magna Graecia University of Catanzaro*); Caruso, Maria Vittoria (*Magna Graecia University*); De Rosa, Salvatore (*Magna Graecia University*); Indolfi, Ciro (*Magna Graecia University*); Fragomeni, Gionata\* (*Magna Graecia University of Catanzaro*)

FrBT13: 10:00-11:30 Meeting Room 321B  
**Prosthetics and Orthotics (Theme 8) (Oral Session)**  
 Chair: Kosuge, Kazuhiro (*Tohoku University*)

10:00-10:15 FrBT13.1  
**Natural Gait Event-Based Level Walking Assistance with a Robotic Hip Exoskeleton**  
 Jang, Junwon\* (*Samsung Electronics*); Lee, Jusuk (*Samsung Advanced Institute of Technology*); Lim, Bokman (*Samsung Electronics Co., Ltd.*); Shim, Youngbo (*Samsung Advanced Institute of Technology*)

10:15-10:30 FrBT13.2  
**On the Relationship between Human Motor Control Performance and Kinematic Synergies in Upper Limb Prosthetics**  
 Garcia-Rosas, Ricardo\* (*University of Melbourne*); Oetomo, Denny (*University of Melbourne*); Manzie, Chris (*University of Melbourne*); Tan, Ying (*University of Melbourne*); Choong, Peter (*University of Melbourne*)

10:30-10:45 FrBT13.3  
**Design and Preliminary Assessment of Lightweight Swing-Assist Knee Prosthesis**  
 Baimyshev, Almaskhan\* (*Vanderbilt University*); Lawson, Brian (*Vanderbilt University*); Goldfarb, Michael (*Vanderbilt University*)

10:45-11:00 FrBT13.4  
**Real-Time Onboard Recognition of Gait Transitions for a Bionic Knee Exoskeleton in Transparent Mode**  
 Liu, Xiuhua (*Peking University*); Zhou, Zhihao (*Peking University*); Wang, Qining\* (*Peking University*)

11:00-11:15 FrBT13.5  
**Cycling-Enhanced Knee Exoskeleton using Planar Spiral Spring**  
 Chaichaowarat, Ronnapee\* (*Tohoku University*); Kinugawa, Jun (*Tohoku University*); Kosuge, Kazuhiro (*Tohoku University*)

11:15-11:30 FrBT13.6  
**Assist-as-Needed Controller to a Task-Based Knee Rehabilitation Exoskeleton**  
 Adhikari, Visharath (*Wichita State University*); MajidiRad, AmirHossein (*Wichita State University*); Yihun, Yimesker\* (*Wichita State University*); Desai, Jaydip (*Wichita State University*)

FrBT14: 10:00-11:30 Meeting Room 322AB  
**Thermal Ablation and Hyperthermia (Theme 9) (Oral Session)**  
 Chair: Prakash, Punit (*Kansas State University*)  
 Co-Chair: Panescu, Dorin (*Advanced Cardiac Therapeutics*)

10:00-10:15 FrBT14.1  
**In vitro Measurement of Release Kinetics of Temperature Sensitive Liposomes with a Fluorescence Imaging System**  
 Asemani, Davud (*Medical University of South Carolina*); Motamarry, Anjan (*Medical University of South Carolina*); Haemmerich, Dieter\* (*Medical University of South Carolina*)

10:15-10:30 FrBT14.2  
**Evaluation of Deep Thermal Rehabilitation System using Resonant Cavity Applicator during Knee Experiments**  
 Shindo, Yasuhiro\* (*Toyo University*); Kato, Kazuo (*Meiji University*); Ichishima, Yasuhito (*Meiji University, Graduate School of Science Technology*); Iseki, Yuya (*Meiji University*)

10:30-10:45 FrBT14.3  
**An Intelligent Theranostics Method using Optical Coherence Tomography Guided Automatic Laser Ablation for Neurosurgery**  
 Chang, Wei (*Tsinghua University*); Yingwei, Fan (*Tsinghua University*); Zhang, Xinran (*Tsinghua University*); Liao, Hongen\* (*Tsinghua University*);

10:45-11:00 FrBT14.4  
**Intuitive Hand-Held Instrument for Loose Body Removal in Arthroscopic Synovial Chondromatosis Surgery**  
 Ryu, Geunwoong (*Korea Institute of Science and Technology, Korea University of Science and Technology*); Kim, Dongyoung (*Korea Institute of Science and Technology, Seoul National University of Science and Technology*); Park, Chul Min (*Korea Institute of Science and Technology (KIST)*); Kim, Keri\* (*Korea Institute of Science and Technology*)

11:00-11:15 FrBT14.5  
**A New Model for RF Ablation Planning in Clinic**  
 Qin, Fangyu (*Shanghai Jiao Tong University*); Zhang, Kangwei (*Shanghai Jiao Tong University*); Zou, Jincheng (*Shanghai Jiao Tong University*); Zhang, Aili\* (*Shanghai Jiao Tong University*); Xu, Lisa Xuemin (*Shanghai Jiao Tong University*); Sun, Jianqi (*Shanghai Jiao Tong University*)

11:15-11:30 FrBT14.6  
**Evaluation of the Effect of Uterine Fibroids on Microwave Endometrial Ablation Profiles**  
 Faridi, Pegah (*Kansas State Univ.*); Fallahi, Hojjatollah (*Kansas State Univ.*); Prakash, Punit\* (*Kansas State Univ.*)

FrBT16: 10:00-11:30 Meeting Room 323B  
**General and Theoretical Informatics – Decision Support Systems (Theme 10) (Oral Session)**

10:00-10:15 FrBT16.1  
**A Novel Sleep Stage Scoring System: Combining Expert-Based Rules with a Decision Tree Classifier**  
 Gunnarsdottir, Kristin\* (*Johns Hopkins University*); Gamaldo, Charlene (*Johns Hopkins University, School of Medicine*); Salas, Rachel (*Johns Hopkins University, School of Medicine*); Ewen, Joshua (*Kennedy Krieger Institute*); Allen, Richard (*Johns Hopkins*); Sarma, Sridevi V. (*Johns Hopkins University*)

10:15-10:30 FrBT16.2  
**Cognitive DDx Assistant in Rare Diseases**  
 Reumann, Matthias\* (IBM Research - Zurich); Giovannini, Andrea (IBM Switzerland); Nadworny, Bartosz (IBM Switzerland); Auer, Christoph (IBM Research, Rüschlikon); Girardi, Ivan (IBM Research - Zurich); Marchiori, Chiara (IBM Research - Zurich)

10:30-10:45 FrBT16.3  
**Sparse Modeling of Mandibular Reconstruction Procedures using Statistical Geometric Features**  
 Nakao, Megumi\* (Kyoto Univ.); Matsuda, Tetsuya (Kyoto Univ.)

10:45-11:00 FrBT16.4  
**A Clinical Interpretable Approach Applied to Cardiovascular Risk Assessment**  
 Paredes, Simao\* (Instituto Politécnico de Coimbra); Henriques, Jorge (Univ. of Coimbra); Rocha, Teresa (Inst Superior de Eng de Coimbra); Mendes, Diana (Universidade de Coimbra); de Carvalho, Paulo (Univ. of Coimbra); Morais, João (Hospital de Santo André, Leiria); Bianchi, Anna Maria (Politecnico di Milano); Traver, Vicente (ITACA - Universitat Politècnica de València)

11:00-11:15 FrBT16.5  
**Doubly-Robust Estimation of Effect of Imaging Resource Utilization on Discharge Decisions in Emergency Depts.**  
 Tabaie, Azade (Emory); Chokshi, Falgun (Emory Univ. School of Medicine); Holder, Andre (Emory Univ. School of Medicine); Nemati, Shamim\* (Emory Univ. School of Medicine)

11:15-11:30 FrBT16.6  
**Deriving High Performance Alerts from Reduced Sensor Data for Timely Intervention in Acute Hypotensive Episodes**  
 Pathinarupothi, Rahul Krishnan\* (Amrita Vishwa Vidyapeetham); Rangan, Ekanath (Amrita Vishwa Vidyapeetham); Durga, P (Amrita University)

FrBT17: 10:00-11:30 Meeting Room 323C  
**Activity Monitoring (Theme 7) (Oral Session)**  
**Chair:** Wang, Xuelin (Tsinghua University)

10:00-10:15 FrBT17.1  
**Detecting Reach to Grasp Activities using Motion and Muscle Activation Data**  
 Hauser, Nathaniel (University of Tennessee Knoxville); Wade, Eric\* (University of Tennessee)

10:15-10:30 FrBT17.2  
**Classification of Human Posture from Radar Returns using Ultra-Wideband Radar**  
 Baird, Zachary\* (Carleton University); Rajan, Sreeraman (School of Information Technology and Engineering (SITE), University of Ottawa, Ottawa, Canada); Bolic, Miodrag (University of Ottawa)

10:30-10:45 FrBT17.3  
**Combined Regression and Classification Models for Accurate Estimation of Walking Speed using a Wrist-Worn IMU**  
 Zihajehzadeh, Shaghayegh (Simon Fraser University); Aziz, Omar (Simon Fraser University); Tae, Chul-Gyu (Bigmotion Technologies); Park, Edward J.\* (Simon Fraser University)

10:45-11:00 FrBT17.4  
**Ni-Doped Liquid Metal Printed Highly Stretchable and Conformable Strain Sensor for Multifunctional Human-Motion Monitoring**  
 Wang, Xuelin (Tsinghua Univ.); Guo, Rui (Tsinghua Univ.); Yuan, Bo (Tsinghua Univ.); Yao, Youyou (Tsinghua Univ.); Wang, Feng (Tsinghua Univ.); Liu, Jing\* (Tsinghua Univ.)

11:00-11:15 FrBT17.5  
**An Intelligent Wearable Device for Human's Cervical Vertebra Posture Monitoring**  
 Wang, Yingying (Shenzhen Institutes of Advanced Tech., Chinese Academy of Sciences); Zhou, Hui (Shenzhen Institutes of Advanced Tech.); Yang, Zijian (Shenzhen Institutes of Advanced Tech., Chinese Academy of Sciences); Samuel, Oluwarotimi Williams (Shenzhen Institutes of Advanced Tech.); Liu, Weidong (Shenzhen Traditional Chinese Medicine Hospital); Cao, yafei (Shenzhen Traditional Chinese Medicine Hospital); Li, Guanglin\* (Shenzhen Institutes of Advanced Tech.)

11:15-11:30 FrBT17.6  
**Personalized Markerless Upper-Body Tracking with a Depth Camera and Wrist-Worn Inertial Measurement Units**  
 Jatesiktat, Prayook (NTU); Anopas, Dollaporn\* (Nanyang Technological Univ.); Ang, Wei Tech (Nanyang Technological Univ.)

FrBT18: 10:00-11:30 Meeting Room 324  
**Neurological Applications (Theme 7) (Oral Session)**

10:00-10:15 FrBT18.1  
**Confusion State Induction and EEG-Based Detection in Learning**  
 Zhou, Yun\* (Shaanxi Normal University); Xu, Tao (Northwestern Polytechnical University); Li, Shiqian (Shaanxi Normal University); Li, Shaoqi (Northwestern Polytechnical University)

10:15-10:30 FrBT18.2  
**Hardware Implementation of an Adaptive Data Acquisition System for Real-World EEG**  
 Poirier, Catherine (Army Research Lab); Dixon, Anna Marie Rogers (Army Research Lab); Gadfort, Peter (U.S. Army Research Lab); Conroy, Joseph K. (U.S. Army Research Lab); Hairston, W. David\* (U.S. Army Research Lab); Nonte, Michael (DCS Corp.)

10:30-10:45 FrBT18.3  
**Effect of Epoch Length on Compressed Sensing of EEG**  
 Li, Xue Jun\* (Auckland University of Technology); Dao, Phuong Thi (Auckland University of Technology); Griffin, Anthony (Auckland University of Technology)

10:45-11:00 FrBT18.4  
**Cancellation Method of Signal Fluctuations in Brain Function Measurements using Near-Infrared Spectroscopy**  
 Fukuda, Keiko\* (Tokyo Metropolitan College of Industrial Technology); Sato, Daisuke (Tokyo Metropolitan College of Industrial Technology)

11:00-11:15 FrBT18.5  
**Vocal Stereotypy Detection: An Initial Step to Understanding Emotions of Children with Autism Spectrum Disorder**  
 Min, Cheol-Hong\* (University of St. Thomas); Fetzner, John (University of St. Thomas)

11:15-11:30 FrBT18.6  
**Simultaneous Measurement of Swallowing Sound and Mechanomyogram of Submental Muscle with PVDF Film**  
 Tsukagoshi, Keita\* (Tokyo University of Science); Hashimoto, Takuya (Tokyo University of Science); Koike, Takuji (The University of Electro-Communications)

FrBT19: 10:00-11:30 Meeting Room 325A  
**Health Informatics – Technology and Services for Home Care (Theme 10) (Oral Session)**  
**Chair:** Shi, Wen (Nanyang Technological University)  
**Co-Chair:** Xue, Bing (National University of Singapore)

10:00-10:15 FrBT19.1  
**Evaluation of ReminX as a Behavioral Intervention for Mild to Moderate Dementia**  
 Vincent, Filoteo\* (UCSD); Cox, Edward (Dthera Sciences); Molly, Split (UCSD); Gross, Martyn (Dthera Sciences); Culjat, Martin (Dthera Sciences); Keene, David (Dthera Sciences)

10:15-10:30	FrBT19.2	<b>Ontology-Based Dementia Care Support System</b> Jeon, Hwawoo ( <i>Korea Institute of Science and Technology</i> ); Park, Sungkee ( <i>Korea Institute of Science and Technology</i> ); Choi, JongSuk ( <i>Korea Institute of Science and Technology</i> ); Lim, Yoonseob* ( <i>Korea Institute of Science and Technology</i> )	10:45-11:00	FrBT20.4	<b>Assessment of Respiratory Muscle Activity with Surface Electromyographic Signals Acquired by Concentric Ring Electrodes</b> Ràfols-de-Urquía, Magda ( <i>Institut de Bioenginyeria de Catalunya (IBEC)</i> ); Estévez-Piorno, Josep ( <i>Institut de Bioenginyeria de Catalunya (IBEC)</i> ); Estrada, Luis ( <i>Institut de Bioenginyeria de Catalunya</i> ); Garcia-Casado, Javier ( <i>Universitat Politècnica de València</i> ); Prats-Boluda, Gema ( <i>Universitat Politècnica de València</i> ); Sarlabous, Leonardo ( <i>Institute for Bioengineering of Catalonia (IBEC)</i> ); Jané, Raimon ( <i>Institut de Bioenginyeria de Catalunya (IBEC)</i> ); Torres, Abel* ( <i>Institute for Bioengineering of Catalonia (IBEC) - BarcelonaTech (UPC)</i> )
10:30-10:45	FrBT19.3	<b>Obstructive Sleep Apnea Detection using Difference in Feature and Modified Minimum Distance Classifier</b> Shi, Wen ( <i>Nanyang Technological Univ.</i> ); Xue, Bing ( <i>Singapore MIT Alliance for Research and Technology</i> ); Guo, shuli ( <i>Nanyang Technological Univ.</i> ); Goh, Daniel ( <i>National Univ. Hospital</i> ); Ser, Wee* ( <i>Nanyang Technological Univ.</i> )	11:00-11:15	FrBT20.5	<b>A Fiducial Scaffold for ECG Compression in Low-Powered Devices</b> Birjiniuk, Jonathan* ( <i>Massachusetts Institute of Technology</i> ); Gordhandas, Ankit ( <i>Massachusetts Institute of Technology</i> ); Verghese, George ( <i>Massachusetts Institute of Technology</i> ); Heldt, Thomas ( <i>Massachusetts Institute of Technology</i> )
10:45-11:00	FrBT19.4	<b>Ballistocardiogram based Identity Recognition: Towards Zero-Effort Health Monitoring in an Internet-of-Things (IoT) Environment</b> Javaid, Abdul Qadir ( <i>Univ. of Toronto</i> ); Chang, Isaac Sungjae* ( <i>Univ. of Toronto</i> ); Mihailidis, Alex ( <i>Univ. of Toronto</i> )	11:15-11:30	FrBT20.6	<b>Anti-Windup and Disturbance Rejection Controller Design of an Automated Oxygen Control System for Premature Infants</b> Hou, Xuefeng ( <i>University of Missouri</i> ); Faqeeh, Akram ( <i>University of Missouri-Columbia</i> ); Shinn, Tyler ( <i>University of Missouri</i> ); Fales, Roger* ( <i>University of Missouri</i> )
11:00-11:15	FrBT19.5	<b>A Multimodal Virtual Keyboard using Eye-Tracking and Hand Gesture Detection</b> Cecotti, Hubert* ( <i>California State Univ. Fresno</i> ); Meena, Yogesh Kumar ( <i>Ulster Univ.</i> ); Prasad, Girijesh ( <i>Univ. of Ulster</i> )	FrCT1: 13:30-15:00 Meeting Room 311 <b>Neural Interfaces (II) (Theme 6) (Oral Session)</b>		
11:15-11:30	FrBT19.6	<b>A Gaze-Based Virtual Keyboard using a Mouth Switch for Command Selection</b> Sanjay, Soundarajan ( <i>California State University Fresno</i> ); Cecotti, Hubert* ( <i>California State University Fresno</i> )	13:30-13:45	FrCT1.1	<b>A Modular Implant System for Multimodal Recording and Manipulation of the Primate Brain</b> Kleinbart, Jessica ( <i>New York University</i> ); Orsborn, Amy ( <i>University of California Berkeley</i> ); Choi, John ( <i>New York University</i> ); Qiao, Shaoyu ( <i>New York University</i> ); Wang, Charles ( <i>Duke University</i> ); Viventi, Jonathan ( <i>Duke University</i> ); Pesaran, Bijan* ( <i>New York University</i> )
FrBT20: 10:00-11:30 Meeting Room 325B <b>Smart Cardiorespiratory Devices and Sensors (Theme 5) (Oral Session)</b> <b>Chair:</b> Chbat, Nicolas W. ( <i>Quadrus Medical Technologies</i> ) <b>Co-Chair:</b> Sunagawa, Kenji ( <i>Kyushu University</i> )			13:45-14:00	FrCT1.2	<b>A Wireless Smartphone Controlled, Battery Powered, Head Mounted Light Delivery System for Optogenetic Stimulation</b> Mazaheri Kouhani, Mohammad Hossein* ( <i>Michigan State University</i> ); Luo, Rui ( <i>Tsinghua University</i> ); Madi, Fatma ( <i>Michigan State University</i> ); Weber, Arthur ( <i>Michigan State University</i> ); Li, Wen ( <i>Michigan State University</i> )
10:00-10:15	FrBT20.1	<b>A 0.9m Long 0.5gf Resolution Catheter-based Force Sensor for Real-Time Force Monitoring of Cardiovascular Surgery</b> Jeon, Sangkuk* ( <i>Yonsei University</i> ); Lee, JiYong ( <i>Yonsei University</i> ); Ryu, WonHyoung ( <i>Yonsei University</i> ); Chae, Youngcheol ( <i>Yonsei University</i> )	14:00-14:15	FrCT1.3	<b>Effect of Asymmetric, Charge Balanced Stimuli on Elicited Compound Neural Action Potentials</b> Delgado, Francisco (Dr.) ( <i>University of Florida</i> ); Kundu, Aritra ( <i>University of Florida</i> ); Patrick, Erin ( <i>University of Florida</i> ); Otto, Kevin* ( <i>University of Florida</i> )
10:15-10:30	FrBT20.2	<b>Assessment of Inspiratory Muscle Activation using Surface Diaphragm Mechanomyography and Crural Diaphragm Electromyography</b> Lozano-García, Manuel ( <i>Institute for Bioengineering of Catalonia (IBEC)</i> , <i>The Barcelona Institute of Science and Technology (BIST)</i> ); Sarlabous, Leonardo ( <i>Institute for Bioengineering of Catalonia (IBEC)</i> ); Moxham, John ( <i>King's College London</i> ); F Rafferty, Gerrard ( <i>King's College Hospital NHS Foundation Trust, King's Health Partners</i> ); Torres, Abel ( <i>Institute for Bioengineering of Catalonia (IBEC) - BarcelonaTech (UPC)</i> ); J Jolley, Caroline ( <i>King's College Hospital NHS Foundation Trust, King's Health Partners</i> ); Jané, Raimon* ( <i>Institut de Bioenginyeria de Catalunya (IBEC)</i> )	14:15-14:30	FrCT1.4	<b>Parylene Neural Probe with Embedded CMOS Multiplexing Amplifier</b> Forssell, Mats* ( <i>Carnegie Mellon University</i> ); Fedder, Gary K. ( <i>Carnegie Mellon University</i> )
10:30-10:45	FrBT20.3	<b>Comparison of Automated and Manual Peripheral Oxygen Saturation Control Applied to One Human Subject at a High Target Range</b> Faqeeh, Akram ( <i>University of Missouri-Columbia</i> ); Hou, Xuefeng ( <i>University of Missouri</i> ); Zaniiletti, Isabella ( <i>University of Missouri</i> ); Pardalos, John ( <i>University of Missouri</i> ); Amjad, Ramak ( <i>University of Missouri</i> ); Fales, Roger* ( <i>University of Missouri</i> )	14:30-14:45	FrCT1.5	<b>Magnetically Balanced Power and Data Telemetry for Mm-Scale Neural Implants</b> Mandloi, Neeraj Kumar* ( <i>NYU Abu Dhabi</i> ); Ha, Sohmyung ( <i>New York University Abu Dhabi</i> )

14:45-15:00	FrCT1.6	<b>Chronically Implantable Package based on Alumina Ceramics and Titanium with High-Density Feedthroughs for Medical Implants</b> Yang, Hangao ( <i>Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences</i> ); Wu, Tianzhun* ( <i>Shenzhen Institutes of Advanced Technology (SIAT), Chinese Academy of Sciences (CAS)</i> ); Zhao, Saisai ( <i>Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences</i> ); Xiong, Shanshan ( <i>Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences</i> ); Peng, Bo ( <i>Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences</i> ); Humayun, Mark ( <i>USC / Doheny Eye Institute</i> )	13:45-14:00	FrCT3.2	<b>Clumped Nuclei Segmentation with Adjacent Point Match and Local Shape-Based Image Analysis in Fluorescence Microscopy Images</b> Guo, Xiaoyuan* ( <i>Emory Univ.</i> ); Yu, Hanyi ( <i>Emory Univ.</i> ); Rossetti, Blair ( <i>Emory Univ.</i> ); Teodoro, George ( <i>Univ. of Brasilia</i> ); Brat, Daniel ( <i>Emory Univ.</i> ); Kong, Jun ( <i>Emory Univ.</i> )
FrCT2: 13:30-15:00		Meeting Room 312			
		<b>Novel Methods for the Detection and Prediction of Epileptic Seizures (Theme 1) (Oral Session)</b>			
13:30-13:45	FrCT2.1	<b>A Distributed Descriptor Characterizing Structural Irregularity of EEG Time Series for Epileptic Seizure Detection</b> Mei, Zhenning ( <i>Fudan University</i> ); Zhao, Xian ( <i>Fudan University</i> ); Chen, Hongyu ( <i>Technische Universiteit Eindhoven - TU/e</i> ); Chen, Wei* ( <i>Fudan University</i> )	14:00-14:15	FrCT3.3	<b>Segmentation of Both Diseased and Healthy Skin from Clinical Photographs in a Primary Care Setting</b> Codella, Noel* ( <i>IBM T.J. Watson Research Center</i> ); Anderson, Daren ( <i>Community Health Center, Inc.</i> ); Philips, Tyler ( <i>Community Health Center, Inc.</i> ); Porto, Anthony ( <i>Community Health Center, Inc.</i> ); Massey, Kevin ( <i>Community Health Center, Inc.</i> ); Snowdon, Jane ( <i>IBM Watson Health</i> ); Feris, Rogerio ( <i>IBM T. J. Watson Research Center</i> ); R Smith, John ( <i>IBM T.J. Watson Research Center</i> )
13:45-14:00	FrCT2.2	<b>An Unsupervised Methodology for the Detection of Epileptic Seizures using EEG Signals: A Multi-Dataset Evaluation</b> Tsiouris, Kostas ( <i>BioMedical Engineering Lab, School of Electrical and Computer Engineering, National Technical University of Athens</i> ); Konitsiotis, Spiros ( <i>Medical School, University of Ioannina</i> ); Markoula, Sofia ( <i>University of Ioannina</i> ); Koutsouris, Dimitrios ( <i>BioMedical Engineering Lab, School of Electrical and Computer Engineering, National Technical University of Athens</i> ); Fotiadis, Dimitrios I.* ( <i>University of Ioannina</i> )	14:15-14:30	FrCT3.4	<b>Automated Kidney Segmentation for Traumatic Injured Patients through Ensemble Learning and Active Contour Modeling</b> Farzaneh, Negar* ( <i>Univ. of Michigan</i> ); Sorousmehr, S.M.Reza ( <i>Univ. of Michigan, Ann Arbor</i> ); Patel, Hirenkumar ( <i>Univ. of Michigan</i> ); Wood, Alexander ( <i>Univ. of Michigan</i> ); Gryak, Jonathan ( <i>Univ. of Michigan</i> ); Fessell, David ( <i>Univ. of Michigan</i> ); Najarian, Kayvan ( <i>Univ. of Michigan - Ann Arbor</i> )
14:00-14:15	FrCT2.3	<b>Rapid Annotation of Seizures and Interictal-Ictal Continuum EEG Patterns</b> Jing, Jin ( <i>Massachusetts General Hospital</i> ); d'Angremont, Emile ( <i>University of Twente, Enschede, The Netherlands</i> ); Zafar, Sahar ( <i>Massachusetts General Hospital, Boston, MA</i> ); Rosenthal, Eric ( <i>MGH</i> ); Tabaeizadeh, Mohammad ( <i>Massachusetts General Hospital, Boston, MA</i> ); Ebrahim, Senan ( <i>Massachusetts General Hospital, Boston, MA</i> ); Dauwels, Justin ( <i>NTU</i> ); Westover, Brandon* ( <i>MGH / Harvard Medical School</i> )	14:30-14:45	FrCT3.5	<b>Segmentation of Cervical Nuclei using SLIC and Pairwise Regional Contrast</b> Saha, Ratna ( <i>Flinders University</i> ); Bajger, Mariusz ( <i>Flinders University</i> ); Lee, Gobert* ( <i>Flinders University</i> )
14:15-14:30	FrCT2.4	<b>MCA based Epilepsy EEG Classification using Time Frequency Domain Features</b> Mahapatra, Arindam Gajendra ( <i>Graduate School of Medicine, Yamaguchi Univ., Ube</i> ); Singh, Balbir ( <i>National Institute of Physiological Sciences</i> ); Horio, Keiichi* ( <i>Kyushu Institute of Technology</i> ); Wagatsuma, Hiroaki ( <i>Kyushu Institute of Technology</i> )	14:45-15:00	FrCT3.6	<b>OCT Fluid Segmentation using Graph Shortest Path and Convolutional Neural Network</b> Rashno, Abdolreza* ( <i>Lorestan University</i> ); Koozekanani, Dara ( <i>University of Minnesota</i> ); Parhi, Keshab ( <i>University of Minnesota</i> )
14:30-14:45	FrCT2.5	<b>Improved Detection and Classification of Convulsive Epileptic and Psychogenic Non-Epileptic Seizures using FLDA and Bayesian Inference</b> Kusmakar, Shitanshu* ( <i>Univ. of Melbourne</i> ); Karmakar, Chandan ( <i>Deakin Univ.</i> ); Yan, Bernard ( <i>The Royal Melbourne Hospital</i> ); O'Brien, Terence ( <i>The Royal Melbourne Hospital</i> ); Palaniswami, Marimuthu ( <i>Univ. of Melbourne</i> ); Muthuganapathy, Ramanathan ( <i>Indian Institute of Technology Madras</i> )	FrCT4: 13:30-15:00		
FrCT3: 13:30-15:00		Meeting Room 314			
		<b>Image Segmentation (Theme 2) (Oral Session)</b>			
13:30-13:45	FrCT3.1	<b>Fully Automatic Finger Extensor Tendon Segmentation in Ultrasound Images of the Metacarpophalangeal Joint</b> Martins, Nelson ( <i>Neadvance, Machine Vision, SA; Univ. do Porto</i> ); Sultan, Malik Saad ( <i>Univ. of Porto</i> ); Veiga, Diana ( <i>Neadvance Machine Vision SA</i> ); Ferreira, Manuel Joao ( <i>Univ. of Minho</i> ); Coimbra, Miguel* ( <i>Instituto de Telecomunicações / Univ. do Porto</i> )	Meeting Room 315		
			<b>Implantable Sensors (II) (Theme 7) (Oral Session)</b>		
			Chair: Kirchner, Jens ( <i>University of Erlangen-Nuremberg</i> )		
			13:30-13:45	FrCT4.1	<b>Temperature Compensated Fibre Bragg Grating Pressure Sensor for Ventricular Assist Devices</b> Stephens, Andrew* ( <i>Innovative Cardiovascular Engineering and Tech. Lab</i> ); Busch, Andrew ( <i>Griffith Univ.</i> ); Gregory, Shaun David ( <i>Queensland Univ. of Tech.</i> ); Salamonsen, Robert F ( <i>Alfred Hospital</i> ); Tansley, Geoff ( <i>Griffith Univ., Queensland, Australia</i> )
			13:45-14:00	FrCT4.2	<b>A Multi-Site Heart Pacing Study using Wirelessly Powered Leadless Pacemakers</b> Lyu, Hongming* ( <i>UCLA</i> ); John, Mathews ( <i>Texas Heart Institute</i> ); Burkland, David ( <i>Baylor College of Medicine</i> ); Greet, Brian ( <i>Baylor College of Medicine</i> ); Xi, Yutao ( <i>Texas Heart Institute</i> ); Sampaio, Luiz C. ( <i>Texas Heart Institute</i> ); Taylor, D. ( <i>Texas Heart Institute</i> ); Razavi, Mehdi ( <i>Texas Heart Institute</i> ); Babakhani, Aydin ( <i>UCLA</i> )
			14:00-14:15	FrCT4.3	<b>Abnormal Spontaneous Neuronal Discharge and Local Field Potential Both in Cortex and Striatum of a Non-Human Primate of Parkinson's Disease using Implantable Microelectrode Arrays</b> Wang, Mixia ( <i>Inst. of Elec., Chinese Academy of Sciences</i> ); Song, Yilin ( <i>State Key Lab of Transducer Tech., Inst. of Elec., Chinese Academy of Sciences</i> ); Zhang, Song ( <i>Inst. of Elec., Chinese Academy of Sciences</i> ); Xu, Shengwei ( <i>Inst. of Elec., Chinese Academy of Sciences</i> ); Xiao, Guihua ( <i>Univ. of Chinese Academy of Sciences</i> ); Li, Ziyue ( <i>Chinese Academy of Sciences, Inst.s of Elec.</i> ); Gao, Fei ( <i>Chinese Academy of Sciences, Inst.s of Elec.</i> ); Zhang, Yu ( <i>Chinese Academy of Sciences, Inst.s of Elec.</i> ); Yue, Feng ( <i>Xuanwu Hospital, Capital Medical Univ.</i> ); Chan, Piu ( <i>Xuanwu Hospital, Capital Medical Univ.</i> ); Cai, Xinxia* ( <i>Inst. of Elec., Chinese Academy of Sciences</i> )

14:15-14:30 FrCT4.4  
**Intracranial Pressure Sensor and Valve to Control Hydrocephalus**  
 Webster, John G\* (*University of Wisconsin-Madison*); Iskandar, Bermans (*University of Wisconsin-Madison*); Medow, Joshua (*University of Wisconsin-Madison*); Zhang, Xuan (*University of Wisconsin-Madison*); Guan, Chenxiao (*University of Wisconsin-Madison*); Yang, Zhe (*University of Wisconsin-Madison*)

14:30-14:45 FrCT4.5  
**Analysis of the Movement of ICD Leads during Cardiac Contraction as Determinant of Intracardiac Impedance**  
 Kirchner, Jens\* (*Univ. of Erlangen-Nuremberg*); Arnold, Martin (*Dept. of Cardiology, Univ. Hospital Erlangen, Erlangen, Germany*); Fischer, Georg (*Univ. of Erlangen-Nuremberg*)

14:45-15:00 FrCT4.6  
**A Super-Capacitive Pressure Sensor for a Urethral Catheter**  
 Ahmadi, Mahdi\* (*Univ. of Minnesota*); Zhang, Ye (*Univ. of Minnesota*); Rajamani, Rajesh (*Univ. of Minnesota*); Timm, Gerald W. (*Univ. of Minnesota*); Sezen, A. Serdar (*St. Cloud State Univ.*)

FrCT5: 13:30-15:00 Meeting Room 316A  
**Ultrasound Imaging – Elastography (Theme 2)** (Oral Session)  
**Chair:** Cerrolaza, Juan J. (*Imperial College London*)  
**Co-Chair:** Deeba, Farah (*University of British Columbia*)

13:30-13:45 FrCT5.1  
**In Vivo Estimation of the Young's Modulus in Normal Human Dermis**  
 Saavedra, Ana Cecilia (*Pontificia Univ. Católica del Perú*); Arroyo, Junior (*Pontificia Univ. Católica del Perú*); Zvietcovich, Fernando (*University of Rochester*); Lavarello, R. (*Pontificia Univ. Católica del Perú*); Castañeda, B.\* (*Pontificia Univ. Católica del Perú*)

13:45-14:00 FrCT5.2  
**The Structure of Human Sebaceous Glands and Its Relation to Skin Viscoelasticity**  
 Kumagai, Kazutoshi (*Tohoku University*); Yokoshiki, Saaya (*Tohoku University*); Kobayashi, Kazuto (*Honda Electronics Co., Ltd.*); Saijo, Yoshifumi\* (*Tohoku University*)

14:00-14:15 FrCT5.3  
**Miniaturization of External Mechanical Vibration for Shear Wave Elastography Imaging**  
 Donk, Felix (*Eindhoven University of Technology*); Yang, Heng (*Massachusetts Institute of Technology*); Anthony, Brian W.\* (*Massachusetts Institute of Technology*)

14:15-14:30 FrCT5.4  
**A Row-Column (RC) Addressed 2D Capacitive Micromachined Ultrasonic Transducer (CMUT) Array on a Glass Substrate: Preliminary Results**  
 Sanders, Jean Lunsford\* (*North Carolina State Univ.*); Wu, Xun (*North Carolina State Univ.*); Adelegan, Oluwafemi J. (*North Carolina State Univ.*); Mahmud, Marzana M. (*North Carolina State Univ.*); Yamaner, Feysel Yalcin (*North Carolina State Univ.*); Gallippi, Caterina (*The Univ. of North Carolina at Chapel Hill*); Oralkan, Omer (*North Carolina State Univ.*)

14:30-14:45 FrCT5.5  
**Objective Liver Fibrosis Estimation from Shear Wave Elastography**  
 Brattain, Laura\* (*MIT Lincoln Lab*); Telfer, Brian (*MIT Lincoln Lab*); Dhyan, Manish (*Massachusetts General Hospital*); Grajo, Joseph (*University of Florida College of Medicine*); Samir, Anthony Edward (*Harvard Medical School, Massachusetts General Hospital*)

14:45-15:00 FrCT5.6  
**Multiparametric QUS Analysis for Placental Tissue Characterization**  
 Deeba, Farah\* (*Univ. of British Columbia*); Ma, Manyou (*Univ. of British Columbia*); Pesteie, Mehran (*Univ. of British Columbia*); Terry, Jefferson (*Univ. of British Columbia*); Pugash, Denise (*Univ. of British Columbia*); Hutcheon, Jennifer A. (*Univ. of British Columbia*); Mayer, Chantal (*Univ. of British Columbia*); Salcudean, Septimiu E. (*Univ. of British Columbia*); Rohling, Robert (*Univ. of British Columbia*)

FrCT6: 13:30-15:00 Meeting Room 316B  
**Human Performance (II) (Theme 6)** (Oral Session)  
**Chair:** Petroff, Neil (*Tarleton State University*)

13:30-13:45 FrCT6.1  
**Research of the Regulation Effect of Transcranial Alternating Current Stimulation on Vigilant Attention**  
 Cui, Huanhuan (*Tianjin Univ.*); Wei, Jinwen (*Tianjin Univ.*); Ke, Yufeng (*Tianjin Univ.*); An, Xingwei (*Tianjin Univ.*); Sun, Chang (*Tianjin Univ.*); Xu, Minpeng (*Tianjin Univ.*); Qi, Hongzhi (*Tianjin Univ.*); Ming, Dong (*Tianjin Univ.*); Zhou, Peng\* (*Tianjin Univ.*)

13:45-14:00 FrCT6.2  
**A New Mathematical Force Model that Predicts the Force-Pulse Amplitude Relationship of Human Skeletal Muscle**  
 Ben Hmed, Abdennacer\* (*Lab Le2i, FRE CNRS 2005, University de Bourgogne*); Bakir, Toufik (*LE2I UMR CNRS 5158 Université de Bourgogne*); Sakly, Anis (*Unit ESIER in the National School of Engineers of Monastir, University of Monastir*); Binczak, Stéphane (*Université de Bourgogne*)

14:00-14:15 FrCT6.3  
**Virtual Reality for Activities of Daily Living Training in Neurorehabilitation: A Usability and Feasibility Study in Healthy Participants**

Gerber, Stephan Moreno\* (*University of Bern*); Müri, René (*Gerontechnology and Rehabilitation Group, University Hospital of Neurology, University of Bern*); Mosimann, Urs Peter (*Gerontechnology and Rehabilitation Group, University Hospital of Old Age Psychiatry, University of Bern*); Nef, Tobias (*Gerontechnology and Rehabilitation, ARTORG Center for Biomedical Engineering Research, University of Bern, Switzerland*); Urwyler, Prabhitha (*University of Bern, ARTORG*)

14:15-14:30 FrCT6.4  
**Visually Impaired Users can Locate and Grasp Objects under the Guidance of Computer Vision and Non-Visual Feedback**  
 Mante, Nii Tete (*BuzzFeed*); Weiland, James\* (*Univ. of Michigan*)

14:30-14:45 FrCT6.5  
**A Sensor Fusion Approach for Inertial Sensors based 3D Kinematics and Pathological Gait Assessments: Toward an Adaptive Control of Stimulation in Post-Stroke Subjects**  
 Sijobert, Benoît\* (*INRIA*); Feuvrier, Francois (*CHU NIMES*); Froger, Jérôme (*CHU Nimes*); Guiraud, David (*INRIA*); Azevedo-Coste, Christine (*INRIA/LIRMM*)

14:45-15:00 FrCT6.6  
**Sleep Posture Classification using a Convolutional Neural Network**  
 Mahvash Mohammadi, Sara\* (*University of Surrey*); Alnowami, Majdi (*University of Surrey*); Khan, Sofia (*University of Surrey*); Dijk, Derk-Jan (*University of Surrey*); Hilton, Adrian (*University of Surrey*); Wells, Kevin (*University of Surrey*)

FrCT7: 13:30-15:00 Meeting Room 316C  
**Signal Processing and Classification of Movement-Related Signals (Theme 1)** (Oral Session)  
**Chair:** Li, Guanglin (*Shenzhen Institutes of Advanced Technology*)

13:30-13:45 FrCT7.1  
**Movement Speed Estimation based on Foot Acceleration Patterns**  
 Gradl, Stefan\* (*Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU)*); Zrenner, Markus (*Friedrich-Alexander-Universität Erlangen-Nürnberg*); Schulhaus, Dominik (*University of Erlangen-Nuremberg*); Wirth, Markus (*Friedrich Alexander University Erlangen-Nuremberg*); Cegiely, Tomek (*adidas AG*); Zwick, Constantin (*adidas AG*); Eskofier, Bjoern M (*Friedrich-Alexander-Universität Erlangen-Nürnberg*)



13:45-14:00	FrCT7.2	14:30-14:45	FrCT8.5
<b>Transfer Learning Approach for Fall Detection with the FARSEEING Real-World Dataset</b> Silva, Joana Raquel* ( <i>Fraunhofer Portugal AICOS</i> ); Sousa, Inês ( <i>Fraunhofer Portugal AICOS</i> ); Cardoso, Jaime S. ( <i>INESC TEC and University of Porto</i> )		<b>Customization of Synergy-Based FES for Post-Stroke Rehabilitation of Upper-Limb Motor Functions</b> Wang, Tong ( <i>Shanghai Jiao Tong Univ., School of BioMedical Engineering</i> ); Bao, Yong ( <i>Dept. of Rehabilitation Medicine, Ruijin Rehabilitation Hospital</i> ); Hao, Huaqing ( <i>Shanghai Jiao Tong Univ.</i> ); Zhang, Xiao ( <i>Ruijin Rehabilitation Hospital</i> ); Li, Si ( <i>Shanghai Jiao Tong Univ.</i> ); Xie, Qing ( <i>Ruijin Hospital Shanghai Jiao Tong Univ. School of Medicine</i> ); Lan, Ning ( <i>Shanghai Jiao Tong Univ.</i> ); Niu, Chuanxin M.* ( <i>Ruijin Hospital, School of Medicine, Shanghai Jiao Tong Univ.</i> )	
14:00-14:15	FrCT7.3	14:45-15:00	FrCT8.6
<b>A Novel Time-Domain Descriptor for Improved Prediction of Upper Limb Movement Intent in EMG-PR System</b> Samuel, Oluwarotimi Williams ( <i>Shenzhen Institutes of Advanced Tech.</i> ); Asogbon, Mojisola Grace ( <i>Shenzhen Institutes of Advanced Tech., Chinese Academy of Sciences</i> ); Geng, Yanjuan ( <i>Shenzhen Institutes of Advanced Tech.</i> ); Chen, Shixiong ( <i>Shenzhen Institutes of Advanced Tech.</i> ); Fang, Peng ( <i>Shenzhen Institutes of Advanced Tech., Chinese Academy of Sciences</i> ); Lin, Chuang ( <i>Shenzhen Institutes of Advanced Tech., Chinese Academy of Sciences</i> ); Wang, Lin ( <i>Shenzhen Institutes of Advanced Tech., Chinese Academy of Sciences</i> ); Li, Guanglin* ( <i>Shenzhen Institutes of Advanced Tech.</i> )		<b>Optimized tDCS for Targeting Multiple Brain Regions: An Integrated Implementation</b> Huang, Yu* ( <i>City College of New York</i> ); Thomas, Chris ( <i>Soterix Medical, Inc.</i> ); Datta, Abhishek ( <i>Soterix Medical, Inc.</i> ); Parra, Lucas C. ( <i>City College of New York</i> )	
14:15-14:30	FrCT7.4	FrCT9: 13:30-15:00 Meeting Room 318B <b>Adaptive and Kalman Filtering (Theme 1) (Oral Session)</b> Chair: Yana, Kazuo ( <i>Hosei University</i> ) Co-Chair: Leonhardt, Steffen ( <i>RWTH Aachen University</i> )	
<b>Hand Gesture Recognition with Inertial Sensors</b> Teachasrisaksakul, Krittameth* ( <i>Imperial College London</i> ); Wu, Li-Qun ( <i>Imperial College London</i> ); Yang, Guang-Zhong ( <i>Imperial College London</i> ); Lo, Benny ( <i>Imperial College London</i> )		13:30-13:45	FrCT9.1
14:30-14:45	FrCT7.5	<b>Efficient Modeling of Acoustic Feedback Path in Hearing Aids by Voice Activity Detector-Supervised Multiple Noise Injections</b> Mishra, Parth* ( <i>Univ. of Texas at Dallas</i> ); Tokgoz, Serkan ( <i>Univ. of Texas at Dallas</i> ); Panahi, Issa ( <i>Univ. of Texas at Dallas</i> )	
<b>Automated Finger Chase (ballistic Tracking) in the Assessment of Cerebellar Ataxia</b> Tran, Ha* ( <i>Deakin University</i> ); Pathirana, Pubudu N. ( <i>Deakin University</i> ); Horne, Malcolm ( <i>Florey Institute of Neuroscience and Mental Health</i> ); Power, Laura ( <i>Royal Victorian Eye and Ear Hospital</i> ); Szmulewicz, David ( <i>Victorian Eye and Ear Hospital</i> )		13:45-14:00	FrCT9.2
FrCT8: 13:30-15:00 Meeting Room 318A <b>Neural Stimulation (III) (Theme 6) (Oral Session)</b> Chair: Zouridakis, George ( <i>University of Houston</i> )		<b>A Simple Preprocessing Technique for ESPRIT Suitable for Non-Contact Vital Sensing using a Doppler Sensor</b> Kamiya, Yukihiro* ( <i>Aichi Prefectural University</i> )	
13:30-13:45	FrCT8.1	14:00-14:15	FrCT9.3
<b>Studying the Interactions in a Mammalian Nerve Fiber: A Functional Modeling Approach</b> Sadashivaiah, Vijay ( <i>Johns Hopkins University</i> ); Sacré, Pierre ( <i>Johns Hopkins University</i> ); Guan, Yun ( <i>Johns Hopkins University School of Medicine</i> ); Anderson, William S. ( <i>Johns Hopkins School of Medicine, Dept. of Neurosurgery</i> ); Sarma, Sridevi V.* ( <i>Johns Hopkins University</i> )		<b>Local Interval Estimation Improves Accuracy and Robustness of Heart Rate Variability Derivation from Photoplethysmography</b> Hoog Antink, Christoph* ( <i>RWTH Aachen University, Aachen, Germany</i> ); Leonhardt, Steffen ( <i>RWTH Aachen University</i> ); Walter, Marian ( <i>RWTH Aachen University</i> )	
13:45-14:00	FrCT8.2	14:15-14:30	FrCT9.4
<b>Correction of Toe-Walking Gait in Children with Spastic Cerebral Palsy by using Electrical Stimulation Therapy</b> Mukhopadhyay, Rupsha ( <i>Indian Institute of Technology, Kharagpur</i> ); Mahadevappa, Manjunatha* ( <i>Indian Institute of Technology Kharagpur</i> ); Prasanna, Lenka ( <i>National Institute for the Orthopaedically Handicapped</i> ); Biswas, Abhishek ( <i>National Institute for the Orthopaedically Handicapped</i> )		<b>A State-Space Approach for Detecting Stress from Electrodermal Activity</b> Wickramasuriya, Dilranjan ( <i>University of Houston</i> ); Qi, Chaoxian ( <i>University of Houston</i> ); Faghih, Rose T.* ( <i>University of Houston</i> )	
14:00-14:15	FrCT8.3	14:30-14:45	FrCT9.5
<b>Features of Referred Sensation Areas for Artificially Generated Sensory Feedback – A Case Study</b> Lontis, Eugen Romulus* ( <i>Aalborg University</i> ); Yoshida, Ken ( <i>Indiana University-Purdue University Indianapolis</i> ); Jensen, Winnie ( <i>Center for Sensory-Motor Interaction</i> )		<b>Combining Adaptive Filter and Phase Vocoder for Heart Rate Monitoring using Photoplethysmography during Physical Exercise</b> Xie, Qingsong ( <i>Shanghai Jiao Tong University</i> ); Zhang, Qirui ( <i>Shanghai Jiao Tong University</i> ); Wang, Guoxing* ( <i>Shanghai Jiao Tong University</i> ); Lian, Yong ( <i>York University</i> )	
14:15-14:30	FrCT8.4	14:45-15:00	FrCT9.6
<b>The Influence of Environment Stimulation on Learning and Memory Function in Rats with Medication Chemotherapy</b> Li, Jian-ping ( <i>Zunyi Medical University Zhuhai Campus</i> ); Li, Yuan-heng ( <i>The Zhuhai campus of the Zunyi Medical University</i> ); Su, Huan ( <i>Zunyi Medical University Zhuhai Campus</i> ); Zhao, Lei ( <i>Zunyi Medical University</i> ); Yu, Qianhengyuan ( <i>Zunyi Medical University</i> ); Lu, Wei ( <i>Zunyi Medical University, Zhuhai Campus</i> ); Yang, Lin* ( <i>Zhuhai campus, Zunyi Medical University</i> )		<b>A Heart Rate Driven Kalman Filter for Continuous Arousal Trend Monitoring</b> Bhattacharjee, Tanuka* ( <i>Research &amp; Innovation, Tata Consultancy Services, India</i> ); Datta, Shreyasi ( <i>Tata Consultancy Services</i> ); Das, Deepan ( <i>Tata Consultancy Services</i> ); Dutta Choudhury, Anirban ( <i>Tata Consultancy Services Ltd.</i> ); Pal, Arpan ( <i>Tata Consultancy Services</i> ); Ghosh, Prasanta ( <i>Indian Institute of Science</i> )	

FrCT10: 13:30-15:00 Meeting Room 319A  
**Video Imaging (Theme 2) (Oral Session)**  
**Chair:** Flotho, Philipp (Saarland University Faculty of Medicine)

13:30-13:45 FrCT10.1  
**Deep Motion Analysis for Epileptic Seizure Classification**  
 Ahmedt-Aristizabal, David\* (Queensland Univ. of Technology);  
 Nguyen, Kien (Queensland Univ. of Technology); Denman, Simon  
 (Queensland Univ. of Technology); Sridharan, Sridha  
 (Queensland Univ. of Technology); Dionisio, Sasha (Mater  
 Hospital); Fookes, Clinton (Queensland Univ. of Technology)

13:45-14:00 FrCT10.2  
**Extracting Thickness Profiles of Anterior Mitral Leaflets in  
 Echocardiography Videos**  
 Pires, Luiz (Universidade do Porto); Sultan, Malik Saad  
 (University of Porto); Martins, Nelson (Neadvance, Machine  
 Vision, SA; Universidade do Porto); Costa, Eva (Neadvance);  
 Veiga, Diana (Neadvance Machine Vision SA); Ferreira, Manuel  
 Joao (University of Minho); Mattos, Sandra (UCMF - Unidade de  
 Cardiologia e Medicina Fetal); Coimbra, Miguel\* (Instituto de  
 Telecomunicações / Universidade do Porto)

14:00-14:15 FrCT10.3  
**Lagrangian Motion Magnification Revisited: Continuous, Magnitude  
 Driven Motion Scaling for Psychophysiological Experiments**  
 Flotho, Philipp\* (Saarland University Faculty of Medicine);  
 Bhamborae, Mayur J. (Saarland University Faculty of Medicine);  
 Haab, Lars (Saarland University Hospital); Strauss, Daniel J.  
 (Saarland University, Medical Faculty)

14:15-14:30 FrCT10.4  
**A System for Accurate Tracking and Video Recordings of  
 Rodent Eye Movements using Convolutional Neural Networks  
 for Biomedical Image Segmentation**  
 Puri, Isha\* (Harvard University); Cox, David (Harvard University)

14:30-14:45 FrCT10.5  
**Bleeding Detection in Wireless Capsule Endoscopy Image  
 Video using Superpixel-Color Histogram and a  
 Subspace KNN Classifier**  
 Xing, Xiaohan\* (Chinese University of Hong Kong); Jia, Xiao  
 (Chinese University of Hong Kong); Meng, Max Q.-H. (Chinese  
 University of Hong Kong)

14:45-15:00 FrCT10.6  
**Detection of Atypical and Typical Infant Movements using  
 Computer-Based Video Analysis**  
 Orlandi, Silvia\* (Holland Bloorview Kids Rehabilitation Hospital);  
 Raghuram, Kamini (The Hospital for Sick Children); Smith,  
 Corinna (Univ. of Waterloo); Mansueto, David (Flinders Univ.);  
 Church, Paige (Sunnybrook Health Sciences Centre); Shah,  
 Vibhuti (Mount Sinai Hospital); Luther, Maureen (Sunnybrook  
 Health Sciences Centre); Chau, Tom (Univ. of Toronto)

FrCT11: 13:30-15:00 Meeting Room 319B  
**Neurorehabilitation (Theme 6) (Oral Session)**

13:30-13:45 FrCT11.1  
**Cooperative Cooking: A Novel Virtual Environment for  
 Upper Limb Rehabilitation**  
 Gorsic, Maja (University of Wyoming); Tran, Minh Ha (University  
 of Wyoming); Novak, Domen\* (University of Wyoming)

13:45-14:00 FrCT11.2  
**Selective Relay of Afferent Sensory Induced Action  
 Potentials from Peripheral Nerve to Brain and the  
 Effects of Electrical Stimulation**  
 Sadashivaiah, Vijay (Johns Hopkins University); Sacré, Pierre  
 (Johns Hopkins University); Guan, Yun (Johns Hopkins University  
 School of Medicine); Anderson, William S. (Johns Hopkins School  
 of Medicine, Dept. of Neurosurgery); Sarma, Sri Devi V.\* (Johns  
 Hopkins University)

14:00-14:15 FrCT11.3  
**Quantitative EEG as Biomarkers for the Monitoring of Post-  
 Stroke Motor Recovery in BCI and tDCS Rehabilitation**  
 Mane, Ravikiran\* (Nanyang Technological University); Chew,  
 Effie (National University Health System); Phua, Kok Soon  
 (Institute for Infocomm Research); Ang, Kai Keng (Institute for  
 Infocomm Research); A. P., Vinod (Indian Institute of Technology  
 Palakkad); Guan, Cuntai (Nanyang Technological University)

14:15-14:30 FrCT11.4  
**Elbow Training Device using the Mechanically Adjustable  
 Stiffness Actuator (MASA)**  
 Choi, Junho\* (Korea Institute of Science and Technology);  
 Son, Choonghyun (Korea Institute of Science and Technology);  
 Park, Seunghan (Korea Institute of Science and Technology);  
 Jung, Euiwook (Rainbow Co.); Yu, Dongyoun (Korea Institute of  
 Science and Technology)

14:30-14:45 FrCT11.5  
**Towards Robot-Based Cognitive and Motor Assessment  
 across the HIV-Stroke Spectrum**  
 Bui, Kevin\* (University of Pennsylvania); Johnson, Michelle  
 (University of Pennsylvania)

14:45-15:00 FrCT11.6  
**Electrocorticographic Activity of the Brain during Micturition**  
 Tran, Tracie (University of California Irvine); Wang, Po T.  
 (University of California Irvine); Lee, Brian (University of Southern  
 California); Liu, Charles Y. (Keck Hospital of the University of  
 Southern California); Kreydin, Evgeniy (University of Southern  
 California); Nenadic, Zoran (University of California Irvine);  
 Do, An H.\* (University of California Irvine)

FrCT12: 13:30-15:00 Meeting Room 321A  
**Blood Pressure Measurement (Theme 5) (Oral Session)**  
**Chair:** Mukkamala, Ramakrishna (Michigan State University)

13:30-13:45 FrCT12.1  
**Power Spectral Analysis of Short-Term Blood Pressure Recordings  
 for Assessing Daily Variations of Blood Pressure in Human**  
 Kinoshita, Hiroyuki (Omron Healthcare Co., Ltd.); Mannoji, Hiroshi  
 (Kyushu University); Saku, Keita\* (Kyushu University); Mano,  
 Jumpei (Omron Healthcare Co., Ltd.); Miyamoto, Tadayoshi  
 (Morinomiya University of Medical Sciences); Todaka, Koji  
 (Kyushu University); Kishi, Takuya (Kyushu University Graduate  
 School of Medical Sciences); Kanaya, Shigehiko (Nara Institute of  
 Science and Technology); Sunagawa, Kenji (Kyushu University)

13:45-14:00 FrCT12.2  
**Non-Invasive Continuous-Time Blood Pressure Estimation from  
 a Single Channel PPG Signal using Regularized ARX Models**  
 Acciaroli, Giada\* (University of Padova); Facchinetti, Andrea  
 (University of Padova); Pilonetto, Gianluigi (University of  
 Padova); Sparacino, Giovanni (University of Padova)

14:00-14:15 FrCT12.3  
**Continuous Blood Pressure Monitoring Algorithm using  
 Laser Doppler Flowmetry**  
 Kim, Insoo\* (Univ. of Connecticut Health Center); Hossain, Md Faruk  
 (Univ. of Connecticut Health Center); Bhagat, Yusuf (Jabil Inc.)

14:15-14:30 FrCT12.4  
**Sensitivity of Video-Based Pulse Arrival Time to  
 Dynamic Blood Pressure Changes**  
 Shirbani, Fatemeh (Macquarie University, Faculty of Medicine and  
 Health Sciences); Blackmore, Conner (Macquarie University);  
 Kazzi, Christina (Macquarie University); Tan, Isabella (Macquarie  
 University); Butlin, Mark (Macquarie University); Avolio, Alberto P\*  
 (Macquarie University)

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14:30-14:45	FrCT12.5	<b>The Calibration Method for Blood Pressure Pulse Wave Measurement based on Arterial Tonometry Method</b> Shimura, Koichi* ( <i>Chuo University</i> ); Hori, Masataka ( <i>Chuo University</i> ); Dohi, Tetsuji ( <i>University of Tokyo</i> ); Takao, Hiroyuki ( <i>Jikei University School of Medicine</i> )	FrCT14: 13:30-15:00	Meeting Room 322AB <b>Stimulation and Neuromodulation (I) (Theme 9)</b> (Oral Session) <b>Chair:</b> KenKnight, Bruce ( <i>University of Minnesota</i> ) <b>Co-Chair:</b> Srimathveeravalli, Govindarajan ( <i>Memorial Sloan-Kettering Cancer Center</i> )
14:45-15:00	FrCT12.6	<b>Effect of Respiration on the Characteristic Ratios of Oscillometric Pulse Amplitude Envelope in Blood Pressure Measurement</b> Gui, Yihan ( <i>Southern Univ. of Science and Technology</i> ); Chen, Fei* ( <i>Southern Univ. of Science and Technology</i> ); Murray, Alan ( <i>Newcastle Univ.</i> ); Zheng, Dingchang ( <i>Anglia Ruskin Univ.</i> )	13:30-13:45	FrCT14.1 <b>Estimating the Quality of Electroconvulsive Therapy Induced Seizures using Decision Tree and Fuzzy Inference System Classifiers</b> Al-kaysi, Alaa* ( <i>University of Technology Sydney</i> ); Al-Ani, Ahmed ( <i>University of Technology, Sydney</i> ); Galvez, Veronica ( <i>University of NSW</i> ); Loo, Colleen ( <i>School of Psychiatry, University of New South Wales</i> ); Ling, Sai Ho, Steve ( <i>University of Technology Sydney</i> ); Boonstra, Tjeerd W. ( <i>University of New South Wales</i> )
FrCT13: 13:30-15:00	Meeting Room 321B	<b>Surgical Robotics (Theme 8)</b> (Oral Session) <b>Chair:</b> Mattos, Leonardo ( <i>Istituto Italiano di Tecnologia</i> )	13:45-14:00	FrCT14.2 <b>Electrical Interaction between Implantable Vagus Nerve Stimulation Device and Implantable Cardiac Rhythm Management Device</b> Libbus, Imad* ( <i>LivaNova</i> ); Mazar, Scott ( <i>LivaNova</i> ); Stubbs, Scott ( <i>LivaNova PLC</i> ); KenKnight, Bruce ( <i>University of Minnesota</i> )
13:30-13:45	FrCT13.1	<b>Real-Time Sclera Force Feedback for Enabling Safe Robot-Assisted Vitreoretinal Surgery</b> Ebrahimi, Ali* ( <i>Johns Hopkins Univ.</i> ); He, Changyan ( <i>Beihang Univ.</i> ); Roizenblatt, Marina ( <i>Johns Hopkins Univ.</i> ); Patel, Niravkumar ( <i>Johns Hopkins Univ.</i> ); Sefati, Shahriar ( <i>Johns Hopkins Univ.</i> ); Gehlbach, Peter ( <i>Johns Hopkins Medical Institute</i> ); Iordachita, Iulian ( <i>Johns Hopkins Univ.</i> )	14:00-14:15	FrCT14.3 <b>Acute Hemodynamic Effects of Vagus Nerve Stimulation in Conscious Hypertensive Rats</b> Annoni, Elizabeth ( <i>University of Minnesota</i> ); Tolacheva, Elena* ( <i>University of Minnesota</i> )
13:45-14:00	FrCT13.2	<b>Novel Robotic Approach for Minimally Invasive Aortic Heart Valve Surgery</b> Tamadon, Izadyar ( <i>Scuola Superiore Sant'Anna</i> ); Soldani, Giorgio ( <i>Consiglio Nazionale delle Ricerche, Istituto di Fisiologia Clinica (CNR)</i> ); Dario, Paolo ( <i>Scuola Superiore Sant'Anna</i> ); Menciassi, Arianna* ( <i>Scuola Superiore Sant'Anna</i> )	14:15-14:30	FrCT14.4 <b>Neurophysiologic and Chronic Safety Testing of a Miniaturized Active Implanted Device with Integrated Electrodes for Bioelectronic Medicine Applications</b> Levine, Yaakov* ( <i>SetPoint Medical, Inc.</i> ); Simon, Jesse ( <i>SetPoint Medical, Inc.</i> ); Faltys, Michael ( <i>SetPoint Medical, Inc.</i> )
14:00-14:15	FrCT13.3	<b>Non-Contact Tissue Ablations with High-Speed Laser Scanning in Endoscopic Laser Microsurgery</b> Acemoglu, Alperen* ( <i>Istituto Italiano di Tecnologia</i> ); Mattos, Leonardo ( <i>Istituto Italiano di Tecnologia</i> )	14:30-14:45	FrCT14.5 <b>A 41.2 nJ/class, 32-Channel On-Chip Machine Learning Classifier for Epileptic Seizure Detection</b> Taghavi, Milad* ( <i>California Institute of Technology</i> ); Allahgholizade Haghi, Benyamin ( <i>California Institute of Technology</i> ); Farivar, Masoud ( <i>Google</i> ); Shooran, Mahsa ( <i>Cornell University</i> ); Emami, Azita ( <i>Caltech</i> )
14:15-14:30	FrCT13.4	<b>Evaluation of a Force-Sensing Handheld Robot for Assisted Retinal Vein Cannulation</b> Gonenc, Berk* ( <i>Johns Hopkins Univ.</i> ); Patel, Niravkumar ( <i>Johns Hopkins Univ.</i> ); Iordachita, Iulian ( <i>Johns Hopkins Univ.</i> )	14:45-15:00	FrCT14.6 <b>A Novel Numerical Approach to Stimulation of a Specific Brain Region using Transcranial Focused Ultrasound</b> Park, Tae Young ( <i>Korea Institute of Science and Technology (KIST)</i> ); Park, Ki Joo ( <i>Center for Bionics, BioMedical Research Institute, Korea Institute of Science and Technology KIST</i> ); Kim, Hyungmin* ( <i>Korea Institute of Science and Technology</i> )
14:30-14:45	FrCT13.5	<b>Adaptation of Translated Frame-Based Approach for Forward Kinematics in a Radiosurgical Snake-Like Robot</b> Omisore, Olatunji Mumini* ( <i>Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences</i> ); Shipeng, Han ( <i>Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences</i> ); Ren, Lingxue ( <i>Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences</i> ); Zhao, Zhichun ( <i>Chengdu University of Technology, Chengdu</i> ); Wang, Lei ( <i>Shenzhen Institutes of Advanced Technology</i> )	FrCT16: 13:30-15:00	Meeting Room 323B <b>General and Theoretical Informatics – Deep Learning and Big Data to Knowledge (Theme 10)</b> (Oral Session)
14:45-15:00	FrCT13.6	<b>Robotics-Assisted Surgical Skills Evaluation based on Electrocardiac Activities</b> Shahbazi, Mahya* ( <i>The University of Western Ontario, Canadian Surgical Technologies and Advanced Robotics (CSTAR)</i> ); Poursartip, Behnaz ( <i>Western University</i> ); Siroen, Karen ( <i>London Health Sciences Centre</i> ); Schlachta, Christopher ( <i>Western University</i> ); Patel, Rajni ( <i>London Health Sciences Centre</i> )	13:30-13:45	FrCT16.1 <b>Deep Learning for Medication Assessment of Individuals with Parkinson's Disease using Wearable Sensors</b> Hssayeni, Murtadha Dawood ( <i>University of Technology-Baghdad</i> ); Adams, Jamie ( <i>University of Rochester and Center for Health + Technology (CHET)</i> ); Ghoraani, Behnaz* ( <i>Florida Atlantic University</i> )
			13:45-14:00	FrCT16.2 <b>Fusion of Deep Convolutional Neural Networks for Microaneurysm Detection in Color Fundus Images</b> Harangi, Balazs* ( <i>Univ. of Debrecen</i> ); Toth, Janos ( <i>Univ. of Debrecen, Faculty of Informatics</i> ); Hajdu, Andras ( <i>Univ. of Debrecen</i> )

14:00-14:15 FrCT16.3  
**Predicting Lymph Node Metastasis in Head and Neck Cancer by Combining Many-Objective Radiomics and 3-Dimensional Convolutional Neural Network through Evidential Reasoning**  
 Zhou, Zhiguo\* (UT Southwestern Medical Center); Liyuan, Chen (UT Southwestern Medical Center); Sher, David (UT Southwestern Medical Center); Qiongwen, Zhang (UT Southwestern Medical Center); Jeener, Shah (UT Southwestern Medical Center); Nhat-Long, Pham (UT Southwestern Medical Center); Steve, Jiang (UT Southwestern Medical Center); Wang, Jing (University of Texas Southwestern Medical Center)

14:15-14:30 FrCT16.4  
**Deep Residual Networks for Automatic Sleep Stage Classification of Raw Polysomnographic Waveforms**  
 Olesen, Alexander Neergaard\* (Technical University of Denmark); Jennum, Poul (University of Copenhagen, Denmark); Peppard, Paul (University of Wisconsin School of Medicine and Public Health); Mignot, Emmanuel (Stanford University); Sorensen, Helge B D (Technical University of Denmark)

14:30-14:45 FrCT16.5  
**Predict In-Hospital Code Blue Events using Monitor Alarms through Deep Learning Approach**  
 Xiao, Ran\* (Univ. of California San Francisco); King, Johnathan (Univ. of California, San Francisco); Villaroman, Andrea (Univ. of California, San Francisco); Do, Duc H. (Univ. of California Los Angeles); Boyle, Noel G. (Univ. of California Los Angeles); Hu, Xiao (Univ. of California, San Francisco)

14:45-15:00 FrCT16.6  
**Personalized Prediction of Asthma Severity and Asthma Attack for a Personalized Treatment Regimen**  
 Do, Quan\* (New Mexico State University); Doig, Alexa (New Mexico State University); Tran, Son (New Mexico State University); Chaudri, Jamil (Marshall University)

FrCT17: 13:30-15:00 Meeting Room 323C  
**Optical and Photonic Sensors (Theme 7) (Oral Session)**

13:30-13:45 FrCT17.1  
**Temperature Profiling of Ex-Vivo Organs during Ferromagnetic Nanoparticles-Enhanced Radiofrequency Ablation by Fiber Bragg Grating Arrays**  
 Jelbuldina, Madina\* (Nazarbayev University); Korganbayev, Sanzhar (Nazarbayev University); Korobeinyk, Alina (Nazarbayev University); Inglezak, Vassilis (Nazarbayev University); Tosi, Daniele (Nazarbayev University)

13:45-14:00 FrCT17.2  
**Doubling the Signal Quality of Smartphone Camera Pulse Oximetry using the Display Screen as a Controllable Selective Light Source**  
 Holz, Christian\* (Microsoft Research); Ofek, Eyal (Microsoft Research)

14:00-14:15 FrCT17.3  
**Towards Finger Motion Capture System using FBG Sensors**  
 Jang, Minsu (Korea Institute of Science and Technology); Kim, Junsik (Korea Institute of Science and Technology); Kang, Kyumin (Korea Institute of Science and Technology); Kim, Jinseok (Korea Institute of Science and Technology); Yang, Sungwook\* (Korea Institute of Science and Technology)

14:15-14:30 FrCT17.4  
**Dental pH Opti-Wand (DpOW): Measuring Oral Acidity to Guide Enamel Preservation**  
 Sharma, Manuja\* (Univ. of Washington); Carson, Matthew D. (Univ. of Washington); Graham, Jasmine Y. (Univ. of Washington); Nelson, Leonard Y. (Univ. of Washington); Patel, Shwetak (Univ. of Washington); Seibel, Eric (Univ. of Washington)

FrCT18: 13:30-15:00 Meeting Room 324  
**Wearable Body Sensor Networks (Theme 7) (Oral Session)**  
**Chair:** Bose, Pritam (University of Oslo and Oslo University Hospital)

13:30-13:45 FrCT18.1  
**Performance Evaluation and Improvement of PER and Throughput in Galvanic-Coupling Intra-Body Communication Systems**  
 Ito, Kenichi\* (Niigata Institute of Technology)

13:45-14:00 FrCT18.2  
**Wireless Channel Modeling for Leadless Cardiac Pacemaker: Effects of Ventricular Blood Volume**  
 Bose, Pritam\* (Univ. of Oslo and Oslo Univ. Hospital); Khaleghi, Ali (Oslo Univ. Hospital); Balasingham, Ilango (Oslo Univ. Hospital and Norwegian Univ. of Science and Technology)

14:00-14:15 FrCT18.3  
**Development of a Novel Wearable Ring-Shaped Biosensor**  
 Santarelli, Luca (Scuola Superiore Sant'Anna); Diyakonova, Olga (Scuola Superiore Sant'Anna); Betti, Stefano (Scuola Superiore Sant'Anna); Esposito, Dario (Scuola Superiore Sant'Anna); Castro, Emanuela (Scuola Superiore Sant'Anna); Cavallo, Filippo\* (Scuola Superiore Sant'Anna)

14:15-14:30 FrCT18.4  
**Characterization and Classification of Human Body Channel as a Function of Excitation and Termination Modalities**  
 Maity, Shovan\* (Purdue University); Das, Debayan (Purdue University); Chatterjee, Baibhab (Purdue University); Sen, Shreyas (Purdue University)

14:30-14:45 FrCT18.5  
**A Method of Secure Compressed Sensing for Physiological Signals in Healthcare Internet-of-Things Applications**  
 Chen, Zeqi (Ningbo Univ. of Technology); Chen, Jiahai (Ningbo Univ. of Technology); Chen, Meng (Ningbo Univ. of Technology); Bao, Shu-Di\* (Ningbo Univ. of Technology)

14:45-15:00 FrCT18.6  
**Channel Loss in Contactless Human Body Communication**  
 Mao, Jingna\* (Tsinghua Univ.); Yang, Huazhong (Tsinghua Univ.); Lian, Yong (York Univ.); Zhao, Bo (Zhejiang Univ.)

FrCT20: 13:30-15:00 Meeting Room 325B  
**Motor Neuroprostheses (I) (Theme 6) (Oral Session)**

13:30-13:45 FrCT20.1  
**Predicting Beta Bursts from Local Field Potentials to Improve Closed-Loop DBS Paradigms in Parkinson's Patients**  
 Martin Moraud, Eduardo\* (University of Oxford); Tinkhauser, Gerd (University of Oxford); Agrawal, Mayank (Swarthmore College); Brown, Peter (Director of the Medical Research Council Brain Network Dynamics Unit at the University of Oxford, and Professor of Experimental); Bogacz, Rafal (University of Oxford)

13:45-14:00 FrCT20.2  
**Data Driven Spatial Filtering can Enhance Abstract Myoelectric Control in Amputees**  
 Dyson, Matthew (Newcastle University); Nazarpour, Kianoush\* (Newcastle University)

14:00-14:15 FrCT20.3  
**Continuous versus Discrete Simultaneous Control of Prosthetic Fingers**  
 Krasoulis, Agamemnon\* (Newcastle University); Vijayakumar, Sethu (The University of Edinburgh); Nazarpour, Kianoush (Newcastle University)

14:15-14:30 FrCT20.4  
**Identifying Multiscale Hidden States to Decode Behavior**  
 Abbaspourazad, Hamidreza\* (University of Southern California); Wong, Yan Tat (Monash University); Pesaran, Bijan (New York University); Shanechi, Maryam (University of Southern California)

14:30-14:45	FrCT20.5	17:15-19:00	FrPoS-01.8
<b>Improved Training Paradigms and Motor-Decode Algorithms: Results from Intact Individuals and a Recent Transradial Amputee with Prior Complex Regional Pain Syndrome</b> George, Jacob A.* ( <i>University of Utah</i> ); Brinton, Mark ( <i>University of Utah</i> ); Duncan, Christopher ( <i>University of Utah</i> ); Hutchinson, Douglas ( <i>University of Utah</i> ); Clark, Gregory ( <i>University of Utah</i> )		<b>Kick LL: A Smartwatch for Monitoring Respiration and Heart Rate using Photoplethysmography</b> Hoilett, Orlando* ( <i>Purdue University</i> ); Twibell, Ashlyn ( <i>Purdue University</i> ); Srivastav, Rohit ( <i>Purdue University</i> ); Linnes, Jacqueline Callihan ( <i>Purdue University</i> )	
14:45-15:00	FrCT20.6	FrPoS-02: 17:15-19:00 Exhibit Hall 2 <b>Chemo / Bio Sensing – Poster (Theme 7) (Poster Session)</b>	
<b>A Pilot Study on using Forcemymography to Record Upper-Limb Movements for Human-Machine Interactive Control</b> Zhang, Nanxin ( <i>University of Chinese Academy of Sciences</i> ); Li, Xiangxin ( <i>Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences</i> ); Samuel, Oluwarotimi Williams ( <i>Shenzhen Institutes of Advanced Technology</i> ); Huang, Pin-Gao ( <i>Chinese Academy of Sciences</i> ); Fang, Peng* ( <i>Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences</i> ); Li, Guanglin ( <i>Shenzhen Institutes of Advanced Technology</i> )		17:15-19:00 FrPoS-02.1 <b>A Novel Electrochemical Sensor for Non-Invasive Monitoring of Lithium Levels in Mood Disorders</b> Crisuolo, Francesca* ( <i>EPFL</i> ); Taurino, Irene ( <i>EPFL</i> ); Carrara, Sandro ( <i>EPFL - Swiss Federal Institute of Technology - Lausanne</i> ); De Micheli, Giovanni ( <i>EPFL</i> )	
FrPoS-01: 17:15-19:00 Exhibit Hall 2 <b>Cardiovascular Applications – Poster (Theme 7) (Poster Session)</b>		17:15-19:00 FrPoS-02.2 <b>Drinking Water Quality Monitoring: An Alternative Approach to Microbial Contamination Events</b> Simões, João Carlos Gomes ( <i>ChongQing Technology &amp; Business University (CBTU), University College of Southeast Norway (USN)</i> ); Dong, Tao* ( <i>University College of Southeast Norway - HSN, TekMar</i> ); Yang, Yili ( <i>Nanyang City Center Hospital</i> ); Silva, Carlos Alberto Batista ( <i>Universidade do Minho</i> )	
17:15-19:00	FrPoS-01.1	17:15-19:00 FrPoS-02.3 <b>Design and Fabrication of Graphene-Based Phototransistor for Drinking Water Monitoring System using Vibrio Fischeri</b> Zhang, Bo ( <i>Technology and Business Univ.</i> ); Dong, Tao* ( <i>Univ. College of Southeast Norway - HSN, TekMar</i> ); Simões, João Carlos Gomes ( <i>ChongQing Technology &amp; Business Univ. (CBTU), Univ. College of Southeast Norway (USN)</i> )	
<b>Finger-Wearable Blood Pressure Monitor</b> Narasimhan, Ravi* ( <i>Verily Life Sciences LLC</i> ); Parlikar, Tushar ( <i>Massachusetts Institute of Technology</i> ); Verghese, George ( <i>Massachusetts Institute of Technology</i> ); McConnell, Michael V. ( <i>Stanford School of Medicine</i> )		17:15-19:00 FrPoS-02.4 <b>A Precise Sampling Strip with Microstructures</b> Kamiya, Haruka* ( <i>Keio University</i> ); Ota, Takashi ( <i>Keio University</i> ); Yasuga, Hiroki ( <i>Keio University</i> ); Miki, Norihisa ( <i>University</i> )	
17:15-19:00	FrPoS-01.2	17:15-19:00 FrPoS-02.5 <b>Low Power Consumption Device for Biological Stability Monitoring in Drinking Water</b> Grønvald, Fredrik Sommerfelt ( <i>Univ. College of Southeast Norway</i> ); Simões, João Carlos Gomes ( <i>ChongQing Technology &amp; Business Univ. (CBTU), Univ. College of Southeast Norway (USN)</i> ); Berntsen, Helene ( <i>Univ. College of Southeast Norway</i> ); Roseng, Lars Eric ( <i>Univ. College of Southeast Norway</i> ); Dong, Tao* ( <i>Univ. College of Southeast Norway - HSN, TekMar</i> )	
<b>Using Moving Average Method to Recognize Systole and Diastole on Seismocardiogram without ECG Signal</b> Dinh, Anh* ( <i>University of Saskatchewan</i> ); Luu, Gia Loc ( <i>University of Saskatchewan</i> )		17:15-19:00 FrPoS-02.6 <b>Detection of Human Chorionic Gonadotropin (hCG) Hormone using Digital Lateral Flow Immunoassay</b> Hamad, Eyad* ( <i>German Jordanian University</i> ); Hawamdeh, Ghadeer ( <i>BioMedical Engineering Dept., German Jordanian University</i> ); Abu Jarad, Noor ( <i>BioMedical Engineering Dept., German Jordanian University</i> ); Yasin, Omar ( <i>BioMedical Engineering Dept., German Jordanian University</i> ); Al-Gharabli, Samer ( <i>Pharmaceutical and Chemical Engineering Dept., German Jordanian University</i> ); Shadfah, Raed ( <i>Atlas Medical Co. Sahab Free Zone Area, Amman</i> )	
17:15-19:00	FrPoS-01.3	17:15-19:00 FrPoS-02.7 <b>Hermetic Packaging for Implantable Microsystems: Effectiveness of Sequentially Electroplated AuSn Alloy</b> Szostak, Katarzyna Maria* ( <i>Imperial College London</i> ); Constandinou, Timothy ( <i>Imperial College of Science, Technology and Medicine</i> )	
<b>A Hybrid Hierarchical Framework for Free Weight Exercise Recognition and Intensity Measurement with Accelerometer and ECG Data Fusion</b> Qi, Jun* ( <i>Liverpool John Moores University</i> ); Yang, Po ( <i>Liverpool John Moores University</i> ); Waraich, Atif ( <i>Liverpool John Moores University</i> ); Hanneghan, Martin ( <i>Liverpool John Moores University</i> ); Tang, Stephen ( <i>Liverpool John Moores University</i> )		17:15-19:00 FrPoS-02.8 <b>Microfluidic Spectrophotometer for Neurotransmitter Detection based on Gold Nanoparticles: Preliminary Results</b> Niyonambaza, Shimwe Dominique* ( <i>Universite Laval</i> ); Boisselier, Elodie ( <i>Université Laval</i> ); Boukadoum, Mounir ( <i>University of Quebec at Montréal</i> ); Miled, Amine ( <i>Laval University</i> )	
17:15-19:00	FrPoS-01.4		
<b>A Low-Cost, Smartphone-Only Pulse Transit Time Measurement System using Cardio-Mechanical Signals and Optical Sensors</b> Yang, Chenxi ( <i>Stevens Institute of Technology</i> ); Dong, Yudi ( <i>Stevens Institute of Technology</i> ); Chen, Yingying ( <i>Rutgers University</i> ); Tavassolian, Negar* ( <i>Stevens Institute of Technology</i> )			
17:15-19:00	FrPoS-01.5		
<b>Detecting Cardiac Activity by Capacitive Electrodes from a Single Point on the Wrist</b> He, Shan* ( <i>University of Ottawa</i> ); Li, Xinde ( <i>Liodigital Corp., Toronto, ON Canada</i> ); Batkin, Izmail ( <i>Ottawa University</i> ); Dajani, Hilmi ( <i>University of Ottawa</i> ); Bolic, Miodrag ( <i>University of Ottawa</i> )			
17:15-19:00	FrPoS-01.6		
<b>Performance of Graphene ECG Electrodes under Varying Conditions</b> Beach, Christopher* ( <i>Univ. of Manchester</i> ); Karim, Nazmul ( <i>Univ. of Manchester</i> ); Casson, Alexander James ( <i>Univ. of Manchester</i> )			
17:15-19:00	FrPoS-01.7		
<b>Monitoring of Pulse Pressure and Arterial Pressure Waveform Changes during the Valsalva Maneuver by a Portable Ultrasound System</b> Seo, Joohyun* ( <i>Massachusetts Institute of Technology</i> ); Sodini, Charles ( <i>Massachusetts Institute of Technology</i> ); Lee, Hae-Seung ( <i>Massachusetts Institute of Technology</i> )			

FrPoS-03: 17:15-19:00 Exhibit Hall 2  
**Computational Modeling – Poster (Theme 9) (Poster Session)**

17:15-19:00 FrPoS-03.1  
**Electromagnetic Field Analysis of Low-Magnitude High-Frequency Vibrator with Multiple Plungers**  
 Chen, Zhimin (*University of Macau*); Vai, Mang I.\* (*University of Macau*); Pun, Sio Hang (*University of Macau*); Mak, Peng Un (*University of Macau*)

17:15-19:00 FrPoS-03.2  
**Occipital EEG Activity for the Detection of Nocturnal Hypoglycemia**  
 Ngo, Cuong Q.\* (*Swinburne University of Technology*); Truong, Bao C. Q. (*University of Technology Sydney*); Jones, Timothy (*Princess Margaret Hospital for Children*); Nguyen, Hung T. (*Swinburne University of Technology*)

17:15-19:00 FrPoS-03.3  
**Calculating RF-Induced Voltages for Implanted Medical Devices in MRI using Computational Human Models**  
 Brown, James\* (*MSEI*); Qiang, Rui (*Micro System Engineering Inc. (Biotronik)*); Stadnik, Paul (*Micro Systems Engineering, Inc.*); Stotts, Larry (*Biotronik*); Von Arx, Jeffrey (*Micro Systems Engineering, Inc.*)

17:15-19:00 FrPoS-03.4  
**Computer Aided Clinical Trials for Implantable Cardiac Devices**  
 Jang, Kuk Jin\* (*Univ. of Pennsylvania*); Weimer, James (*Univ. of Pennsylvania*); Abbas, Houssam (*Univ. of Pennsylvania*); Jiang, Zhihao (*Univ. of Pennsylvania*); Liang, Jackson (*Hospital of the Univ. of Pennsylvania*); Dixit, Sanjay (*Hospital of the Univ. of Pennsylvania*); Mangharam, Rahul (*Univ. of Pennsylvania*)

FrPoS-04: 17:15-19:00 Exhibit Hall 2  
**Diagnostic Devices and Physiological Monitoring (III) – Poster (Theme 9) (Poster Session)**

17:15-19:00 FrPoS-04.1  
**Classification of Therapeutic Hand Poses using Convolutional Neural Networks**  
 Anaz, Aws Hazim Saber\* (*Univ. of Missouri Columbia*); Skubic, Marjorie (*Univ. of Missouri*); Bridgeman, Jay (*Orthopaedic Surgery, Univ. of Missouri Columbia*); Brogan, David M. (*Dept. of Orthopaedic Surgery, Washington Univ. School of Medicine*)

17:15-19:00 FrPoS-04.2  
**KardiaTool: An Integrated POC Solution for Non-Invasive Diagnosis and Therapy Monitoring of Heart Failure Patients**  
 Tripoliti, Evanthia (*Univ. of Ioannina*); Karanasiou, Georgia (*Institute of Molecular Biology and Biotechnology, FORTH*); Ioannidou, Pinelopi (*Dept. of BioMedical Research, Institute of Molecular Biology and Biotechnology, FORTH*); Toumpaniaris, Petros (*National Technical Univ. of Athens*); Goletsis, Yorgos (*Univ. of Ioannina*); Bausells, Joan (*Instituto de Microelectrónica de Barcelona, IMB-CNM*); Lomonaco, Tommaso (*Univ. of Pisa, Dept. of Chemistry and Industrial Chemistry*); Pfeiffer, Norman (*Fraunhofer Institute for Integrated Circuits IIS*); Anastase, Raphaël (*BioTray*); Tsopela, Alike (*Micronit Microtechnologies B.V.*); Leekens, Boris (*Interuniversitair Microelectronica Centrum (IMEC)*); Naka, Katerina (*Univ. of Ioannina*); Lourme, Jean-Christophe (*ValoTec*); Salvo, Pietro (*National Research Council*); Liakopoulos, Trifon (*EnaChip inc*); Jordan, Jake (*Univ. of Surrey*); Gallagher, Joseph (*Univ. College Dublin, National Univ. of Ireland*); Abdelhamid, Errachid (*Université de Lyon, Institut de Sciences Analytiques (ISA)*); Fotiadis, Dimitrios I.\* (*Univ. of Ioannina*)

17:15-19:00 FrPoS-04.3  
**Analyses of Baropodometry Protocols through Bibliometric Research**  
 Gimenez, Francieli Vanessa (*Universidade Tecnológica Federal do Paraná*); Stadnik, Adriana Maria Wan\* (*UTFPR - Federal Technological University of Paraná*); Maldaner, Marcelo (*Federal University of Technology – Paraná*)

17:15-19:00 FrPoS-04.4  
**Comparison between Reheating Behavior in Women with Raynaud's Phenomenon and Not Diagnosed Women using Thermography**  
 Campos, Mariane\* (*Federal University Technology - Paraná*); Heimbecher, Catia (*Federal University Technology - Paraná*); Romaneli, Eduardo F. R. (*UTFPR - Federal University of Technology - Paraná*); Ripka, Wagner L. (*UTFPR - Federal Technological University of Paraná*); Ulbricht, Leandra (*UTFPR - Federal University of Technology - Paraná*); Stadnik, Adriana Maria Wan (*UTFPR - Federal Technological University of Paraná*)

17:15-19:00 FrPoS-04.5  
**Selective Collection and Condensation of Exhaled Breath for Glucose Detection**  
 Tankasala, Divya\* (*Purdue Univ.*); Ng, Gabriel (*Purdue Univ.*); Smith, Michael (*Purdue Univ.*); Bendell, Jessica (*Purdue Univ.*); Linnes, Jacqueline Callihan (*Purdue Univ.*)

17:15-19:00 FrPoS-04.6  
**Intuitive Visualization of Innervation Zones based on Surface-EMG Signals**  
 Kiese, Constanze\* (*Dr. von Hauner Children's Hospital, Dept. of Pediatric Surgery, Clinics of the University of Munich*); Landgraf, Hans-Peter (*AEGAEON Technologies GmbH*); Danzer, Anna-Lena (*Dept. of Neurology, University of Regensburg*); Schickling, Benedikt (*OTH Regensburg, Lab for Measurement and Control Technology, Faculty of Mechanical Engineering, Regensburg*); Nicolau Torra, Anna (*OTH Regensburg, Lab for Measurement and Control Technology, Faculty of Mechanical Engineering, Regensburg*); Reitmeier, Torsten (*OTH Regensburg, Lab for Measurement and Control Technology, Faculty of Mechanical Engineering, Regensburg*); Schulte-Mattler, Wilhelm (*Dept. of Neurology, University of Regensburg*); von Schweinitz, Dietrich (*Dr. von Hauner Children's Hospital, Dept. of Pediatric Surgery, Clinics of the University of Munich*); Ketterl, Hermann (*OTH Regensburg, Lab for Measurement and Control Technology, Faculty of Mechanical Engineering, Regensburg*)

FrPoS-05: 17:15-19:00 Exhibit Hall 2  
**Diagnostic Devices and Physiological Monitoring (IV) – Poster (Theme 9) (Poster Session)**

17:15-19:00 FrPoS-05.1  
**Design and Evaluation of a Portable Smart-Phone based Peripheral Neuropathy Test Platform**  
 Jacobs, Peter G. (*Oregon Health & Science University*); Hanaway, Peter (*All Systems Go*); Leitschuh, Joseph (*Oregon Health & Science University*); Condon, John (*Pro-tech*); Rajbharrysingh, Uma (*Johns Hopkins University*); Mosquera-Lopez, Clara\* (*Oregon Health & Science University*); Guidarelli, Carolyn (*Oregon Health & Science University*); Winters-Stone, Kerri (*Oregon Health & Science University*)

17:15-19:00 FrPoS-05.2  
**Low-Noise Transimpedance Amplifier Design using Chopper-Stabilized Technique for Nanopore Applications**  
 Park, Youkyeong (*Gachon University*); Yun, Jeong-dae (*Gachon University*); Kim, Jungsuk\* (*Gachon University*)

17:15-19:00 FrPoS-05.3  
**Point-of-Care Assessment of Folate Status using a Fluorescence Lateral Flow Assay**  
 Rey, Elizabeth\* (*Cornell University*); Finkelstein, Julia (*Cornell University*); Erickson, David (*Cornell University*)

17:15-19:00 FrPoS-05.4  
**Black-Box Model Identification of Physical Activity in Type-1 Diabetes Patients**  
 Faccioli, Simone (*University of Padua*); Ozaslan, Basak (*University of Virginia*); Garcia-Tirado, Jose (*University of Virginia, Center for Diabetes Technology*); Breton, Marc D. (*University of Virginia*); Del Favero, Simone\* (*University of Padova*)



17:15-19:00	FrPoS-05.5	<b>Development of a Human Infant Feeding Reinforcement System</b> Dharmavaram, Poornima ( <i>University at Buffalo, The State University of New York</i> ); Kong, Kai Ling ( <i>University at Buffalo, NY</i> ); Anzman-Frasca, Stephanie ( <i>University at Buffalo, The State University of New York</i> ); Epstein, Leonard ( <i>University at Buffalo, The State University of New York</i> ); Titus, Albert* ( <i>University at Buffalo, The State University of New York</i> )	17:15-19:00	FrPoS-06.8	<b>Design of a Low-Cost MRI Compatible Plantarflexion Force Measurement Device</b> Allexandre, Didier* ( <i>Kessler Foundation</i> ); Androwis, Ghaith ( <i>Kessler Foundation, and New Jersey Institute of Technology</i> ); Saleh, Soha ( <i>Kessler Foundation</i> ); Benony, Betty ( <i>Marquet Getinge Group</i> ); Yue, Guang ( <i>Kessler Foundation</i> )
17:15-19:00	FrPoS-05.6	<b>3-Stage Miller Cross-Coupled Load based Photodiode Readout for Glucose Monitoring</b> Vinchhi, Bakul* ( <i>EPFL Lausanne</i> ); Dehollain, Catherine ( <i>Ecole Polytechnique Federale de Lausanne</i> ); Berger, Daniel ( <i>EPFL</i> )	<div>FrPoS-07: 17:15-19:00</div> <div>Exhibit Hall 2</div> <div><b>General and Theoretical Informatics: Algorithms (II) – Poster (Theme 10)</b> (Poster Session)</div>		
FrPoS-06: 17:15-19:00	Exhibit Hall 2	<b>Rehabilitation Applications – Poster (Theme 7)</b> (Poster Session)	17:15-19:00	FrPoS-07.1	<b>Automatic Detection of Preferred Retinal Locus (PRL) for Low Vision Rehabilitation using Oculometrics Analysis</b> Yow, Ai Ping ( <i>Institute for Infocomm Research</i> ); Wong, Damon* ( <i>Institute for Infocomm Research</i> ); Lim, Tock Han ( <i>Tan Tock Seng Hospital</i> ); Laude, Augustinus ( <i>Tan Tock Seng Hospital</i> )
17:15-19:00	FrPoS-06.1	<b>Identification of the Relationships between Noncontact Capacitive Sensing Signals and Continuous Grasp Forces: Preliminary Study</b> Zheng, Enhao* ( <i>Institute of Automation, Chinese Academy of Sciences</i> ); Wang, Qining ( <i>Peking University</i> ); Qiao, Hong ( <i>Institute of Automation, Chinese Academy of Sciences</i> )	17:15-19:00	FrPoS-07.2	<b>A Novel Method to Determine Dynamic Temperature Trends Applied to In-Shoe Temperature Data during Walking</b> Cutajar, Lucianne ( <i>University of Malta</i> ); Falzon, Owen* ( <i>University of Malta</i> ); Mizzi, Anabelle ( <i>University of Malta</i> ); Swaine, Ian ( <i>University of Greenwich</i> ); Springett, Kate ( <i>Canterbury Christ Church University</i> ); Mizzi, Stephen ( <i>University of Malta</i> )
17:15-19:00	FrPoS-06.2	<b>A Novel Variable Stiffness Compliant Finger Exoskeleton for Rehabilitation based on Electromagnet Control</b> Liang, Renghao ( <i>Xi'an Jiao Tong University</i> ); Xu, Guanghua* ( <i>Xi'an Jiao Tong University</i> ); Li, Min ( <i>School of Mechanical Engineering, Xi'an Jiao Tong University</i> ); Zhang, Sicong ( <i>Xi'an Jiao Tong University</i> ); Luo, Ailing ( <i>Xi'an Jiao Tong University</i> ); Tao, Tangfei ( <i>Xi'an Jiao Tong University</i> )	17:15-19:00	FrPoS-07.3	<b>Deviations of Acoustic Low-Level Descriptors in Speech Features of a Set of Triplets, One with Autism</b> Yatawatte, Hasini* ( <i>University of Notre Dame</i> ); Poellabauer, Christian ( <i>University of Notre Dame</i> ); Schneider, Sandra ( <i>Saint Mary's College</i> ); Latham, Susan ( <i>Saint Mary's College</i> )
17:15-19:00	FrPoS-06.3	<b>Dynamically Mapping Socket Loading Conditions during Real Time Operation of an Upper Limb Prosthesis</b> Fu, Jonathan* ( <i>Johns Hopkins University</i> ); Nguyen, Harrison ( <i>Johns Hopkins University</i> ); Kim, Dong Woo ( <i>Johns Hopkins University</i> ); Shallal, Christopher ( <i>Johns Hopkins University</i> ); Cho, Sue Min ( <i>Johns Hopkins University</i> ); Osborn, Luke ( <i>Johns Hopkins University</i> ); Thakor, Nitish ( <i>Johns Hopkins University</i> )	17:15-19:00	FrPoS-07.4	<b>Interval Kernels for Combining Biometric Measurements from Multiple Prostate Samples Per Patient in Prognostic Models with Transductive Semi-Supervised Support Vector Regression</b> Khan, Faisal* ( <i>Rutgers, The State University of New Jersey</i> )
17:15-19:00	FrPoS-06.4	<b>Modeling of Hand and Forearm Link using Inertial Sensors</b> Kitano, Keisuke* ( <i>Doshisha University</i> ); Ito, Akihito ( <i>Doshisha University</i> ); Tsujiuchi, Nobutaka ( <i>Doshisha University</i> )	<div>FrPoS-08: 17:15-19:00</div> <div>Exhibit Hall 2</div> <div><b>General and Theoretical Informatics: Machine Learning (II) – Poster (Theme 10)</b> (Poster Session)</div>		
17:15-19:00	FrPoS-06.5	<b>A Practical Approach for Evaluation of Socket Pistoning for Lower Limb Amputees</b> Vempala, Vibhavari* ( <i>North Carolina State University</i> ); Liu, Ming ( <i>NC State University</i> ); Kamper, Derek ( <i>North Carolina State University</i> ); Huang, He ( <i>North Carolina State University and University of North Carolina at Chapel Hill</i> )	17:15-19:00	FrPoS-08.1	<b>Diagnosis of Prostate Cancer in a Chinese Population using Machine Learning Methods</b> Wang, Guanjin* ( <i>The Hong Kong Polytechnic University</i> ); Teoh, Jeremy Yuen-Chun ( <i>Chinese University of Hong Kong</i> ); Choi, Kup-Sze ( <i>Centre for Smart Health, School of Nursing, The Hong Kong Polytechnic University</i> )
17:15-19:00	FrPoS-06.6	<b>Development of Sensorised Resistance Band for Objective Exercise Measurement: Activities Classification Trial</b> Ma, Jianjia ( <i>Loughborough University</i> ); Hogervorst, Eef ( <i>Loughborough University</i> ); Magistro, Daniele ( <i>Loughborough University</i> ); Chouliaras, Vassilios ( <i>Loughborough University</i> ); Zecca, Massimiliano* ( <i>Loughborough University</i> )	17:15-19:00	FrPoS-08.2	<b>Automatic System for Obstructive Sleep Apnea Events Detection using Convolutional Neural Network</b> Cen, Ling ( <i>Nanyang Technological University</i> ); Yu, Zhuliang ( <i>South China University of Technology, Chinese</i> ); Kluge, Tilmann ( <i>Austrian Institute of Technology</i> ); Ser, Wee* ( <i>Nanyang Technological University</i> )
17:15-19:00	FrPoS-06.7	<b>Exploration of Metrics for Leg Length Discrepancy using a Wearable Gait Analysis System</b> Marquez, J. Sebastian* ( <i>Florida International University</i> ); Atri, Roozbeh ( <i>Florida International University</i> ); Siddiquee, Masudur R. ( <i>Florida International University</i> ); Leung, Connie ( <i>Florida International University</i> ); Bai, Ou ( <i>Florida International University</i> )	17:15-19:00	FrPoS-08.3	<b>A Fully Automated System for Sizing Nasal PAP Masks using Facial Photographs</b> Johnston, Benjamin* ( <i>University of Sydney</i> ); de Chazal, Philip ( <i>University of Sydney</i> )

17:15-19:00	FrPoS-08.4	<b>Rapid Anxiety and Depression Diagnosis in Young Children Enabled by Wearable Sensors and Machine Learning</b> McGinnis, Ryan S.* ( <i>University of Vermont</i> ); McGinnis, Ellen ( <i>University of Vermont</i> ); Hruschak, Jessica ( <i>University of Michigan</i> ); Lopez-Duran, Nestor ( <i>University of Michigan</i> ); Fitzgerald, Kate ( <i>University of Michigan</i> ); Rosenblum, Katherine L. ( <i>University of Michigan</i> ); Muzik, Maria ( <i>University of Michigan</i> )	17:15-19:00	FrPoS-09.2	<b>Eigen Posture based Fall Risk Assessment System using Kinect</b> Tripathy, Soumya Ranjan ( <i>TCS Research and Innovation, Tata Consultancy Services Ltd.</i> ); Chakravarty, Kingshuk* ( <i>Tata Consultancy Services Ltd.</i> ); Sinha, Aniruddha ( <i>Tata Consultancy Services Ltd.</i> )
17:15-19:00	FrPoS-08.5	<b>SCOSY: A Biomedical Collaboration Recommendation System</b> Guerra Marin, Jorge* ( <i>Children's Hospital of Philadelphia</i> ); Quan, Wei ( <i>Drexel University</i> ); Li, Kai ( <i>Drexel University</i> ); Ahumada, Luis ( <i>Johns Hopkins All Children's Hospital</i> ); Winston, Flaura ( <i>Children's Hospital of Philadelphia</i> ); Desai, Bimal ( <i>Children's Hospital of Philadelphia</i> )	17:15-19:00	FrPoS-09.3	<b>Evaluation for the Necessity of Medical Imaging Tests Prescription in Neurology</b> Manta, Ourania ( <i>NTUA</i> ); Toumpaniaris, Petros ( <i>National Technical University of Athens</i> ); Katrakazas, Panagiotis* ( <i>School of Electrical and Computer Engineering, National Technical University of Athens</i> ); Kouris, Ioannis ( <i>National Technical University of Athens</i> ); Lambrou, George I. ( <i>National and Kapodistrian University of Athens</i> ); Koutsouris, Dimitrios ( <i>BioMedical Engineering Lab, School of Electrical and Computer Engineering, National Technical University of Athens</i> ); Kepentzis, Stavros ( <i>National Technical University of Athens</i> ); Iliopoulou, Dimitra ( <i>National Technical University of Athens</i> )
17:15-19:00	FrPoS-08.6	<b>Identification of Optimum Panel of Blood-Based Biomarkers for Alzheimer's Disease Diagnosis using Machine Learning</b> Eke, Chima Stanley* ( <i>School of Computing, Electronics, and Mathematics, University of Plymouth</i> ); Jammeh, Emmanuel ( <i>Plymouth University, School of Computing and Mathematics</i> ); Li, Xinzhong ( <i>Medical Statistics/Bioinformatics, Plymouth University</i> ); Carroll, Camille ( <i>Peninsula Schools of Medicine and Dentistry, Plymouth University</i> ); Pearson, Stephen ( <i>Re:Cognition Health, UK</i> ); Ifeachor, Emmanuel ( <i>University of Plymouth</i> )	17:15-19:00	FrPoS-09.4	<b>CHANGE: Cardiac Health Analysis using Graph Eigenvalues</b> Dutta Choudhury, Anirban* ( <i>Tata Consultancy Services Ltd.</i> ); Chowdhury, Ananda ( <i>Jadavpur University</i> )
17:15-19:00	FrPoS-08.7	<b>Prediction of One-Year Transplant-Free Survival after Norwood Procedure based on the Pre-Operative Data</b> Ahumada, Luis ( <i>Johns Hopkins All Children's Hospital</i> ); Peck, Jacquelin ( <i>Johns Hopkins All Children's Hospital</i> ); Guerra Marin, Jorge ( <i>Children's Hospital of Philadelphia</i> ); Do, Nhue ( <i>Johns Hopkins All Children's Hospital</i> ); Gupta, Monisha ( <i>Johns Hopkins All Children's Hospital</i> ); Ghazarian, Sharon ( <i>Johns Hopkins All Children's Hospital</i> ); Rehman, Mohamed ( <i>The Children's Hospital of Philadelphia</i> ); Jacobs, Jeffrey P. ( <i>Johns Hopkins All Children's Hospital</i> ); Jalali, Ali* ( <i>Villanova University</i> )	17:15-19:00	FrPoS-09.5	<b>Risk Prediction of Heart Failure Decompensation Events in Multiparametric Feature Spaces</b> Nunes, Diogo ( <i>Univ. of Coimbra</i> ); Leal, Adriana ( <i>Univ. of Coimbra</i> ); Rocha, Teresa ( <i>Inst Superior de Eng de Coimbra</i> ); Traver, Vicente ( <i>ITACA - Universitat Politècnica de València</i> ); Teixeira, César ( <i>Univ. of Coimbra</i> ); Paredes, Simao* ( <i>Instituto Politécnico de Coimbra</i> ); de Carvalho, Paulo ( <i>Univ. of Coimbra</i> ); Henriques, Jorge ( <i>Univ. of Coimbra</i> ); Ruano, M. Graça ( <i>FCT, Univ. of Algarve &amp; CISUC-Univ. of Coimbra</i> )
17:15-19:00	FrPoS-08.8	<b>3D Shape-Based Body Composition Prediction Model using Machine Learning</b> Lu, Yao* ( <i>George Washington University</i> ); McQuade, Scott ( <i>George Washington University</i> ); Hahn, James ( <i>George Washington University</i> )	17:15-19:00	FrPoS-09.6	<b>Atrial Fibrillation Prediction using Recordings from Portable Devices</b> Li, Zhi* ( <i>Univ. of Michigan</i> ); Derksen, Harm ( <i>Univ. of Michigan, Ann Arbor</i> ); Gryak, Jonathan ( <i>Univ. of Michigan</i> ); Ghanbari, Hamid ( <i>Univ. of Michigan</i> ); Gunaratne, Pujitha ( <i>Toyota Motor North America</i> ); Najarian, Kayvan ( <i>Univ. of Michigan - Ann Arbor</i> )
17:15-19:00	FrPoS-08.9	<b>A Spark-Based Analytic Pipeline for Seizure Detection in EEG Big Data Streams</b> Eslampanah Sendi, Mohammad Sadegh ( <i>Georgia Institute of Technology</i> ); Heydarzadeh, Mehrdad ( <i>University of Texas at Dallas</i> ); Mahmoudi, Babak* ( <i>Emory University</i> )	17:15-19:00	FrPoS-09.7	<b>Early Prediction of Sepsis in EMR Records using Traditional ML Techniques and Deep Learning LSTM Networks</b> Mohammed, Saqib, Mohammed Saqib ( <i>MIBLAB</i> ); Sha, Ying* ( <i>Georgia Institute of Technology</i> ); Wang, May D. ( <i>Georgia Tech and Emory University</i> )
17:15-19:00	FrPoS-08.10	<b>Personalized Gaussian Processes for Forecasting of Alzheimer's Disease Assessment Scale-Cognition Sub-Scale (ADAS-Cog13)</b> Utsumi, Yuria* ( <i>MIT</i> ); Rudovic, Ognjen ( <i>Massachusetts Institute of Technology</i> ); Peterson, Kelly ( <i>Massachusetts Institute of Technology</i> ); Guerrero, Ricardo ( <i>Imperial College London</i> ); Picard, Rosalind ( <i>Massachusetts Institute of Technology</i> )	17:15-19:00	FrPoS-09.8	<b>Interpretable Machine Learning Techniques for Causal Inference using Balancing Scores as Meta-Features</b> Nohara, Yasunobu* ( <i>Kyushu Univ. Hospital</i> ); Iihara, Koji ( <i>Kyushu Univ.</i> ); Nakashima, Naoki ( <i>Kyushu Univ. Hospital</i> )
FrPoS-09: 17:15-19:00	Exhibit Hall 2	<b>Health Informatics: Decision Support Methods and Systems (II) – Poster (Theme 10)</b> (Poster Session)	FrPoS-10: 17:15-19:00	Exhibit Hall 2	<b>Health Informatics: Evaluation of Health Information Systems – Poster (Theme 10)</b> (Poster Session)
17:15-19:00	FrPoS-09.1	<b>Eye Movements – An Early Marker of Cognitive Dysfunctions</b> Chatterjee, Debatri ( <i>TCS Innovation Lab</i> ); Gavas, Rahul* ( <i>TCS Research and Innovation, Tata Consultancy Services Ltd.</i> ); Chakravarty, Kingshuk ( <i>Tata Consultancy Services Ltd.</i> ); Sinha, Aniruddha ( <i>Tata Consultancy Services Ltd.</i> ); Lahiri, Uttama ( <i>Indian Institute of Technology, Gandhinagar</i> )	17:15-19:00	FrPoS-10.1	<b>Validation of Improvements of Robotic Devices for Nursing Care using a Sensing Dummy Simulating Human Body</b> Ogata, Kunihiro* ( <i>National Institute of Advanced Industrial Science and Technology (AIST)</i> ); Tanaka, Hideyuki ( <i>National Institute of Advanced Industrial Science and Technology</i> ); Matsumoto, Yoshio ( <i>Advanced Industrial Science and Technology</i> )

17:15-19:00	FrPoS-10.2	17:15-19:00	FrPoS-11.2
<b>Methodologies for Workforce Optimization in Hospital's Emergency Dept.</b> Paul, Soubhik ( <i>Philips India Ltd.</i> ); Palanisamy, Krishnamoorthy ( <i>Philips India Ltd.</i> ); M.S. Dinesh* ( <i>Philips Research India</i> ); Swaminathan, Kailash ( <i>Philips Research India</i> ); Bussa, Nagaraju ( <i>Philips Research Asia - Bangalore</i> ); Mariyanna, Shiva ( <i>Philips India Ltd.</i> )		<b>Robust Ensemble Learning to Identify Rare Disease Patients from Electronic Health Records</b> Colbaugh, Richard ( <i>Volvo Global</i> ); Glass, Kristin* ( <i>Volvo Global</i> ); Rudolf, Christopher ( <i>Volvo Global</i> ); Tremblay, Mike ( <i>Volvo Global</i> )	
17:15-19:00	FrPoS-10.3	17:15-19:00	FrPoS-11.3
<b>A Different Approach for Digital Pathology: Lexicon-Semantic Analysis of Histopathological Reports for the Assessment of Their Quality</b> Vega-Barbas, Mario* ( <i>Karolinska Institutet</i> ); Seoane, Fernando ( <i>Karolinska Institutet</i> )		<b>Towards the Establishment of a Biomedical Ontology for the Primary Sjögren's Syndrome</b> Pezoulas, Vasileios C. ( <i>Univ. of Ioannina</i> ); Exarchos, Themis P. ( <i>Unit of Medical Tech &amp; Intelligent Info</i> ); Andronikou, Vassiliki ( <i>National Technical Univ. of Athens</i> ); Varvarigou, Theodora ( <i>National Technical Univ. of Athens</i> ); Tzioufas, Athanasios ( <i>National and Kapodistrian Univ. of Athens</i> ); De Vita, Salvatore ( <i>Udine Univ.</i> ); Fotiadis, Dimitrios I.* ( <i>Univ. of Ioannina</i> )	
17:15-19:00	FrPoS-10.4	17:15-19:00	FrPoS-11.4
<b>How Is the Doctor Feeling? ICU Provider Sentiment Is Associated with Diagnostic Imaging Utilization</b> Ghassemi, Mohammad ( <i>Massachusetts Institute of Tech.</i> ); Al-Hanai, Tuka* ( <i>Massachusetts Institute of Tech.</i> ); Raffa, Jesse ( <i>Massachusetts Institute of Tech.</i> ); Mark, Roger ( <i>Massachusetts Institute of Tech.</i> ); Nemati, Shamim ( <i>Emory Univ. School of Medicine</i> ); Chokshi, Falgun ( <i>Emory Univ. School of Medicine</i> )		<b>A FHIR-Enabled Streaming Sepsis Prediction System for ICUs</b> Henry, Joel ( <i>Georgia Institute of Technology</i> ); Lynch, Dennis ( <i>Georgia Institute of Technology</i> ); Mals, Jeff ( <i>Georgia Institute of Technology</i> ); Shashikumar, Supreeth Prajwal ( <i>Georgia Institute of Technology</i> ); Holder, Andre ( <i>Emory University School of Medicine</i> ); Sharma, Ashish ( <i>Emory University</i> ); Nemati, Shamim* ( <i>Emory University School of Medicine</i> )	
17:15-19:00	FrPoS-10.5	17:15-19:00	FrPoS-11.5
<b>Can Mixed-Reality Improve the Training of Medical Procedures?</b> Azimi, Ehsan* ( <i>Johns Hopkins University</i> ); Winkler, Alexander ( <i>Johns Hopkins University</i> ); Tucker, Emerson ( <i>Johns Hopkins University</i> ); Qian, Long ( <i>Johns Hopkins University</i> ); Doswell, Jayfus ( <i>Juxtopia LLC</i> ); Navab, Nassir ( <i>Technische Universität München</i> ); Kazanzides, Peter ( <i>Johns Hopkins University</i> )		<b>An Empirical Study of Questionnaires for the Diagnosis of Pediatric Obstructive Sleep Apnea</b> Ahmed, Sadia* ( <i>Univ. of Texas at Arlington</i> ); Hasani, Sona ( <i>Univ. of Texas at Arlington</i> ); Koone, Mary ( <i>Univ. of Texas at Arlington</i> ); Thirumuruganathan, Saravanan ( <i>Qatar Computing Research Institute</i> ); Diaz-Abad, Montserrat ( <i>Univ. of Maryland School of Medicine</i> ); Mitchell, Ron ( <i>Univ. of Texas Southwestern Medical Center</i> ); Isaiah, Amal ( <i>Univ. of Maryland School of Medicine</i> ); Das, Gautam ( <i>Univ. of Texas at Arlington</i> )	
17:15-19:00	FrPoS-10.6	17:15-19:00	FrPoS-11.6
<b>Definition and Representation of a Process to Engineer a Multi-User Information Management Application for Continuity of Care</b> Hernandez, Liss ( <i>Universidad Politécnica de Madrid</i> ); Merino, Beatriz ( <i>Universidad Politécnica de Madrid</i> ); Fico, Giuseppe* ( <i>Universidad Politécnica de Madrid</i> ); Casasus, Maria Alonso ( <i>Hospital Clínico San Carlos</i> ); Rodríguez Machuca, M <sup>a</sup> José ( <i>Hospital Clínico San Carlos</i> ); Ortuño-Soriano, Ismael ( <i>Hospital Clínico San Carlos</i> ); Fernandez-del-Palacio, Encarnación ( <i>Hospital Clínico San Carlos</i> ); Cabrera-Umpierrez, Maria Fernanda ( <i>Universidad Politécnica de Madrid</i> ); Seara-Aguilar, Germán ( <i>Hospital Clínico San Carlos</i> ); Arredondo, María Teresa ( <i>Universidad Politécnica de Madrid</i> )		<b>A Distributed Storage Model for Healthcare Big Data Designed on HBase</b> Zhang, Lu ( <i>Research Center for BioMedical Information Technology, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences</i> ); Li, Qi ( <i>Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences</i> ); Li, Ye ( <i>Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences</i> ); Cai, Yun-Peng* ( <i>SIAT</i> )	
17:15-19:00	FrPoS-10.7	17:15-19:00	FrPoS-11.7
<b>Evaluating ICU Clinical Severity Scoring Systems and Machine Learning Applications: APACHE IV/IVA Case Study</b> Balkan, Baran ( <i>University of Arizona</i> ); Essay, Patrick ( <i>University of Arizona</i> ); Subbian, Vignesh* ( <i>University of Arizona</i> )		<b>Comparison of Gaussian Processes Methods to Linear Methods for Imputation of Sparse Physiological Time Series</b> Nickerson, Paul ( <i>Univ. of Florida</i> ); Baharloo, Raheleh ( <i>Univ. of Florida</i> ); Davoudi, Anis* ( <i>Univ. of Florida</i> ); Bihorac, Azra ( <i>Univ. of Florida</i> ); Rashidi, Parisa ( <i>Univ. of Florida</i> )	
17:15-19:00	FrPoS-10.8	17:15-19:00	FrPoS-11.8
<b>A Standing Function Evaluation System based on Virtual Light Touch Contact and Factor Analysis</b> Sakata, Mami* ( <i>Yokohama National University</i> ); Kawahara, Dai ( <i>Yokohama National University</i> ); Shima, Keisuke ( <i>Yokohama National University</i> ); Izumi, Hiroyuki ( <i>University of Occupational and Environmental Health, Japan</i> ); Nagara, Tomoyuki ( <i>JFE Steel Corp.</i> ); Shimatani, Koji ( <i>Prefectural University of Hiroshima</i> )		<b>Effects of Consecutive Moderately Cold Days on Cardiovascular Disease Mortality in Shenzhen, China: A Preliminary Study</b> Chen, Runge ( <i>Shenzhen Institutes of Advanced Tech., Chinese Academy of Sciences</i> ); Miao, Fen ( <i>Shenzhen Institutes of Advanced Tech., Chinese Academy of Sciences</i> ); Zheng, Jing ( <i>Shenzhen Medical Information Center</i> ); Wu, Yongsheng ( <i>Shenzhen Center for Disease Control and Prevention</i> ); Li, Ye* ( <i>Shenzhen Institutes of Advanced Tech., Chinese Academy of Sciences</i> )	
FrPoS-11: 17:15-19:00 <b>Health Informatics: Health Data – Poster (Theme 10)</b> (Poster Session)		17:15-19:00	FrPoS-11.9
17:15-19:00	FrPoS-11.1	<b>SMCT – An Innovative Tool for Mental Health Analysis of Twitter Data</b> Watkins, Nathan G. ( <i>University of New South Wales</i> ); Lovell, Nigel H. ( <i>University of New South Wales</i> ); Larsen, Mark Erik* ( <i>University of New South Wales</i> )	

FrPoS-12: 17:15-19:00 Exhibit Hall 2  
**Imaging Informatics: Medical Image Processing and Visualization – Poster (Theme 10)** (Poster Session)

17:15-19:00 FrPoS-12.1  
**Automatic Extraction of the 3D Symmetry Line of Back Surface: Application on Scoliotic Adolescents**  
 Morand, Marion\* (*LIRMM, Montpellier University*); Comas, Olivier (*DMS Imaging*); Fiorio, Christophe (*LIRMM, Montpellier University*); Subsol, Gérard (*LIRMM, Montpellier University*)

17:15-19:00 FrPoS-12.2  
**Automatic Tooth Segmentation of Dental Mesh using a Transverse Plane**  
 Kim, Suzi\* (*Korea Advanced Institute of Science and Technology*); Choi, Sunghye (*Korea Advanced Institute of Science and Technology*)

17:15-19:00 FrPoS-12.3  
**Exploring Different Impaired Speed of Genetic-Related Brain Function and Structures in Schizophrenic Progress using Multimodal Analysis**  
 Luo, Na (*University of Chinese Academy of Sciences*); Tian, Lin (*Wuxi Mental Health Center*); Calhoun, Vince (*The Mind Research Network/University of New Mexico*); Chen, Jiayu (*The Mind Research Network*); Lin, Dongdong (*The Mind Research Network*); Vergara, Victor Manuel (*The Mind Research Network*); Rao, Shuquan (*School of Life Science and Engineering, Southwest Jiao Tong University*); Zhang, Fuquan (*Wuxi Mental Health Center*); Sui, Jing\* (*Institute of Automation, Chinese Academy of Sciences*)

17:15-19:00 FrPoS-12.4  
**Radiomics: A Novel CT-Based Method of Predicting Postoperative Recurrence in Ovarian Cancer**  
 Wei, Wei (*Xi'an Polytechnic University*); Rong, Yu (*West China Second University Hospital of Sichuan University*); Liu, Zhenyu (*Institute of Automation, Chinese Academy of Sciences*); Zhou, Bin (*West China Second University Hospital of Sichuan University*); Tang, Zhenchao (*Shandong University, Weihai*); Wang, Shuo (*Chinese Academy of Sciences*); Dong, Di (*Chinese Academy of Sciences*); Zang, Yali (*Institute of Automation, Chinese Academy of Sciences*); Guo, Yingkun (*West China Second University Hospital of Sichuan University*); Tian, Jie\* (*Chinese Academy of Sciences*)

17:15-19:00 FrPoS-12.5  
**Adapted K-Core Decomposition and Visualization for Functional Magnetic Resonance Imaging Connectivity Networks**  
 de Ridder, Michael\* (*University of Sydney*); Klein, Karsten (*Universität Konstanz*); Kim, Jinman (*University of Sydney*)

17:15-19:00 FrPoS-12.6  
**Automatic Detection of Early Gastric Cancer in Endoscopic Images using a Transferring Convolutional Neural Network**  
 Sakai, Yoshimasa (*The University of Electro-Communications*); Takemoto, Satoko (*RIKEN*); Hori, Keisuke (*National Cancer Center Hospital East*); Nishimura, Masaomi (*RIKEN*); Ikematsu, Hiroaki (*National Cancer Center Hospital East*); Yano, Tomonori (*National Cancer Center Hospital East*); Yokota, Hideo\* (*RIKEN Center for Advanced Photonics*)

17:15-19:00 FrPoS-12.7  
**Localisation of Colorectal Polyps by Convolutional Neural Network Features Learnt from White Light and Narrow Band Endoscopic Images of Multiple Databases**  
 Zheng, Yali (*Chinese University of Hong Kong*); Zhang, Ruikai (*Chinese University of Hong Kong*); Yu, Ruoxi (*Chinese University of Hong Kong*); Jiang, Yuqi (*Chinese University of Hong Kong*); Mak, Wing Chung Tony (*Chinese University of Hong Kong*); Wong, Hei Sunny (*Chinese University of Hong Kong*); Lau, James Y. W. (*Chinese University of Hong Kong*); Poon, Carmen C. Y.\* (*Chinese University of Hong Kong*)

17:15-19:00 FrPoS-12.8  
**Surgical Suturing with Depth Constraints: Image-Based Metrics to Assess Skill**  
 Kil, Irfan\* (*Clemson University*); Groff, Richard E (*Clemson University*); Singapogu, Ravikiran (*Clemson University*)

FrPoS-13: 17:15-19:00 Exhibit Hall 2  
**Image-Guided Therapies and Therapeutic Devices – Poster (Theme 9)** (Poster Session)

17:15-19:00 FrPoS-13.1  
**Study of the Photoneutron Generation Caused by a LinAc Beryllium Window with a 6 MeV Treatment Beam**  
 Juste, Belen\* (*Polytechnic Univ. of Valencia*); Morató, Sergio (*Institute for Industrial, Radiophysical and Environmental Safety (ISIRYM)*); Salvat, Alejandra (*The Institute for Industrial, Radiophysical and Environmental Safety (ISIRYM) at the Universitat Politècnica de València*); Miró, Rafael (*Polytechnic Univ. of Valencia*); Verdú, Gumersindo (*Polytechnic Univ. of Valencia*)

17:15-19:00 FrPoS-13.2  
**A Reference-Less Time-Division-Duplex Transceiver IC for a 5-Fr 6-Electrode Renal Denervation Catheter in 0.18-µm 70-V BCD MOS**  
 Yang, Jaehyeok\* (*KAIST*); Kim, Seohyeon (*KAIST*); Hwang, Gunpil (*KAIST*); Kwon, Kyeongha (*KAIST*); Jeon, Sejun (*KAIST*); Bae, Hyeon-Min (*KAIST*)

17:15-19:00 FrPoS-13.3  
**A Steerable Endoscope for Transnasal Skull Base Surgery**  
 Kwon, Seong-il (*Univ. of Science & Technology, Korea Institute of Science & Technology*); Ryu, Geunwoong (*Korea Institute of Science and Technology, Korea Univ. of Science and Technology*); Kang, Sungchul (*Korea Institute of Science and Technology*); Kim, Keri\* (*Korea Institute of Science and Technology*)

17:15-19:00 FrPoS-13.4  
**A Phantom Study to Create Synthetic CT from Orthogonal Two-Dimensional Cine MRI and Evaluate the Effect of Irregular Breathing**  
 Müller, Marco\* (*University of Sydney*); Paganelli, Chiara (*Politecnico di Milano*); Keall, Paul John (*University of Sydney*)

17:15-19:00 FrPoS-13.5  
**Design, Fabrication and Validation of a Precursor Pulsed Electromagnetic Field Device for Bone Fracture Repair**  
 Daish, Christian\* (*RMIT Univ.*); Blanchard, Romane (*Univ. of Melbourne*); Duchi, Serena (*St Vincent's Dept. of Surgery, Univ. of Melbourne*); Onofrillo, Carmine (*St Vincent's Dept. of Surgery, Univ. of Melbourne*); Augustine, Cheryl (*St Vincent's Dept. of Surgery, Univ. of Melbourne*); Fox, Kate (*RMIT Univ.*); Pivonka, Peter (*St Vincent's Dept. of Surgery, Univ. of Melbourne*); Pirogova, Elena (*RMIT Univ.*)

17:15-19:00 FrPoS-13.6  
**Electrical Characterization of Human Biological Tissue for Irreversible Electroporation Treatments**  
 Beitel-White, Natalie\* (*Virginia Polytechnic Institute and State University*); Bhonsle, Suyashree (*Virginia Tech*); Martin, Robert C. G. (*University of Louisville*); Davalos, Rafael (*Virginia Tech*)

FrPoS-14: 17:15-19:00 Exhibit Hall 2  
**Stimulation and Neuromodulation (II) – Poster (Theme 9)** (Poster Session)

17:15-19:00 FrPoS-14.1  
**An Energy Efficient Programmable Neuro-Mimicking Stimulator IC for Implantable Electroceutical Systems**  
 Lee, Hyungwoo\* (*Samsung Advanced Institute of Technology*); Kim, Sang Joon (*Samsung Electronics*)

- 17:15-19:00 FrPoS-14.2  
**A 32-Channel Wireless Configurable System for Electrical Stimulation of the Stomach**  
 AbuKhalaf, Zaid (*New York Institute of Technology*); Javan Khoshkholgh, Amir (*New York Institute of Technology*); Alrofati, Wahib (*New York Institute of Technology*); Farajidavar, Aydin\* (*New York Institute of Technology*)
- 17:15-19:00 FrPoS-14.3  
**Impact of Electrode Number on the Performance of High-Definition Transcranial Direct Current Stimulation (HD-tDCS)**  
 Wang, Yushan\* (*Univ. of California Los Angeles*); Zhou, Hanyue (*Univ. of California Los Angeles*); Li, Ying (*Univ. of California Los Angeles*); Liu, Wentai (*Univ. of California Los Angeles*)
- 17:15-19:00 FrPoS-14.4  
**Uterosacral Nerve Stimulation via Cuff Electrode: A Preliminary Animal Study for Potential Application to Treatment of Preterm Labor**  
 Lee, Yi Jae (*Korea Institute of Science and Technology*); Eom, Kyu shik (*Korea Institute of Science and Technology*); Kim, Hee Youn (*Dept. of Obstetrics and Gynecology, Korea University Medical Center*); Ahn, Ki Hoon (*Dept. of Obstetrics and Gynecology, Korea University Medical Center*); Lee, Soo Hyun\* (*Korea Institute of Science and Technology*)
- FrPoS-15: 17:15-19:00 Exhibit Hall 2  
**Biomaterials and Cellular Interactions – Poster (Theme 3) (Poster Session)**
- 17:15-19:00 FrPoS-15.1  
**Ionic Conduction in Biological Nanopores Created by Ultrashort, High-Intensity Pulses**  
 Qiu, Hao (*Fort Valley state University*); Wang, Xianping\* (*Southeast Missouri State University*); Choi, Anthony (*Mercer University*); Xie, Fei (*Mount Vernon Nazarene University*); Zhao, Wenbing (*Cleveland State University*)
- 17:15-19:00 FrPoS-15.2  
**Simulation of pH-Regulated Electrokinetic Ion Transport in Nanopores with Polyelectrolyte Brushes**  
 Qiu, Hao (*Fort Valley state University*); Wang, Xianping\* (*Southeast Missouri State University*); Choi, Anthony (*Mercer University*); Zhao, Wenbing (*Cleveland State University*)
- 17:15-19:00 FrPoS-15.3  
**Cell Attachment on Inside-Outside Surface and Cell Encapsulation in Wall of Microscopic Tubular Scaffolds for Vascular Tissue-Like Formation**  
 Duong Van, Thuy (*University of Ulsan*); Lee, Yeasol (*University of Ulsan*); Dang, Thi Thao (*University of Ulsan*); Nguyen, Trung (*University of Ulsan*); Phan, Huu Lam (*Ulsan University*); Shin, Daehyeon (*University of Ulsan*); Lee, YongKwan (*University of Ulsan*); Park, Hodong (*Ulsan University*); Koo, Kyoin\* (*University of Ulsan*); Hwang, Changho (*Ulsan University Hospital*); Lee, HyoSeok (*University of Ulsan*); Son, Hyewon (*Dept. of BioMedical Engineering, University of Ulsan*); Jang, Hojeong (*Dept. of BioMedical Engineering, University of Ulsan*); Back, Sung Hoon (*University of Ulsan*); Oh, Seok (*University of Ulsan*)
- 17:15-19:00 FrPoS-15.4  
**Application of Electrically Charged Carbon Nanodots@glass in DNA and Cell Engineering**  
 Xie, Yingqiu\* (*Nazarbayev University*); Nurkesh, Ayan A. (*Nazarbayev University*); Keneskanova, Zhibek (*Nazarbayev University*); Altaikyzy, Akerke (*Nazarbayev University*); Fan, Haiyan (*Nazarbayev University*)
- 17:15-19:00 FrPoS-15.5  
**Exploring New Treatment for Spinalized Rats by Synergising Robotic Rehabilitation System and Regenerative Medicine**  
 Anopas, Dollaporn\* (*Nanyang Technological University*); Lin, Junquan (*Nanyang Technological University*); Milbreta, Ulla (*Nanyang Technological University*); Lin, Vincent Po Hen (*Nanyang Technological University*); Chin, Jiah Shin (*Nanyang Technological University*); Wee, Seng Kwee (*Tan Tock Seng Hospital*); Er, Tow Peh (*Tan Tock Seng Hospital*); Chew, Sing Yian (*Nanyang Technological University*); Ang, Wei Tech (*Nanyang Technological University*)
- 17:15-19:00 FrPoS-15.6  
**The Role of Temperature, Ammonia and Nitrite to Bioluminescence of *Aliivibrio Fischeri*: Towards a New Sensor for Aquaculture**  
 Silva, Luis Filipe Branco Alves da (*ChongQing Technology & Business Univ., Univ. College of Southeast Norway, Norwegian Univ. of Life Sciences*); Pires, Nuno M. M. (*Univ. College of Southeast Norway and Institute of Applied Micro-Nano Science and Technology*); Dong, Tao\* (*Univ. College of Southeast Norway - HSN, TekMar*); Teien, Hans-Christian (*Norwegian Univ. of Life Sciences*); Yang, Yili (*Nanyang City Center Hospital*); Storebakke, Trond (*Norwegian Univ. of Life Sciences*); Salbu, Brit (*Centre for Environmental Radioactivity (CERAD CoE), Norwegian Univ. of Life Sciences*)
- 17:15-19:00 FrPoS-15.7  
**Calcium Mineralization and Osteopontin Expression by Osteoblasts Onto Graphene Oxide Coating on Anodized Titanium**  
 Techaniyom, Pichayada (*King Mongkut's University of Technology Thonburi*); Sirivisoot, Sirinrath\* (*King Mongkut's University of Technology Thonburi*)
- 17:15-19:00 FrPoS-15.8  
**3D Nano-Crystal Platinum for High-Performance Neural Electrode**  
 Zeng, Qi (*Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences*); Zhang, Yi (*Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences*); Wu, Tianzhun\* (*Shenzhen Institutes of Advanced Technology (SIAT), Chinese Academy of Sciences (CAS)*); Sun, Bin (*Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen, China*); Xia, Kai (*Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences*); Humayun, Mark (*University of Southern California*)
- 17:15-19:00 FrPoS-15.9  
**Reduction the Initial-Burst Release of Doxorubicin from Polymeric Depot as a Local Drug Delivery System for Cancer Treatment**  
 Thedrattanawong, Chitinar (*Mahidol University*); Thanapongpibul, Chalaisorn (*Mahidol University*); Nittayacharn, Pinunta (*Mahidol University*); Nasongkla, Norased\* (*Faculty of Engineering, Mahidol University*)
- 17:15-19:00 FrPoS-15.10  
**Control of Hydroxyapatite Film Orientation by RF Magnetron Sputtering**  
 Kubota, Takafumi\* (*Doshisha University*); Hirata, Keishiro (*Doshisha University*); Takayanagi, Shinji (*Doshisha University*); Matsukawa, Mami (*Doshisha University*)
- FrPoS-16: 17:15-19:00 Exhibit Hall 2  
**Sensor Informatics: Intelligent Medical Devices and Sensors – Poster (Theme 10) (Poster Session)**
- 17:15-19:00 FrPoS-16.1  
**Stroke Volume, Ejection Fraction and Cardiac Health Monitoring using Impedance Cardiography**  
 Ghosh, Sudipta (*Indian Institute of Technology, Kharagpur*); Chattopadhyay, Bhabani Prasad (*Medical College And Hospital, Kolkata*); Roy, Ram Mohan (*Medical College And Hospital, Kolkata*); Mukhopadhyay, Jayanta (*Dept. of Computer Science & Engineering, IIT Kharagpur*); Mahadevappa, Manjunatha\* (*Indian Institute of Technology Kharagpur*)

17:15-19:00	FrPoS-16.2	<b>HOLOBALANCE: An Augmented Reality Virtual Trainer Solution for Balance Training and Fall Prevention</b> Kouris, Ioannis* ( <i>National Technical Univ. of Athens</i> ); Sarafidis, Michail ( <i>National Technical Univ. of Athens</i> ); Androutsou, Thelma ( <i>National Technical Univ. of Athens</i> ); Koutsouris, Dimitrios ( <i>BioMedical Engineering Lab, School of Electrical and Computer Engineering, National Technical Univ. of Athens</i> )	17:15-19:00	FrPoS-17.4	<b>Geometry-Based Model for U-Shaped Strain Gauges on Medical Needles</b> Schaefer, Pierre-Loup* ( <i>Laboratoire TIMC-IMAG</i> ); Chagnon, Grégory ( <i>Université de Grenoble</i> ); Moreau-Gaudry, Alexandre ( <i>Université Joseph Fourier - Grenoble University Hospital</i> )
17:15-19:00	FrPoS-16.3	<b>An Automatic Cycling Performance Classifier System based on the Crank Arm Force Measurement Data</b> Vieira Pigatto, Andre ( <i>Federal University of Rio Grande do Sul (UFRGS)</i> ); Ruschel dos Santos, Raphael* ( <i>Universidade Federal do Rio Grande do Sul</i> ); Balbinot, Alexandre ( <i>Federal University of Rio Grande do Sul (UFRGS)</i> )	17:15-19:00	FrPoS-17.5	<b>Harmonic Error Cancellation for Accurate Square-Wave-Based Bio-Impedance Measurements</b> Subhan, Saqib* ( <i>New York University Abu Dhabi</i> ); Ha, Sohmyung ( <i>New York University Abu Dhabi</i> )
17:15-19:00	FrPoS-16.4	<b>Comparing Manual and Machine Annotations of Emotions in Non-Acted Speech</b> Deshpande, Gauri ( <i>Tata Research Development and Design Center, Tata Consultancy Services</i> ); Viraraghavan, Venkata Subramanian* ( <i>Tata Consultancy Services Ltd.</i> ); Duggirala, Mayuri ( <i>Tata Research Development and Design Center, Tata Consultancy Services</i> ); Vempada, Ramu Reddy ( <i>TCS Research &amp; Innovation Lab</i> ); Patel, Sachin ( <i>Tata Research Development and Design Center, Tata Consultancy Services</i> )	17:15-19:00	FrPoS-17.6	<b>Inkjet Printed Parallel Plate Capacitors using PVP Polymer Dielectric Ink on Flexible Polyimide Substrates</b> Mohapatra, Ankita ( <i>University of Memphis</i> ); Tuli, Sayema ( <i>University of Memphis</i> ); Liu, Kwei ( <i>University of Memphis</i> ); Fujiwara, Tomoko ( <i>University of Memphis</i> ); Hewitt, Robert ( <i>University of Memphis</i> ); Andrasik, Frank ( <i>University of Memphis</i> ); Morshed, Bashir* ( <i>University of Memphis</i> )
17:15-19:00	FrPoS-16.5	<b>The Analytical Study in the Assessment of Body Segment Composition using Electrical Impedance in Patients with Schizophrenia</b> Huang, Ji-Jer* ( <i>Southern Taiwan Univ. of Science and Technology</i> ); Huang, Min-Wei ( <i>National Cheng Kung Univ.</i> ); Yang, Chiu-Yueh ( <i>Dept. of Nursing, National Yang-Ming Univ.</i> )	17:15-19:00	FrPoS-17.7	<b>Carbon Nanospikes on Silicon Wafer for Amperometric Biosensing Applications</b> Shanta, Aysa Siddique ( <i>Univ. of Tennessee</i> ); Shamsir, Samira* ( <i>Univ. of Tennessee Knoxville</i> ); Song, Yang ( <i>Oak Ridge National Lab</i> ); Hensley, Dale ( <i>Oak Ridge National Lab</i> ); Rondinone, Adam ( <i>Oak Ridge National Lab</i> ); Islam, Syed Kamrul ( <i>Univ. of Tennessee</i> ); McFarlane, Nicole ( <i>Univ. of Tennessee</i> )
FrPoS-18: 17:15-19:00 Exhibit Hall 2 <b>Novel Physiological Monitoring Methods – Poster (Theme 7)</b> (Poster Session)					
17:15-19:00	FrPoS-16.6	<b>Walk Identification using a Smart Carpet and Mel-Frequency Cepstral Coefficient (MFCC) Features</b> Muheidat, Fadi* ( <i>University of the Pacific</i> ); Tyrer, Harry ( <i>University of Missouri - Columbia</i> ); Popescu, Mihail ( <i>University of Missouri</i> )	17:15-19:00	FrPoS-18.1	<b>Study of Clinical Sample Detection for LH with Lateral Flow Immunochromatographic Strip using Support Vector Regression</b> Liu, Juntao ( <i>Institute of Electronics, Chinese Academy of Sciences</i> ); Wang, Yang ( <i>State Key Lab of Transducer Technology, Institute of Electronics, Chinese Academy of Sciences</i> ); Luo, Jinping ( <i>Institute of Electronics, Chinese Academy of Sciences</i> ); Xu, Shengwei ( <i>Institute of Electronics, Chinese Academy of Sciences</i> ); Jin, Hongyan ( <i>Obstetrics and Gynecology Dept., First Hospital Peking University</i> ); Cai, Xinxia* ( <i>Institute of Electronics, Chinese Academy of Sciences</i> )
17:15-19:00	FrPoS-16.7	<b>Parkinson's Disease Classification of mPower Walking Activity Participants</b> Pittman, Benjamin ( <i>Univ. of Washington</i> ); Hosseini Ghomi, Reza ( <i>Univ. of Washington</i> ); Si, Dong* ( <i>Univ. of Washington</i> )	17:15-19:00	FrPoS-18.2	<b>Fabrication and Interrogation of Refractive Index Biosensors based on Etched Fiber Bragg Grating (EFBG)</b> Bekmurzayeva, Aliya* ( <i>National Lab Astana, Nazarbayev Univ.</i> ; <i>PhD in Science, Engineering and Technology Program, School of Engineering</i> ); Shaimerdenova, Madina ( <i>National Lab Astana, Nazarbayev Univ.</i> ); Tosi, Daniele ( <i>Nazarbayev Univ.</i> )
FrPoS-17: 17:15-19:00 Exhibit Hall 2 <b>Medical Instrumentation – Poster (Theme 7)</b> (Poster Session)					
17:15-19:00	FrPoS-17.1	<b>Monitoring Sucking Abilities in Newborns: Design and Validation on Adult of a Wearable System for Non-Invasive Deglutition Detection</b> Del Fabbro Arcopitno, Micaela ( <i>Università Campus Bio-Medico di Roma</i> ); Tosi, Jacopo ( <i>Università Campus Bio-Medico di Roma</i> ); Formica, Domenico ( <i>Campus Bio-Medico University</i> ); Taffoni, Fabrizio* ( <i>Campus Bio-Medico University</i> )	17:15-19:00	FrPoS-18.3	<b>A Novel Approach for Swallow Detection by Fusing Throat Acceleration and PPG Signal</b> Wei, Li* ( <i>Zhejiang University</i> ); Pan, Yun ( <i>Zhejiang University</i> ); Zhong, Yizhou ( <i>Hangzhou Proton Technology Co., Ltd.</i> ); Huan, Ruohong ( <i>Zhejiang University of technology</i> )
17:15-19:00	FrPoS-17.2	<b>A High-Throughput Impedimetric Platform for Biological Analysis: Design, Implementation and Experimental Results</b> Giancarlo, Ayala-Charca ( <i>York University</i> ); Munidasa, Samal ( <i>York University</i> ); Magierowski, Sebastian ( <i>York University</i> ); Ghafar-Zadeh, Ebrahim* ( <i>York University</i> )	17:15-19:00	FrPoS-18.4	<b>EMG Channel Selection for Improved Hand Gesture Classification</b> Samadani, Ali* ( <i>Philips Research North America</i> )
17:15-19:00	FrPoS-17.3	<b>Piezoelectric Tooth Aligner for Accelerated Orthodontic Tooth Movement</b> Bani-Hani, Muath ( <i>Jordan University of Science and Technology.</i> ); Karami, M. Amin* ( <i>State University of New York at Buffalo</i> )	17:15-19:00	FrPoS-18.5	<b>Preliminary Finite Element Model for Hydrogen-Based Electrochemical Glucose Sensors</b> Valdovinos, John* ( <i>California State University Northridge</i> )



17:15-19:00	FrPoS-18.6	<b>Flexible Non-Contact Electrodes for Bioelectrical Signal Monitoring</b> Liu, Shuting ( <i>Shenzhen Institutes of Advanced Tech., Chinese Academy of Sciences</i> ); Liu, Xueyu ( <i>Chongqing Univ. of Tech.</i> ); Jiang, Yanbing ( <i>Shenzhen Institutes of Advanced Tech.</i> ); Wang, Xin ( <i>Shenzhen Institutes of Advanced Tech., Chinese Academy of Sciences</i> ); Huang, Pin-Gao ( <i>Chinese Academy of Sciences</i> ); Wang, Hui ( <i>Shenzhen Institutes of Advanced Tech., Chinese Academy of Sciences</i> ); Zhu, Mingxing ( <i>Shenzhen Institutes of Advanced Tech. Chinese Academy of Sciences</i> ); Tan, Jingqian ( <i>Third Affiliated Hospital, Sun Yat-Sen Univ.</i> ); Li, Peng ( <i>Third Affiliated Hospital of Sun Yat-Sen Univ.</i> ); Lin, Chuang ( <i>Shenzhen Institutes of Advanced Tech., Chinese Academy of Sciences</i> ); Zhang, Guanghe ( <i>Institute of Computing Tech., Chinese Academy of Sciences</i> ); Chen, Shixiong* ( <i>Shenzhen Institutes of Advanced Tech.</i> ); Li, Guanglin ( <i>Shenzhen Institutes of Advanced Tech.</i> )	17:15-19:00	FrPoS-19.6	<b>System Level Framework for Assessing the Accuracy of Neonatal EEG Acquisition</b> O'Sullivan, Mark* ( <i>University College Cork</i> ); Popovici, Emanuel ( <i>University College Cork</i> ); Bocchino, Andrea ( <i>Tyndall National Institute</i> ); O'Mahony, Conor ( <i>Tyndall National Institute, University College Cork</i> ); Boylan, Geraldine ( <i>University College Cork</i> ); Temko, Andriy ( <i>University College Cork</i> )
17:15-19:00	FrPoS-18.7	<b>Disposable Stiffness Sensor for Endoscopic Examination</b> Faragasso, Angela* ( <i>University of Tokyo</i> ); Bimbo, Joao ( <i>Istituto Italiano di Tecnologia</i> ); Yamashita, Atsushi ( <i>University of Tokyo</i> ); Asama, Hajime ( <i>University of Tokyo</i> )	17:15-19:00	FrPoS-19.7	<b>A Pilot Study of an Unobtrusive Bed-Based Sleep Quality Monitor for Severely Disabled Autistic Children</b> Carlson, Charles* ( <i>Kansas State Univ.</i> ); Suliman, Ahmad ( <i>Kansas State Univ.</i> ); Alivar, Aleah ( <i>Kansas State Univ.</i> ); Prakash, Punit ( <i>Kansas State Univ.</i> ); Thompson, David ( <i>Kansas State Univ.</i> ); Natarajan, Balasubramaniam ( <i>Kansas State Univ.</i> ); Warren, Steve ( <i>Kansas State Univ.</i> )
17:15-19:00	FrPoS-18.8	<b>A Wrist-Worn Strap with an Array of Electrodes for Robust Physiological Sensing</b> Ibrahim, Bassem* ( <i>Texas A&amp;M University</i> ); McMurray, Justin ( <i>Texas A&amp;M University</i> ); Jafari, Roozbeh ( <i>Texas A&amp;M University</i> )	17:15-19:00	FrPoS-19.8	<b>A System for Assessment of Canine-Human Interaction during Animal-Assisted Therapies</b> Foster, Marc ( <i>North Carolina State University</i> ); Beppler, Eric ( <i>North Carolina State University</i> ); Holder, Timothy ( <i>North Carolina State University</i> ); Dieffenderfer, James ( <i>North Carolina State University</i> ); Erb, Patrick ( <i>North Carolina State University</i> ); Everette, Kristy ( <i>Duke University</i> ); Gruen, Margaret ( <i>North Carolina State University</i> ); Somers, Tamara ( <i>Duke University</i> ); Evans, Thomas ( <i>BioSense</i> ); Daniele, Michael ( <i>North Carolina State University</i> ); Roberts, David ( <i>North Carolina State University</i> ); Bozkurt, Alper* ( <i>North Carolina State University</i> )
FrPoS-19: 17:15-19:00		Exhibit Hall 2	FrPoS-20: 17:15-19:00		
Physiological Monitoring – Poster (Theme 7) (Poster Session)			Exhibit Hall 2		
17:15-19:00	FrPoS-19.1	<b>A Novel Calibration Procedure of Pulse Transit Time based Blood Pressure Measurement with Heart Rate and Respiratory Rate</b> Lui, Hin Wai* ( <i>Hong Kong Univ. of Science and Technology</i> ); Chow, King Lau ( <i>Hong Kong Univ. of Science and Technology</i> )	Physiological Sensing – Poster (Theme 7) (Poster Session)		
17:15-19:00	FrPoS-19.2	<b>Effect of Position and Fastening Belt Pressure on the Accuracy of PPG-Based Heart Rate Sensor</b> Shimazaki, Takunori ( <i>Osaka City Univ.</i> ); Kuwahara, Yuzu ( <i>Osaka City Univ.</i> ); Kimoto, Masaya ( <i>Osaka City Univ.</i> ); Hara, Shinsuke* ( <i>Osaka City Univ.</i> ); Yomo, Hiroyuki ( <i>Kansai Univ.</i> )	17:15-19:00	FrPoS-20.1	<b>Estimating Localized Bio-Impedance with Measures from Multiple Redundant Electrode Configurations</b> Fu, Bo ( <i>Univ. of Alabama</i> ); Freeborn, Todd* ( <i>Univ. of Alabama</i> )
17:15-19:00	FrPoS-19.3	<b>Unconstrained Monitoring of Biological Signals using an Aortic Pulse Wave Sensor</b> Hagiyama, Naoki* ( <i>Hiroshima Univ.</i> ); Mito, Akihisa ( <i>Hiroshima Univ.</i> ); Hirano, Harutoyo ( <i>Shizuoka Univ.</i> ); Soh, Zu ( <i>Dept. of System Cybernetics, Institute of Engineering, Hiroshima Univ.</i> ); Fujita, Etsunori ( <i>Delta Tooling Co., Ltd.</i> ); Ogura, Yumi ( <i>Delta Tooling Co., Ltd.</i> ); Uchikawa, Ryuichi ( <i>Delta Tooling Co., Ltd.</i> ); Kaneko, Shigehiko ( <i>Univ. of Tokyo</i> ); Nakamura, Ryuji ( <i>Hiroshima Univ.</i> ); Saeki, Noboru ( <i>Hiroshima Univ.</i> ); Kawamoto, Masashi ( <i>Hiroshima Univ.</i> ); Yoshizumi, Masao ( <i>Hiroshima Univ.</i> ); Tsuji, Toshio ( <i>Hiroshima Univ.</i> )	17:15-19:00	FrPoS-20.2	<b>Characterization Study of Neck Photoplethysmography</b> Garcia Lopez, Irene* ( <i>Imperial College London</i> ); Imtiaz, Syed Anas ( <i>Imperial College London</i> ); Rodriguez-Villegas, Esther ( <i>Imperial College London</i> )
17:15-19:00	FrPoS-19.4	<b>Children Activity Recognition: Challenges and Strategies</b> Hosseini, Anahita ( <i>Dept. of Computer Science, Univ. of California Los Angeles</i> ); Fazeli, Shayan* ( <i>Univ. of California Los Angeles</i> ); van Vliet, Eleanne ( <i>Univ. of Southern California - Los Angeles</i> ); Valencia, Lisa ( <i>Univ. of Southern California - Los Angeles</i> ); Habre, Rima ( <i>Univ. of Southern California - Los Angeles</i> ); Sarrafzadeh, Majid ( <i>Univ. of California Los Angeles</i> ); Bui, Alex ( <i>Univ. of California Los Angeles</i> )	17:15-19:00	FrPoS-20.3	<b>Low-Cost, USB Connected and Multi-Purpose Biopotential Recording System</b> Sun, Han ( <i>Southeast University</i> ); Wolkowicz, Kelilah ( <i>Pennsylvania State University</i> ); Liu, Jiayang ( <i>Pennsylvania State University</i> ); Zhang, Xiong ( <i>Southeast University</i> ); Gluckman, Bruce J.* ( <i>Pennsylvania State University</i> )
17:15-19:00	FrPoS-19.5	<b>Psychophysiological Stress Assessment among On-Duty Firefighters</b> Rodrigues, Susana ( <i>Instituto de Engenharia de Sistemas e Computadores, Tecnologia e Ciência - INESC TEC</i> ); Dias, Duarte ( <i>INESC TEC</i> ); Paiva, Joana ( <i>INESC TEC, Faculty of Engineering, University of Porto</i> ); Cunha, Joao Paulo Silva* ( <i>INESC TEC</i> )	17:15-19:00	FrPoS-20.4	<b>A Modified Mask for Continuous Cardiac Monitoring during Positive Airway Pressure Therapy</b> Gardner, Mark* ( <i>Flinders University</i> ); Randhawa, Sharmil ( <i>Flinders University Medical Device Research Institute</i> ); Malouf, Gordon Joseph ( <i>ResMed</i> ); Reynolds, Karen ( <i>Flinders University Medical Device Research Institute</i> )
			17:15-19:00	FrPoS-20.5	<b>Power Wheelchair Footplate Pressure and Positioning Sensor</b> Majerus, Steve* ( <i>APT Center, Cleveland VAMC</i> ); Lerchbacker, Joseph ( <i>Louis Stokes Cleveland VA Medical Center</i> ); Mitchell, Steven ( <i>Louis Stokes Cleveland VA Medical Center</i> ); Bogie, Kath ( <i>Cleveland VA Medical Center/Case Western Reserve University</i> ); Henzel, M. Kristi ( <i>Louis Stokes Cleveland Veterans Affairs Medical Center</i> )

17:15-19:00	FrPoS-20.6	<b>Stable Contactless Sensing of Vital Signs using RGB-Thermal Image Fusion System with Facial Tracking for Infection Screening</b> Negishi, Toshiaki* ( <i>The Univ. of Electro-Communications</i> ); Sun, Guanghao ( <i>The Univ. of Electro-Communications</i> ); Liu, He ( <i>Harbin Univ. of Science and Technology</i> ); Sato, Shohei ( <i>Huawei Technologies Japan K.K.</i> ); Matsui, Takemi ( <i>Tokyo Metropolitan Univ.</i> ); Kirimoto, Tetsuo ( <i>The Univ. of Electro-Communications</i> )	17:15-19:00	FrPoS-21.7	<b>Tele-Monitoring and Tele-Rehabilitation of the Shoulder Muscular-Skeletal Diseases through Wearable Systems</b> Carbonaro, Nicola ( <i>University of Pisa</i> ); Lucchesi, Irene ( <i>University of Pisa</i> ); Lorussi, Federico ( <i>University of Pisa</i> ); Tognetti, Alessandro* ( <i>University of Pisa</i> )
17:15-19:00	FrPoS-20.7	<b>Bed Sensor System with Multiple Weight Sensor Units for Urine Accumulation Measurement in Bladder</b> Noyori, Shuhei* ( <i>University of Tokyo</i> ); Noguchi, Hiroshi ( <i>University of Tokyo</i> ); Nakagami, Gojiro ( <i>University of Tokyo</i> ); Mori, Taketoshi ( <i>University of Tokyo</i> ); Sanada, Hiromi ( <i>University of Tokyo</i> )	17:15-19:00	FrPoS-21.8	<b>Predicting Walking Intentions using sEMG and Mechanical Sensors for Various Environment</b> Kyeong, Seulki* ( <i>KAI/ST</i> ); Shin, Wonseok ( <i>KAI/ST</i> ); Kim, Jung ( <i>Korea Advanced Institute of Science and Technology</i> )
17:15-19:00	FrPoS-20.8	<b>Data Compression via Low Complexity Delta Transition Lossless Encoding for Remote Physiological and Environmental Monitoring</b> Felton, Christopher* ( <i>Mayo Clinic</i> ); Gilbert, Barry ( <i>Mayo Clinic College of Medicine</i> ); Haider, Clifton ( <i>Mayo Clinic</i> )	FrPoS-22: 17:15-19:00 Exhibit Hall 2 <b>mHealth Applications – Poster (Theme 7)</b> (Poster Session)		
17:15-19:00	FrPoS-21.1	<b>Human Activity Recognition from Inertial Sensor Time-Series using Batch Normalized Deep LSTM Recurrent Networks</b> Zebin, Tahmina ( <i>Univ. of Manchester</i> ); Sperrin, Matthew ( <i>Univ. of Manchester</i> ); Peek, Niels ( <i>Univ. of Manchester</i> ); Casson, Alexander James* ( <i>Univ. of Manchester</i> )	17:15-19:00	FrPoS-22.1	<b>Real-Time Action Recognition and Fall Detection based on Smartphone</b> Ning, YunKun ( <i>Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences</i> ); Zhao, Guoru* ( <i>Shenzhen Institutes of Advanced Technology Chinese Academy of Sciences, Shenzhen, China</i> ); Liang, Shengyun ( <i>Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences</i> )
17:15-19:00	FrPoS-21.2	<b>Development of a Lightweight Flexible Construction Work Assist Suit using Pneumatic Rubber Artificial Muscles</b> Ogawa, Kazunori* ( <i>Daiya Industry Co., Ltd.</i> ); Ono, Ayumu ( <i>Daiya Industry Co., Ltd.</i> ); Fukuda, Yoshiyuki ( <i>Daiya Industry Co., Ltd.</i> ); Tsuneyasu, Kosuke ( <i>Hiroshima University</i> ); Kurita, Yuichi ( <i>Hiroshima University</i> )	17:15-19:00	FrPoS-22.2	<b>An Optimised Algorithm for Accurate Steps Counting from Smart-Phone Accelerometry</b> Salvi, Dario* ( <i>University of Oxford</i> ); Velardo, Carmelo ( <i>University of Oxford</i> ); Brynes, Jamieson ( <i>University of Oxford</i> ); Tarassenko, Lionel ( <i>University of Oxford</i> )
17:15-19:00	FrPoS-21.3	<b>Capacitive Sensors Array for Plantar Pressure Measurement Insole Fabricated with Flexible PCB</b> Aqueveque, Pablo* ( <i>University of Concepcion</i> ); Pastene, Francisco ( <i>University of Concepcion</i> ); Osorio, Rodrigo ( <i>University of Concepcion</i> ); Saavedra, Francisco ( <i>University of Concepcion</i> ); Pino, Esteban J ( <i>Universidad de Concepcion</i> )	17:15-19:00	FrPoS-22.3	<b>Subject Count Estimation by using Doppler Radar Occupancy Sensor</b> Yavari, Ehsan* ( <i>University of Hawaii at Manoa</i> ); Gao, Xiaomeng ( <i>University of California, Davis</i> ); Boric-Lubecke, Olga ( <i>University of Hawaii at Manoa</i> )
17:15-19:00	FrPoS-21.4	<b>Wearable Fetal Monitoring Solution for Improved Mobility during Labor and Delivery</b> Nguyen, Kristen* ( <i>Farus, LLC</i> ); Elizabeth, Bamgbose ( <i>University of San Diego</i> ); Cox, Brian ( <i>Farus, LLC</i> ); Huang, Sean Po-Hsiang ( <i>Farus, LLC</i> ); Mierzwa, Andrzej ( <i>Farus, LLC</i> ); Hutchins, Susie ( <i>University of San Diego</i> ); Caso, Brand ( <i>Tenacore Holdings, Inc.</i> ); Culjat, Martin ( <i>Dthera Sciences</i> ); Connelly, Cynthia ( <i>University of San Diego</i> ); Lacoursiere, Yvette ( <i>University of California, San Diego</i> ); Singh, Rahul ( <i>Farus, LLC</i> )	17:15-19:00	FrPoS-22.4	<b>A Human Tracking and Physiological Monitoring FSK Technology for Single Senior at Home Care</b> Wang, Jing* ( <i>Texas Tech Univ.</i> ); Li, Changzhi ( <i>Texas Tech Univ.</i> )
17:15-19:00	FrPoS-21.5	<b>Pre-Impact Alarm System for Fall Detection using MEMS Sensors and HMM-Based SVM Classifier</b> Zhao, Guoru* ( <i>Shenzhen Institutes of Advanced Technology Chinese Academy of Sciences, Shenzhen, China</i> ); Liang, Shengyun ( <i>Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences</i> )	17:15-19:00	FrPoS-22.5	<b>Integrated Signal Encoding and Analysis System for Actigraphy-Based Long-Term Monitoring of Periodic Limb Movements in Sleep</b> Athavale, Yashodhan* ( <i>Ryerson Univ.</i> ); Krishnan, Sridhar ( <i>Ryerson Univ.</i> ); Raissi, Afsaneh ( <i>Sunnybrook Health Sciences Centre</i> ); Kirolos, Nardin ( <i>Sunnybrook Health Sciences Centre</i> ); Murray, Brian ( <i>Sunnybrook Health Sciences Center, Univ. of Toronto</i> ); Boulos, Mark I. ( <i>Sunnybrook Health Science Centre</i> )
17:15-19:00	FrPoS-21.6	<b>Wearable EMG Shirt for Upper Limb Training</b> Pino, Esteban J* ( <i>Univ. de Concepcion</i> ); Arias, Yerko ( <i>Univ. de Concepcion</i> ); Aqueveque, Pablo ( <i>Univ. of Concepcion</i> )	17:15-19:00	FrPoS-22.6	<b>Finger-Worn Sensors for Accurate Functional Assessment of the Upper Limbs in Real-World Settings</b> Liu, Xin ( <i>University of Massachusetts Amherst</i> ); Rajan, Smita ( <i>University of Massachusetts Amherst</i> ); Ramasarma, Nathan ( <i>ArcSecond Inc.</i> ); Bonato, Paolo ( <i>Harvard Medical School</i> ); Lee, Sunghoon Ivan* ( <i>University of Massachusetts Amherst</i> )
			17:15-19:00	FrPoS-22.7	<b>Development of a Smart Home-Based Package for Unobtrusive Physiological Monitoring</b> Armanfard, Narges* ( <i>University of Toronto</i> ); Komeili, Majid ( <i>University of Toronto</i> ); Mihailidis, Alex ( <i>University of Toronto</i> )

FrPoS-23: 17:15-19:00 Exhibit Hall 2  
**Ambulatory and Diagnostic Systems and Devices (III) – Poster (Theme 9) (Poster Session)**

17:15-19:00 FrPoS-23.1  
**Detection of Echinocyte during Perfusion with Oxygenator based on Continuous Blood Viscosity Monitoring**  
 Okahara, Shigeyuki\* (*Junshin Gakuen University*); Miyamoto, Satoshi (*Hiroshima University Hospital*); Soh, Zu (*Dept. of System Cybernetics, Institute of Engineering, Hiroshima University*); Tsuji, Toshio (*Hiroshima University*)

17:15-19:00 FrPoS-23.2  
**Considering Plasma Insulin Concentrations in Adaptive Model Predictive Control for Artificial Pancreas Systems**  
 Hajizadeh, Iman (*Illinois Institute of Technology*); Rashid, Mudassir (*Illinois Institute of Technology*); Cinar, Ali\* (*Illinois Institute of Technology*)

17:15-19:00 FrPoS-23.3  
**Clinical Decision Support for Early Detection of Prediabetes and Type 2 Diabetes Mellitus using Wearable Technology**  
 Baig, Mirza Mansoor\* (*Auckland Univ. of Technology*); Mirza, Farhaan (*Auckland Univ. of Technology*); GholamHosseini, Hamid (*Auckland Univ. of Technology*); Gutierrez, Jairo (*Auckland Univ. of Technology*); Ullah, Ehsan (*Auckland District Health Board*)

17:15-19:00 FrPoS-23.4  
**Towards an ASIC-Based Fluoroscopic Capsule for the Early Cancer Detection in the Small Intestine**  
 Varnava, Giorgos (*Univ. of Cyprus*); Demosthenous, Panayiota (*Univ. of Cyprus*); Koulaouzidis, Anastasios (*The Royal Infirmary of Edinburgh*); Georgiou, Julius\* (*Univ. of Cyprus*)

FrPoS-24: 17:15-19:00 Exhibit Hall 2  
**Microtechnology – Poster (Theme 3) (Poster Session)**

17:15-19:00 FrPoS-24.1  
**Achieving Ultra-Conformability with Polyimide-Based ECoG Arrays**  
 Vomero, Maria\* (*University of Freiburg*); Porto Cruz, Maria Francisca (*University of Freiburg*); Zucchini, Elena (*Istituto Italiano di Tecnologia*); Shabanian, Ardavan (*Lab for Design of Microsystems - IMTEK*); Delfino, Emanuela (*Italian Institute of Technology - Ferrara*); Carli, Stefano (*Istituto Italiano di Tecnologia*); Fadiga, Luciano (*Università degli Studi di Ferrara, Ferrara, Italia*); Ricci, Davide (*Istituto Italiano di Tecnologia - RBCS*); Stieglitz, Thomas (*University of Freiburg*)

17:15-19:00 FrPoS-24.2  
**Impact of Reactive Obstacle on Molecular Communication between Nanomachines**  
 Al-Zu'bi, Muneer\* (*University of Technology Sydney*); Mohan, Ananda (*University of Technology Sydney*); Ling, Sai Ho, Steve (*University of Technology Sydney*)

17:15-19:00 FrPoS-24.3  
**Direct Measurement of Mass Transport in Actuation of Conducting Polymers Nanotubes**  
 Eslamian, Mohammadjavad\* (*University of Houston*); Antensteiner, Martin (*University of Houston*); Abidian, Mohammad Reza (*University of Houston*)

17:15-19:00 FrPoS-24.4  
**Single Molecule Free Solution Hydrodynamic Separation for Size Profiling of Serum Cell-Free DNA**  
 Li, Andrew (*Johns Hopkins University*); Friedrich, Sarah (*Johns Hopkins University*); Wang, Tza-Huei\* (*Johns Hopkins University*)

17:15-19:00 FrPoS-24.5  
**Focused Ion Beam-Based Milling, Imaging and Analysis of 3D Tumor Spheroids**  
 Almarshad, Hassan\* (*Aljofir Univ.*); Hoshino, K. (*Univ. of Connecticut*); Madhavan, Mathangi (*Univ. of Connecticut, Storrs*)

17:15-19:00 FrPoS-24.6  
**Mouse Embryo Assay to Evaluate Polydimethylsiloxane (PDMS) Embryo-Toxicity**  
 Colucci, Francesco (*University of Leeds*); McKeegan, Paul Joseph (*University of Leeds*); Picton, Helen (*University of Leeds*); Pensabene, Virginia\* (*University of Leeds*)

17:15-19:00 FrPoS-24.7  
**Active, Artificial Hair Cells for Biomimetic Sound Detection based on Active Cantilever Technology**  
 Lenk, Claudia\* (*TU Ilmenau*); Ekin, Ali (*TU Ilmenau*); Rangelow, Ivo W. (*TU Ilmenau*); Gutschmidt, Stefanie (*Univ. of Canterbury*)

17:15-19:00 FrPoS-24.8  
**Single LNA-Enhanced Nanopore Genetic Discrimination of Pathogenic Serotypes and Cancer Driver Mutations**  
 Gu, Li-Qun\* (*University of Missouri*)

17:15-19:00 FrPoS-24.9  
**Automatic Planar Asymmetric Lipid Bilayer Membrane Formation Toward Biological High-Throughput Assay**  
 Gotanda, Masahide\* (*Keio Univ.*); Kamiya, Koki (*Kanagawa Academy of Science and Technology*); Osaki, Toshihisa (*Kanagawa Academy of Science and Technology*); Fujii, Satoshi (*Kanagawa Academy of Science and Technology*); Misawa, Nobuo (*KISTEC*); Miki, Norihisa (*Keio Univ.*); Takeuchi, Shoji (*Univ. of Tokyo*)

FrPoS-25: 17:15-19:00 Exhibit Hall 2  
**Cardiac Mechanics – Poster (Theme 5) (Poster Session)**

17:15-19:00 FrPoS-25.1  
**Computational Platform based on Deep Learning for Segmenting Ventricular Endocardium in Long-Axis Cardiac MR Imaging**  
 Leng, Shuang (*National Heart Centre Singapore*); Yang, Xulei (*Institute for Infocomm Research, A\*STAR*); Zhao, Xiaodan (*National Heart Centre Singapore*); Zeng, Zeng (*I2R, A\*STAR*); Su, Yi (*Institute of High Performance Computing*); Koh, Angela (*National Heart Centre Singapore*); Sim, Kheng Leng David (*National Heart Centre Singapore*); Tan, Ju Le (*National Heart Centre Singapore*); Tan, Ru San (*National Heart Center*); Zhong, Liang\* (*National Heart Centre Singapore*)

17:15-19:00 FrPoS-25.2  
**Cardiac Image Segmentation using Memory Persistence Methodology**  
 Yang, Xulei (*Institute for Infocomm Research, A\*STAR*); Su, Yi (*Institute of High Performance Computing*); Leng, Shuang (*Natl. Heart Centre Singapore*); Yeo, Si Yong (*Inst of High Performance Computing*); Yang, Feng (*Institute of High Performance Computing, A\*Star, Singapore*); Tan, Ru San (*Natl. Heart Center*); Zhong, Liang\* (*Natl. Heart Centre Singapore*)

17:15-19:00 FrPoS-25.3  
**Hemodynamic Evaluation of an Intra-Atrial Blood Pump on a Pulsatile Mock Circulatory Loop**  
 Smith, Peter Alex\* (*Texas Heart Institute*); Wang, Yaxin (*Texas Heart Institute*); Bieritz, Shelby (*Rice University*); Sampaio, Luiz C. (*Texas Heart Institute*); Metcalfe, Ralph (*University of Houston*); Cohn, William E. (*Texas Heart Institute*); Frazier, O.H. (*Texas Heart Institute @ St. Luke's Hospital*)

17:15-19:00 FrPoS-25.4  
**In Vivo Hemodynamic Evaluation of CH-VAD in a Bovine Model for 14 Days**  
 Wang, Yaxin\* (*Texas Heart Institute*); Conger, Jeff L. (*Texas Heart Institute*); Handy, Kelly (*Texas Heart Institute*); Smith, Peter Alex (*Texas Heart Institute*); Cheema, Faisal H. (*Baylor College of Medicine at Texas Heart Institute*); Sampaio, Luiz C. (*Texas Heart Institute*); Lin, Frank (*CH BioMedical Inc.*); Chen, Chen (*CH BioMedical Inc.*); Morgan, Jeffrey A. (*Baylor College of Medicine*)

17:15-19:00 FrPoS-25.5  
**Development of an Intelligent Ventricular Assist Device with a Function of Sensorless Thrombus Detection**  
 Maruyama, Takuro (*Tokyo Institute of Technology*); Murashige, Tomotaka (*Tokyo Institute of Technology*); Sakota, Daisuke (*National Institute of Advanced Industrial Science and Technology*); Maruyama, Osamu (*National Institute of Advanced Industrial Science and Technology (AIST)*); Hijikata, Wataru\* (*Tokyo Institute of Technology*)

17:15-19:00 FrPoS-25.6  
**In Vivo Feasibility Study of an Intra-Atrial Blood Pump for Partial Support of the Left Ventricle**  
 Smith, Peter Alex\* (*Texas Heart Institute*); Wang, Yaxin (*Texas Heart Institute*); Bieritz, Shelby (*Rice University*); Conger, Jeff L. (*Texas Heart Institute*); Sampaio, Luiz C. (*Texas Heart Institute*); Cohn, William E. (*Texas Heart Institute*); Frazier, O.H. (*Texas Heart Institute @ St. Luke's Hospital*)

FrPoS-26: 17:15-19:00 Exhibit Hall 2  
**Cardiovascular System Modeling – Poster (Theme 5) (Poster Session)**

17:15-19:00 FrPoS-26.1  
**Developing a Computational Model of Renal Nerves and Surgical System for Laparoscopic Renal Denervation**  
 Ye, Eunbi (POSTECH); Lee, Seung-Hyun (POSTECH); Baik, Jinhwan (POSTECH); Ryu, Seon Young (POSTECH); Song, Won Hoon (*Seoul National University Hospital*); Choi, Eue Keun (*Seoul National University Hospital*); Jeong, Chang Wook (*Seoul National University Hospital*); Park, Sung-Min\* (POSTECH)

17:15-19:00 FrPoS-26.2  
**InSilc: 3D Reconstruction and Plaque Characterization Tool**  
 Karanasiou, Georgia (*Institute of Molecular Biology and Biotechnology, FORTH*); Rigas, Georgios (*University of Ioannina*); Kyriakidis, Savvas (*Institute of Molecular Biology and Biotechnology, FORTH*); Tachos, Nikolaos (*Unit of Medical Technology and Intelligent Information Systems, Dept. of Materials Science and Engineering, University of Ioannina*); Sakellarios, Antonis (*Unit of Medical Technology and Application Systems, Dept of Material Science, University of Ioannina*); Fotiadis, Dimitrios I.\* (*University of Ioannina*)

17:15-19:00 FrPoS-26.3  
**Modeling Cardiac Hemodynamic Response during Exercise in Health and Hypertrophic Cardiomyopathy**  
 Farro, Ignacio (*School of Medicine, Republic University*); Arbeitman, Claudia (CONICET Consejo Nacional de Investigaciones Cientificas y Tecnicas); Cymberknop, Leandro Javier (*Universidad Tecnológica Nacional*); Cardelino, Juan (*Faculty of Engineering, Republic University*); Armentano, Ricardo Luis\* (*Republic University*)

17:15-19:00 FrPoS-26.4  
**A Stochastic and Mathematically Integrative Model of the Gender Modulation of Cardiorespiratory Activity**  
 BuSha, Brett\* (*The College of New Jersey*); Stella, Martha (*The College of New Jersey*)

17:15-19:00 FrPoS-26.5  
**A Preliminary Computational Model for Hypoxic Acidosis in Cardiac Myocytes**  
 Shimayoshi, Takao\* (*Kyushu University*); Yamamoto, Yuta (*Kyoto University*); Matsuda, Tetsuya (*Kyoto University*)

17:15-19:00 FrPoS-26.6  
**Fluid-Structure Interaction in the Cerebral Venous Transverse Sinus**  
 Shim, Eun Bo (*Kangwon National University*); Heldt, Thomas\* (*Massachusetts Institute of Technology*)

FrPoS-27: 17:15-19:00 Exhibit Hall 2  
**Vascular Mechanics – Poster (Theme 5) (Poster Session)**

17:15-19:00 FrPoS-27.1  
**In Vitro Hemodynamic Evaluation of Right Ventricle–Pulmonary Artery Continuity Reconstruction through a Trileaflet Expanded Polytetrafluoroethylene Valved Conduit**  
 Chen, Wei-Ling (*Kaohsiung Veterans General Hospital*); Kan, Chung-Dann\* (*Natl. Cheng Kung Univ. Hospital, Dept. of Surgery*)

17:15-19:00 FrPoS-27.2  
**A Fully Discrete Open Source Framework for the Simulation of Vascular Remodelling**  
 Osborne, James\* (*University of Melbourne*); Bernabeu, Miguel O. (*The University of Edinburgh*)

17:15-19:00 FrPoS-27.3  
**A Clinical Decision Support Platform for the Risk Stratification, Diagnosis, and Prediction of Coronary Artery Disease Evolution**  
 Sakellarios, Antonis (*Unit of Medical Technology and Application Systems, Dept of Material Science, Univ. of Ioannina*); Siogkas, Panagiotis (FORTH-IMBB); Georga, Eleni I. (*Univ. of Ioannina*); Tachos, Nikolaos (*Unit of Medical Technology and Intelligent Information Systems, Dept. of Materials Science and Engineering, Univ. of Ioannina*); Kigka, Vassiliki (*Univ. of Ioannina*); Tsompou, Panagiota (*Unit of Medical Technology and Intelligent Information Systems, Dept. of Materials Science and Engineering, Univ. of Ioannina*); Andrikos, Ioannis (*Univ. of Ioannina*); Karanasiou, Georgia (*Institute of Molecular Biology and Biotechnology, FORTH*); Rocchiccioli, Silvia (*Institute of Clinical Physiology, National Research Council*); Correia, Joao (*Biotronics3D*); Pelosi, Gualtiero (*Institute of Clinical Physiology, National Research Council*); Stofella, Paolo (*Exprivia, Molfetta (Bari)*); Filipovic, Nenad (*Univ. of Kragujevac*); Parodi, Oberdan (*CNR Clinical Physiology Institute - Milan*); Fotiadis, Dimitrios I.\* (*Univ. of Ioannina*)

17:15-19:00 FrPoS-27.4  
**Local Evaluation of Variation in Pulse Wave Velocity Over the Cardiac Cycle using Single-Element Ultrasound Transducer**  
 Pm, Nabeel\* (*Indian Institute of Technology Madras*); V, Raj Kiran (IIT Madras); Joseph, Jayaraj (HTIC, Indian Institute of Technology Madras); Sivaprakasam, Mohanasankar (*Indian Institute of Technology Madras*)

17:15-19:00 FrPoS-27.5  
**Flow Mediated Dilation in Cirrhosis: A Pilot Study in Different Stages of the Disease**  
 Armentano, Ricardo Luis\* (*Republic Univ.*); Arbeitman, Claudia (CONICET Consejo Nacional de Investigaciones Cientificas y Tecnicas); Cymberknop, Leandro Javier (*Universidad Tecnológica Nacional*); Farro, Ignacio (*School of Medicine, Republic Univ.*); Viotti, Rodrigo (*Universidad de la República*); Cardelino, Juan (*Faculty of Engineering, Republic Univ.*)

17:15-19:00 FrPoS-27.6  
**In Silico Analysis of Stent Deployment – Effect of Stent Design**  
 Karanasiou, Georgia (*Institute of Molecular Biology and Biotechnology, FORTH*); Tachos, Nikolaos (*Unit of Medical Technology and Intelligent Information Systems, Dept. of Materials Science and Engineering, Univ. of Ioannina*); Sakellarios, Antonis (*Unit of Medical Technology and Application Systems, Dept of Material Science, Univ. of Ioannina*); Conway, Claire (*Institute for Medical Engineering and Science, Massachusetts Institute of Technology, Cambridge*); Pennati, Giancarlo (*Dept. of Chemistry, Materials and Chemical Engineering Dept. "Giulio Natta", Politecnico di Milano*); Petrini, Lorenza (*Dept. of Civil and Environmental Engineering, Politecnico di Milano*); Michalis, Lampros (*Univ. of Ioannina*); Edelman, Elazer (*Institute for Medical Engineering and Science, Massachusetts Institute of Technology, Cambridge, MA and Cardiovascular Division*); Fotiadis, Dimitrios I.\* (*Univ. of Ioannina*)

- 17:15-19:00 FrPoS-27.7  
**Carotid Local Pulse Wave Velocity Measurement using Dual-Element Accelerometric Patch Probe**  
R, Arathy\* (*Indian Institute of Technology Madras*); Pm, Nabeel (*Indian Institute of Technology Madras*); Joseph, Jayaraj (*HTIC, Indian Institute of Technology Madras*); Sivaprakasam, Mohanasankar (*Indian Institute of Technology Madras*)
- 17:15-19:00 FrPoS-27.8  
**An In-Vivo Study on Intra-Day Variations in Vascular Stiffness using ARTSENS Pen**  
V, Raj Kiran\* (*IIT Madras*); Pm, Nabeel (*Indian Institute of Technology Madras*); Joseph, Jayaraj (*HTIC, Indian Institute of Technology Madras*); Venkatramanan, Surya (*Healthcare Technology Innovation Center (HTIC) IIT-M*); Shah, Malay llesh (*Healthcare Technology Innovation Center (HTIC), Indian Institute of Technology, Madras*); Sivaprakasam, Mohanasankar (*Indian Institute of Technology Madras*)
- FrPoS-28: 17:15-19:00 Exhibit Hall 2  
**Friday 1 Page Research Poster Paper (IV) (Poster Session)**
- 17:15-19:00 FrPoS-28.1  
**Characteristic Analysis of Intestinal Tissue Measurement using Spatially Resolved Near-Infrared Spectroscopy**  
Suzuki, Keita\* (*Shizuoka University*); Niwayama, Masatsugu (*Shizuoka University*)
- 17:15-19:00 FrPoS-28.2  
**Predictors of Fetal Anatomy Visualization on Prenatal Ultrasound**  
Mieloszyk, Rebecca\* (*Philips Healthcare, University of Washington*); Hall, Christopher (*Philips Healthcare, University of Washington*); Moshiri, Mariam (*University of Washington*)
- 17:15-19:00 FrPoS-28.3  
**An Energy-Efficient Custom Baseband Core for Passive/Semi-Passive Implantable Medical Chips**  
Shi, Weiwei\* (*Shenzhen University*); Choy, Chiu Sing (*Chinese University of Hong Kong*)
- 17:15-19:00 FrPoS-28.4  
**Sensitivity Analysis and Probe Development for Pig Brain Measurement using NIRS**  
Watanabe, Kei\* (*Shizuoka University*); Niwayama, Masatsugu (*Shizuoka University*)
- 17:15-19:00 FrPoS-28.5  
**The Center for Reproducible Biomedical Modeling**  
Nickerson, David Phillip\* (*University of Auckland*); Bliinov, Michael (*University of Connecticut School of Medicine*); Gennari, John H. (*University of Washington*); Goldberg, Arthur (*Icahn School of Medicine at Mount Sinai*); Karr, Jonathan (*Icahn School of Medicine at Mount Sinai*); Moraru, Ion (*University of Connecticut School of Medicine*); Schaff, James (*University of Connecticut School of Medicine*); Sauro, Herbert (*University of Washington*)
- 17:15-19:00 FrPoS-28.6  
**Design of a Low Cost Smartphone-Controlled Continuous-Wave Spatially Resolved Near-Infrared Spectrometer (CW-SR NIRS)**  
Pagano, Roberto\* (*University of British Columbia*); Askari, Shahbaz (*University of British Columbia*); Petersen, Christian (*British Columbia Children's Hospital*); Beaudry, Shaylene (*Digital Health Innovation Lab, BC Children's Hospital*); Ansermino, J. Mark (*British Columbia's Children's Hospital*); Dumont, Guy (*University of British Columbia*)
- 17:15-19:00 FrPoS-28.7  
**Continuous Wearable and Convenient Cuff-Less Blood Pressure Monitoring by Sensing Pulse Transit Time Inside Eyeglasses**  
Holz, Christian\* (*Microsoft Research*)
- 17:15-19:00 FrPoS-28.8  
**Testing the Feasibility of a Wearable Device to Detect Leg Position in Patients with Edema**  
Sathye, Vedant (*Stanford University*); Gole, Sarin (*Stanford University*); Sharma, Karan (*Stanford University*); Lin, Bryant\* (*Stanford University*)
- 17:15-19:00 FrPoS-28.9  
**Utilizing Existing Utility Meters for Unobtrusive Monitoring and Detection of Potential Hazardous Situations in Home**  
Milosevic, Mladen\* (*Philips Research North America*); Schulman, Daniel (*Philips Research North America*); Parvaneh, Saman (*Philips Research North America*)
- 17:15-19:00 FrPoS-28.10  
**Design and Implementation of a Seated Posture Measurement System based on IMU Sensors: Preliminary Results**  
Aqueveque, Pablo\* (*Univ. of Concepcion*); Diaz, Macarena (*Univ. of Concepcion*); Osorio, Rodrigo (*Univ. of Concepcion*)
- 17:15-19:00 FrPoS-28.11  
**Spiral Resonators for Objective Screening of Cutaneous Melanoma**  
Villafana-Ibarra, Bernardo\* (*Wichita State University*); Bhandari, Subash (*Wichita State University*); Becker, Ryan (*Wichita State University*); Cluff, Kim (*Wichita State University*)
- 17:15-19:00 FrPoS-28.12  
**Deformable Breathing Phantom for Radiotherapy Planning**  
VanGenderen, Brandon\* (*BC Cancer - Abbotsford*); Visagie, Dallas (*BC Cancer - Abbotsford*); Long, Xiao Lin (*University of the Fraser Valley*); Ramaseshan, Ramani (*BC Cancer - Abbotsford center, BC and adjunct Professor University of Fraser Valley*); Currie, Tammy (*BC Cancer Abbotsford*)
- 17:15-19:00 FrPoS-28.13  
**NIR Photothermal Therapy and Multi-Photon Imaging using Functionalized Graphene Oxide**  
Jun, Seung Won (*Pusan National Univ.*); Kwon, Junyoung (*Pusan National Univ.*); Panchanathan, Manivasagan (*Pukyong National Univ.*); Kim, Chang-Seok\* (*Pusan National Univ.*)
- 17:15-19:00 FrPoS-28.14  
**EEG Systems for Accommodating Thick and Curly Hair**  
Etienne, Arnelles (*CMU*); Krishnan, Ashwathi\* (*Carnegie Mellon University*); Kelly, Shawn (*Carnegie Mellon University*); Grover, Pulkit (*Carnegie Mellon University*)
- 17:15-19:00 FrPoS-28.15  
**SPR Imaging Sensor based on Wavelength-Swept Laser**  
Bak, Seongjin (*Pusan National University*); Kim, Gyeong Hun (*Pusan National University*); Jang, Hansol (*Pusan National University*); Kim, Jeong Won (*Pusan National University*); Kim, Chang-Seok\* (*Pusan National University*)
- 17:15-19:00 FrPoS-28.16  
**Dual Band Modality Switchable Near-Infrared Wavelength-Swept Laser for Diffuse Optical Spectroscopic Imaging**  
Jang, Hansol (*Pusan National Univ.*); Kim, Gyeong Hun (*Pusan National Univ.*); Kim, Chang-Seok\* (*Pusan National Univ.*)
- 17:15-19:00 FrPoS-28.17  
**A Three-Layered, Miniaturized Wireless Image Capturing System for an Active Intraocular Prosthesis**  
Shim, Shinyong (*Seoul National University*); Seo, Kangmoon (*Seoul National University College of Veterinary Medicine*); Kim, Sung June\* (*Seoul National University*)
- 17:15-19:00 FrPoS-28.18  
**Assessment of Carotid Artery Biomechanics using an Improved Pulse Wave Imaging Technique: A Preliminary Clinical Study**  
Bi, Zuyue (*Shenzhen University*); Li, Zhenzhou (*Dept. of Ultrasound, the Second People's Hospital of Shenzhen*); Hu, Lixia (*Shenzhen University*); Zhang, Xiao (*Shenzhen University*); Chen, Siping (*Shenzhen University*); Lu, Minhua\* (*Shenzhen University*)

- 17:15-19:00 FrPoS-28.19  
**Quantitative Analysis on Remaining Thickness of Adult Dentin using OCT an in Vitro Study**  
Zheng, Haoteng (Shenzhen University); Gao, Qingfeng (Shenzhen University); Ding, Jiangfeng (Nanshan Hospital of Shenzhen University); Lu, Minhua\* (Shenzhen University)
- 17:15-19:00 FrPoS-28.20  
**Sleep Complexity: A New Metric for Sleep Analysis**  
Zhang, Wei\* (EPFL); Paraschiv-Ionescu, Anisoara (Ecole Polytechnique Federale); Mellone, Sabato (Univ. of Bologna); Taraldsen, Kristin (Dept. of NeuroMedicine and Movement Science, Norwegian Univ. of Science and Technology); Mikolaizak, A. Stefanie (Robert Bosch Foundation for Medical Research); Pijnappels, Mirjam (Dept. of Human Movement Sciences, Vrije Univ. Amsterdam, Amsterdam Movement Sciences); Aminian, Kamiar (Ecole Polytechnique Federale de Lausanne)
- 17:15-19:00 FrPoS-28.21  
**Quantifying Pelvic Floor Muscle Elasticity under Normal and Prolapse Conditions by Ultrasound**  
Hu, Lixia (Shenzhen University); Li, Ling (Eastern Hospital of Shanghai); Wang, Huifang (Shenzhen Second People's Hospital); Bi, Zuyue (Shenzhen University); Zhang, Xiao (Shenzhen University); Lu, Minhua\* (Shenzhen University)
- 17:15-19:00 FrPoS-28.22  
**Three-Dimensional Scaffolds for Organs-on-Chips Systems by Two-Photon Polymerization**  
Ding, Haibo (Southeast University); Zhu, Chenxu (Southeast University); Gu, Hongcheng (Southeast University); Gu, Min (MIT University); Gu, Zhong-Ze\* (Southeast University)
- 17:15-19:00 FrPoS-28.23  
**Continuous Cuffless Systolic Blood Pressure Monitoring Scheme using PPG Sensor and Doppler Radar**  
Ohata, Tomoyuki\* (The University of Electro-Communications); Ishibashi, Koichiro (The University of Electro-Communications); Sun, Guanghao (The University of Electro-Communications)
- 17:15-19:00 FrPoS-28.24  
**Evaluation Trial for Characteristics Body Temperature Change of Persons with Spinal Cord Injury**  
Takashima, Atsushi\* (National Rehabilitation Center for Persons with Disabilities); Takizawa, Kenta (Tokyo Institute of Technology, National Rehabilitation Center for Persons with Disabilities); Suzurikawa, Jun (Research Institute of National Rehabilitation Center for Persons with Disabilities); Higuchi, Yukiharu (National Rehabilitation Center for Persons with Disabilities); Tamura, Toshiyo (Waseda Univ.); Kurabayashi, Daisuke (Tokyo Institute of Technology); Inoue, Takenobu (Research Institute of National Rehabilitation Center for Persons with Disabilities); Ogata, Toru (National Rehabilitation Center for Persons with Disabilities)
- 17:15-19:00 FrPoS-28.25  
**Classification of Aggressive Movements using Unilateral and Bilateral Smartwatches**  
Tchuente Kemdjo, Franck Fabrice\* (University of Ottawa); Lemaire, Edward (The Ottawa Hospital Rehab Centre); Baddour, Natalie (University of Ottawa)
- 17:15-19:00 FrPoS-28.26  
**Evaluation of Sequential Feature Selection in Heterogeneous Data using Simulated Subgroup Structures**  
Anderson, Ronald\* (Texas Tech University); Baker, Mary (Texas Tech University)
- 17:15-19:00 FrPoS-28.27  
**Online Phase Analysis of Neurophysiological Signals for Real-Time Feedback in Magnetoencephalography**  
Tseng, Chih-Hsin (Graduate Institute of BioMedical Electronics and Bioinformatics, National Taiwan Univ.); Hsu, Shen-Mou (Imaging Center for integrated Body, Mind, and Culture Research, National Taiwan Univ.); Chen, Jyh-Horng\* (National Taiwan Univ.)
- 17:15-19:00 FrPoS-28.28  
**Cell Viability Increase of the Alginate-Gelatin Scaffold**  
Nguyen, Trung\* (University of Ulsan); Duong Van, Thuy (University of Ulsan); Dang, Thi Thao (University of Ulsan); Lee, Yeasol (University of Ulsan); Phan, Huu Lam (Ulsan University); Lee, Hyoseok (University of Ulsan); Son, Hyewon (Dept. of BioMedical Engineering, University of Ulsan); Jang, Hojeong (Dept. of BioMedical Engineering, University of Ulsan); Oh, Seok (University of Ulsan); Hwang, Changho (Ulsan University Hospital); Koo, Kyoin (University of Ulsan)
- 17:15-19:00 FrPoS-28.29  
**Multivariate Analysis Method using Cross Recurrence Plot and Convolutional Neural Network**  
Kobayashi, Yuya\* (University of Tokyo); Gu, Feng (University of Tokyo); Kotani, Kiyoshi (University of Tokyo); Jimbo, Yasuhiko (University of Tokyo)
- 17:15-19:00 FrPoS-28.30  
**On the Efficiency of SVD based T-Wave Alternans Detection**  
Sato, Shunsuke (Hosei University); Nakamura, Sho (Hosei University); Koizumi, Anna (Hosei University); Kamimoto, Michiaki (Hosei University); Yana, Kazuo\* (Hosei University); Ono, Takuya (Nippon Medical School)
- 17:15-19:00 FrPoS-28.31  
**Real-Time Control of an Assistive Robotic Arm using a Wireless Finger Motion Sensor**  
Gosselin, Benoit\* (Laval University); Gosselin, Clément (Université Laval); Cheikh Latyr, Fall (Université Laval); Campeau-Lecours, Alexandre (Université Laval); Robitaille, Tristan (Collégial International Sainte-Anne)
- 17:15-19:00 FrPoS-28.32  
**Assistive Scanning Brace for Improved 3D Tomographic Ultrasound Neck Scans**  
Gomes Ataide, Elmer Jeto\* (Otto-von-Guericke Universität); Ziegler, Jens (Otto-von-Guericke Universität); Kalmar, Marco (Otto-von-Guericke Universität); Boese, Axel (Dept. of Medical Engineering, Otto-von-Guericke-University of Magdeburg, Germany); Friebe, Michael (Otto-von-Guericke-University)
- 17:15-19:00 FrPoS-28.33  
**Data Augmentations Role in Apnea Detection using Deep Learning**  
Olsen, Mads\* (Technical Univ. of Denmark); Jennum, Poul (Univ. of Copenhagen, Demnar); Mignot, Emmanuel (Stanford Univ.); Sorensen, Helge B D (Technical Univ. of Denmark)
- 17:15-19:00 FrPoS-28.34  
**A Method for the Reduction of Variability in Drug Delivery**  
Carpenter III, George W.\* (Louisiana Tech University); Myers, Holly (Louisiana Tech University); Sherer, Eric A. (Louisiana Tech University); Evans, Katie (Louisiana Tech University); O'Neal, D. Patrick (Louisiana Tech University)
- 17:15-19:00 FrPoS-28.35  
**Analysis of Gait Characteristics with Various Levels of Weight Bearing using Wearable Motion Measurement Device**  
Araki, Keisuke\* (Doshisha Univ.); Tsujiuchi, Nobutaka (Doshisha Univ.); Ito, Akihito (Doshisha Univ.); Ohira, Yoshinobu (Doshisha Univ.); Kamibayashi, Kiyotaka (Doshisha Univ.)
- 17:15-19:00 FrPoS-28.36  
**Multi-Wavelength Laser Speckle Contrast Imaging System based on Wavelength Tunable Laser**  
Kim, Jeong Won (Pusan National University); Jang, Hansol (Pusan National University); Kim, Gyeong Hun (Pusan National University); Kim, Chang-Seok\* (Pusan National University)

- 17:15-19:00 FrPoS-28.37  
**Numerical Study of Blood Flows Influenced by a Thick-Strut Stent Implanted in Left Coronary Artery Bifurcation Area**  
 Oneyama, Fuyuki (*Tokyo Univ. of Science*); Tsukahara, Takahiro\* (*Tokyo Univ. of Science*); Yamada, Yuya (*Tokyo Univ. of Science*); Yamamoto, Ken (*Tokyo Univ. of Science*); Motosuke, Masahiro (*Tokyo Univ. of Science*); Tanaka, Kentaro (*Univ. Hospitals*); Tahara, Satoko (*New Tokyo Hospital*); Kwamoto, Hiroyoshi (*New Tokyo Hospital*); Nakamura, Sunao (*New Tokyo Hospital*); Fujino, Yusuke (*New Tokyo Hospital*)
- 17:15-19:00 FrPoS-28.38  
**Pneumatic Soft Actuator with Diamond Shaped Pattern for Range of Motion Exercises Device**  
 Aoyama, Ruito (*Osaka Institute of Technology*); Taniguchi, Hironari\* (*Osaka Institute of Technology*)
- 17:15-19:00 FrPoS-28.39  
**Relationship between Periodicity of Limb Movements during Sleep and Sympathetic Overactivity**  
 Kwon, Hyunbin (*Seoul National Univ.*); Yoon, Heenam (*Seoul National Univ.*); Choi, Sang Ho (*Seoul National Univ.*); Choi, Jaewon (*Seoul National Univ. Hospital*); Lee, Yujin (*Seoul National Univ. Hospital*); Park, Kwang S.\* (*Seoul National Univ.*)
- 17:15-19:00 FrPoS-28.40  
**Wearable Training Oral Retainer for Assisting in Long Term Jaw Clenching Reduction**  
 Marjanovic, Nicholas (*University of Illinois at Chicago*); Esmailbeigi, Hananeh\* (*University of Illinois at Chicago (UIC)*)
- 17:15-19:00 FrPoS-28.41  
**Vibroacoustographic Imaging of Heterogeneous Phantoms for Delineation of Tissue Boundaries**  
 Namiri, Nikan (*Dept. of Bioengineering, UCLA*); Pellionisz, Peter\* (*UCLA David Geffen School of Medicine*); Hu, Yong (*UCLA*); Suematsu, Gregory (*University of California Los Angeles*); Taylor, Zachary (*UCLA*); St. John, Maie (*UCLA Head and Neck Surgery*); Grundfest, Warren S. (*UCLA*)
- 17:15-19:00 FrPoS-28.42  
**Wearable ECG Monitoring System with Garment-Type Sensor for Real-Time Epileptic Seizure Prediction**  
 Miyajima, Miho\* (*Tokyo Medical and Dental University*); Yamakawa, Toshitaka (*Kumamoto University*); Fujiwara, Koichi (*Kyoto University*); Sakane, Fumiya (*Kyoto University*); Inaji, Motoki (*Tokyo Medical and Dental University*); Osoegawa, Hiromichi (*Mitsufuji Corp.*); Buniu, Michiyoshi (*Mitsufuji Corp.*); Kano, Manabu (*Kyoto University*); Maehara, Taketoshi (*Tokyo Medical and Dental University*)
- 17:15-19:00 FrPoS-28.43  
**Transmission Characteristics Enhancement of Magnetically-Coupled Body Area Network using Parasitic Wearable Coil**  
 Koshiji, Kohji (*Tokyo University of Science*); Koshiji, Fukuro\* (*Tokyo Polytechnic University*); Fujita, Yusuke (*Tokyo Polytechnic University*); Muramatsu, Dairoku (*Tokyo University of Science*); Yamamoto, Takahiko (*Tokyo University of Science*)
- 17:15-19:00 FrPoS-28.44  
**Evaluation Gain Readjustment Function to Reduce Measurement Errors in Long-Term Measurement**  
 Shoji, Kento\* (*Kumamoto University*); Yamakawa, Toshitaka (*Kumamoto University*)
- 17:15-19:00 FrPoS-28.45  
**Image Super-Resolution and Style Transfer for Optic-Disc Photogram using Super-Resolution Generative Adversarial Network**  
 Sun, Sukkyu (*Seoul National Univ.*); Kim, Hee Chan\* (*Seoul National Univ.*); Ha, Ahnul (*Seoul National Univ. College of Medicine*); Kim, Young Kook (*Seoul National Univ. College of Medicine*); Park, Ki Ho (*Seoul National Univ. School of Medicine*)
- 17:15-19:00 FrPoS-28.46  
**Oxygen Saturation Mapping of Microcirculation using Sidestream Dark-Field Imaging**  
 Hashimoto, Ryohei\* (*Chiba University*); Kurata, Tomohiro (*Takano Co., Ltd.*); Sekine, Masashi (*Chiba University*); Nakano, Kazuya (*Chiba University*); Ohnishi, Takashi (*Chiba University*); Haneishi, Hideaki (*Chiba University*)
- 17:15-19:00 FrPoS-28.47  
**Design of REPA: A Software Tool for Custom Real Time Physiological Analysis**  
 Gonzalez, Mendoza\* (*CINVESTAV, Mexico*); Perez-Sanpablo, Alberto-Isaac (*CINVESTAV/INR*)
- 17:15-19:00 FrPoS-28.48  
**Measurement of Surgical Skills by Means of Surface EMG**  
 Inoue, Takafumi\* (*Osaka Electro-Communication University*); Nakamura, Hideo (*Osaka Electro-Communication University*)
- 17:15-19:00 FrPoS-28.49  
**Morpho-Molecular Plasticity of Epithelial Mesenchymal Transition**  
 Mandal, Mousumi\* (*IIT Kharagpur*); Chatterjee, Jyotirmoy (*Indian Institute of Technology Kharagpur*)
- 17:15-19:00 FrPoS-28.50  
**Electrical Stimulation Study of Mouse Retinal Tissues using Microelectrode Array for Neural Measurement**  
 Yoo, Hyun Ji\* (*Ewha Womans University*); Ha, Yoonhee (*Ewha Womans University*); Jeong, Hee Soo (*Ewha Womans University*); Hwang, Seoyoung (*Ewha womans University*); Jun, Sang Beom (*Ewha Womans University*)
- FrPoS-29: 17:15-19:00 Exhibit Hall 2  
**Friday 1 Page Research Poster Paper (V) (Poster Session)**
- 17:15-19:00 FrPoS-29.1  
**Improve Linewidth of Active Mode Locking Wavelength-Swept Laser with Optical Modulation**  
 Park, Sejin (*Pusan National Univ.*); Kim, Gyeong Hun (*Pusan National Univ.*); Kim, Chang-Seok\* (*Pusan National Univ.*)
- 17:15-19:00 FrPoS-29.2  
**Analysis of Neuron-Astrocyte Co-Culture from Rat Hippocampus**  
 Hwang, Seoyoung\* (*Ewha womans University*); Lee, Yena (*Ewha Womans University*); Jun, Sang Beom (*Ewha Womans University*)
- 17:15-19:00 FrPoS-29.3  
**An Advice Feedback System based on Bio-Estimate Emotion at Sending SNS**  
 Feng, Chen\* (*Shibaura Institute of Technology*); Liu, Yifan (*Shibaura Institute of Technology*); Sugaya, Midori (*Shibaura Institute of Technology*)
- 17:15-19:00 FrPoS-29.4  
**Supervised Layer Segmentation in Optical Coherence Tomography Images of Abnormal Skin**  
 Srivastava, Ruchir\* (*Institute for Infocomm Research*); Yow, Ai Ping (*Institute for Infocomm Research*); Wong, Damon (*Institute for Infocomm Research*); Tey, Hongliang (*National Skin Center, Singapore*)
- 17:15-19:00 FrPoS-29.5  
**Adaptive Electrode Alignment towards Robust Myoelectric Control**  
 Wu, Le (*University of Science and Technology of China*); Zhang, Xu\* (*University of Science and Technology of China*); Chen, Xiang (*University of Science & Technology of China*)
- 17:15-19:00 FrPoS-29.6  
**Study on Polar Codes for Wireless Body Area Network**  
 Osada, Kenshiro\* (*Meiji Univ.*); Ikegami, Tetsushi (*Meiji Univ.*)



- 17:15-19:00 FrPoS-29.7  
**Characterization of Mitochondrial Transport using Probabilistic Feature-Based Tracking**  
Serrano, Claudia (*Universitat Politècnica de Catalunya-BarcelonaTech*); Vallmitjana, Alex (*University of California Irvine*); Civera-Tregon, Azahara (*Neurogenetics and Molecular Medicine, Sant Joan de Deu Research Foundation, Barcelona*); Hoenicka, Janet (*Instituto de Recerca Hospital Sant Joan de Deu, Barcelona*); Palau, Francesc (*Neurogenetics and Molecular Medicine, Sant Joan de Deu Research Foundation, Barcelona*); Benitez, Raul\* (*Universitat Politècnica de Catalunya*)
- 17:15-19:00 FrPoS-29.8  
**Addition-Only Vein Recognition Algorithm for Ultrasonic Vein-Pattern Sensor**  
Kim, Nam-Kyu (*Hannam University*); Choi, Sung-Phyo (*Hannam University*); Um, Ji-Yong\* (*Hannam University*)
- 17:15-19:00 FrPoS-29.9  
**Development of Magnetic Nondirectional Capsule Type Implantable Element for Hyperthermia Therapy**  
Yokoshita, Yuta\* (*Tohoku Gakuin Univ.*); Kato, Yuta (*Tohoku Gakuin Univ.*); Abe, Takuma (*Tohoku Gakuin Univ.*); Miyahara, Satoshi (*Tohoku Gakuin Univ.*); Sato, Fumihiko (*Tohoku Gakuin Univ.*); Ishikawa, Kazumi (*Tohoku Gakuin Univ.*)
- 17:15-19:00 FrPoS-29.10  
**Finite Element Analysis on Expansion of Cutting Balloon in Calcified Coronary Artery in Comparison with Conventional Balloon**  
Zhu, Xiaodong (*Waseda Univ.*); Umezu, Mitsuo (*Waseda Univ. Graduate School*); Iwasaki, Kiyotaka\* (*Waseda Univ.*)
- 17:15-19:00 FrPoS-29.11  
**Towards Optical Measurement of Blood Alcohol Concentration with Higher Accuracy: Comparison of Signal-to-Noise Ratio for Finger Photo-Plethysmogram with and without Electromagnetic Shielding**  
Kabashima, Shogo (*Fukuoka Institute of Technology*); Harada, Ippei (*Fukuoka Institute of Technology*); Kusaba, Shihori (*Fukuoka Institute of Technology*); Fukumoto, Yuto (*Fukuoka Institute of Technology*); Lee, Jiyoung (*Fukuoka Institute of Technology*); Shibata, Masahiro (*Shibaura Institute of Technology*); Yamakoshi, Takehiro\* (*Fukuoka Institute of Technology*)
- 17:15-19:00 FrPoS-29.12  
**Design of a Paradigm to Elicit Gait-Related Symptoms of Parkinson's Disease: A Case Study**  
Naghavi, Nader\* (*University of Tennessee, Knoxville*); Wade, Eric (*University of Tennessee*)
- 17:15-19:00 FrPoS-29.13  
**Particle Filter-Based Method for Estimation of a Vein Area from Cross-Sectional Ultrasound Image Sequence of an Arm**  
Noguchi, Hiroshi\* (*University of Tokyo*); Noyori, Shuhei (*University of Tokyo*); Takahashi, Toshiaki (*University of Tokyo*); Sanada, Hiromi (*University of Tokyo*); Mori, Taketoshi (*University of Tokyo*)
- 17:15-19:00 FrPoS-29.14  
**Changes of Brain Activity during Ventricular Fibrillation**  
Kim, Heejin (*Seoul National University*); Kim, Hee Chan\* (*Seoul National University*)
- 17:15-19:00 FrPoS-29.15  
**Photoacoustic Strain Imaging on Human in Vivo Wrist**  
Sumi, Chikayoshi\* (*Sophia University*)
- 17:15-19:00 FrPoS-29.16  
**Automated Hidden Peak Extraction in Raman Spectra for Fibrotic Skin Tissues**  
Muley, Saylee (*Indian Institute of Technology Kharagpur*); Ghosh, Biswajoy\* (*IIT Kharagpur*); Chatterjee, Jyotirmoy (*Indian Institute of Technology Kharagpur*)
- 17:15-19:00 FrPoS-29.17  
**Attenuation Normalization in Tissue Optical Coherence Tomography**  
Ghosh, Biswajoy\* (*IIT Kharagpur*); Muley, Saylee (*Indian Institute of Technology Kharagpur*); Chatterjee, Jyotirmoy (*Indian Institute of Technology Kharagpur*)
- 17:15-19:00 FrPoS-29.18  
**Transformations of Noncontact Electrocardiogram Waveform and Body Proximity Signals in Nocturnal Measurements during Sleep**  
Takano, Mayuko\* (*Tokyo Denki University*); Ueno, Akinori (*Tokyo Denki University*)
- 17:15-19:00 FrPoS-29.19  
**Wireless Transcutaneous Powering of Ensembles of Chipscale Sensors at Microwaves Frequencies**  
Lee, Jihun (*Brown University*); Laiwalla, Farah (*Brown University*); Leung, Vincent (*Qualcomm Institute*); Jeong, Joonsoo (*Brown University*); Kilfoyle, Chester (*Brown University*); Larson, Lawrence (*Brown University*); Nurmikko, Arto\* (*Brown University*)
- 17:15-19:00 FrPoS-29.20  
**Wearable Noninvasive Tissue Oxygen Metabolism Sensing System**  
Lee, Seung Yup\* (*Georgia Institute of Technology/Emory University*); Zheng, Corey (*Georgia Institute of Technology*); Buckley, Erin (*Georgia Institute of Technology/Emory University*)
- 17:15-19:00 FrPoS-29.21  
**An Investigation of Accuracy of Instantaneous Heart Rate Measurement by Wrist-Worn Fitness Tracking Devices**  
Turki, Ahmad Fawzi (*University of Texas at Arlington/ King AbdulAziz University*); Jani, Mahrshi (*University of Texas at Arlington*); Basava, Vijay Sunil (*University of Texas*); Soltan zadi, Armin (*University of Texas at Arlington*); Dakhave, Supriya (*University of Texas at Arlington*); Ding, Kan (*The University of Texas Southwestern Medical Center*); Zhang, Rong (*University of Texas Southwestern Medical Center at Dallas*); Behbehani, Khosrow\* (*University of Texas at Arlington*)
- 17:15-19:00 FrPoS-29.22  
**A Preliminary Analysis on Dependence of the Tidal Volume with Split in Second Heart Sounds**  
Burgoni, Cameron (*San Diego State Univ.*); Horondi, Alex (*San Diego State Univ.*); Power, Brenden (*San Diego State Univ.*); Rath, Sasmita (*San Diego State Univ.*); Keeranagi, Veena (*San Diego State Univ.*); Bailey, Alex Cameron (*San Diego State Univ.*); Buono, Michael (*San Diego State Univ.*); Toreyin, Hakan\* (*San Diego State Univ.*)
- 17:15-19:00 FrPoS-29.23  
**Design and Test of a Non-Enzymatic Glucose Sensor for Continuous Glucose Monitoring Device**  
Lee, Ji Soo (*SNU*); Boo, Hankil (*UXN Co., Ltd.*); Chang, Rae Kyu (*UXN Co., Ltd.*); Lee, Joungmin (*UXN Co., Ltd.*); Kim, Hee Chan\* (*Seoul National University*)
- 17:15-19:00 FrPoS-29.24  
**Development of Microphone Preamplifier for Recording Hearts Sound of Esophageal Stethoscope**  
Jung, Sunhyung (*Daelim Univ.*); Kang, Yewon (*Daelim Univ.*); Lee, Deuk Yong (*Daelim Univ.*); Shin, Hangsik (*Chonnam National Univ.*); Yun, Yonghyeon\* (*Daelim Univ.*)
- 17:15-19:00 FrPoS-29.25  
**Windowed Wavelet Filter: A New Approach to Identify Event-Related Potentials in Disorders of Consciousness**  
Toppi, Jlenia (*University of Rome "Sapienza"*); Mattia, Donatella (*Fondazione Santa Lucia IRCCS*); Cincotti, Febo (*Sapienza University of Rome*); Formisano, Rita (*IRCCS Fondazione Santa Lucia, Rome, Italy*); Astolfi, Laura\* (*University of Rome Sapienza*)

17:15-19:00	FrPoS-29.26	<b>Improving the Reliability of R-Wave Detection by a Microcontroller-Operated Wearable RRI Telemeter</b> Chihara, Yuma* ( <i>Kumamoto University</i> ); Shoji, Kento ( <i>Kumamoto University</i> ); Yamakawa, Toshitaka ( <i>Kumamoto University</i> )	17:15-19:00	FrPoS-29.36	<b>Effect of Dual Vibration Stimulation to Biceps Brachii on Elbow Joint Extension Motion Change for Upper-Limb Perception-Assist</b> Honda, Koki* ( <i>Kyushu Univ.</i> ); Kiguchi, Kazuo ( <i>Kyushu Univ.</i> )
17:15-19:00	FrPoS-29.27	<b>A Feasibility Study on the Evaluation of Stress Level by Non-Contact Measurement using Video Images</b> Ikarashi, Akira* ( <i>Aino Univ.</i> ); Hayashi, Takuto ( <i>Aino Univ.</i> )	17:15-19:00	FrPoS-29.37	<b>Silk Hydrogel Microneedle for Glucose Monitoring</b> Kim, Hyojung ( <i>Korea Advanced Institute of Science and Technology</i> ); Seo, Ji-Won ( <i>Korea Advanced Institute of Science and Technology</i> ); Kim, Mi Kyung ( <i>Korea Advanced Institute of Science and Technology (KAIST)</i> ); Lee, Hyunjoo Jenny* ( <i>Korea Advanced Institute of Science and Technology (KAIST)</i> )
17:15-19:00	FrPoS-29.28	<b>Investigation of Arterial Property Changes based on Blood Pressure Waveform and Photoplethysmogram</b> Han, Sangjin ( <i>Chonnam National University</i> ); Shin, Hangsik* ( <i>Chonnam National University</i> )	17:15-19:00	FrPoS-29.38	<b>Development of a 16bit 8-Channel Functional Near-Infrared Spectroscopy based Neuroimaging System</b> Lee, Seungchan ( <i>Gwangju Institute of Science and Technology</i> ); Kumar, Anil ( <i>Gwangju Institute of Science and Technology</i> ); Lee, Heung-No* ( <i>Gwangju Institute of Science and Technology (GIST)</i> )
17:15-19:00	FrPoS-29.29	<b>Design of Blending Algorithm for Rate Adaptive Pace based on Dual Sensors</b> Myoung, Hyoun Seok ( <i>Yonsei University</i> ); Lee, Kyoung Joung* ( <i>Yonsei University</i> )	17:15-19:00	FrPoS-29.39	<b>Piezoelectric Biosensor for Blood Pressure</b> Antonio, Mark* ( <i>University of Hawaii at Manoa</i> ); Graves, Toni ( <i>University of Hawaii at Manoa</i> ); Padasdao, Bryson ( <i>University of Hawaii at Manoa</i> ); Boric-Lubecke, Olga ( <i>University of Hawaii at Manoa</i> ); Ben, Bonnie Louis ( <i>University of Hawaii at Manoa</i> )
17:15-19:00	FrPoS-29.30	<b>X-Limb: A Soft Prosthetic Hand for Upper-Limb Amputees</b> Mohammadi, Alireza* ( <i>University of Melbourne</i> ); Lavranos, Jim ( <i>Caulfield Hospital</i> ); Choong, Peter ( <i>University of Melbourne</i> ); Oetomo, Denny ( <i>University of Melbourne</i> )	<b>FrPoS-30: 17:15-19:00 Exhibit Hall 2 Friday 1 Page Research Poster Paper (I) (Poster Session)</b>		
17:15-19:00	FrPoS-29.31	<b>Quantitative Analysis of Arthroscopic Operation in Elbow Arthroscopy</b> Otsuka, Syuto ( <i>Tokyo University of Science</i> ); Yamamoto, Michiro ( <i>Nagoya University Hospital</i> ); Oyama, Shintato ( <i>Nagoya University Hospital</i> ); Hirata, Hitoshi ( <i>Nagoya University Hospital</i> ); Mizoguchi, Hiroshi ( <i>Tokyo University of Science</i> ); Yokota, Hideo* ( <i>RIKEN Center for Advanced Photonics</i> )	17:15-19:00	FrPoS-30.1	<b>Portable Ultrasound Device for Real-Time Intra-Oral Imaging</b> Culjat, Martin ( <i>Dthera Sciences</i> ); Johnson, Eric ( <i>Farus, LLC</i> ); Mierzwa, Andrzej ( <i>Farus, LLC</i> ); Nguyen, Kristen* ( <i>Farus, LLC</i> ); Singh, Rahul ( <i>Farus, LLC</i> ); White, Shane ( <i>UCLA</i> )
17:15-19:00	FrPoS-29.32	<b>Development of a Self-Administered Epley Maneuver Guiding System based on Head Motion Analysis</b> Kwon, Chiheon ( <i>Seoul National University</i> ); Ku, Yunseo ( <i>Chungnam National University College of Medicine</i> ); Ahn, Joong Woo ( <i>Seoul National University</i> ); Kim, Do Youn ( <i>Interdisciplinary Program, Bioengineering, Graduate School, Seoul National University</i> ); Suh, Myung-Whan ( <i>Seoul National University Hospital</i> ); Kim, Hee Chan* ( <i>Seoul National University</i> )	17:15-19:00	FrPoS-30.2	<b>Cardiovascular Simulator with Simplified Arterial Model for Pulse Wave Study</b> Jang, Min* ( <i>Sangji University East-West Medical Engineering</i> )
17:15-19:00	FrPoS-29.33	<b>Does Normalization Affect Phase Space Analysis on Human Movement?</b> Rodrigues, Carlos M. B.* ( <i>INESCTEC - Technology &amp; Science Associate Lab</i> ); Correia, Miguel ( <i>Universidade do Porto, Faculdade de Engenharia</i> ); Abrantes, João M. C. S. ( <i>MovLab - ULHT</i> ); Rodrigues, Marco Aurélio Benedetti ( <i>Federal Univ. of Pernambuco</i> ); Nadal, Jurandir ( <i>Federal Univ. of Rio de Janeiro</i> )	17:15-19:00	FrPoS-30.3	<b>A Baseline Alignment Evaluation Algorithm in Conjunction with Detrended Fluctuation Analysis</b> Park, Jong-Rul ( <i>Sungkyunkwan University</i> ); Jae Chern, Yoo* ( <i>Sungkyunkwan University</i> )
17:15-19:00	FrPoS-29.34	<b>Arrhythmia Classification using LSTM</b> Lee, JeeEun ( <i>Yonsei University</i> ); Yoo, Sun K.* ( <i>Yonsei University Health System</i> ); Jang, Wonseuk ( <i>Yonsei University</i> )	17:15-19:00	FrPoS-30.4	<b>Heart Beat Waveform Variation Evaluation from Recurrence Quantification Threshold Plot</b> Park, Jong-Rul ( <i>Sungkyunkwan University</i> ); Jae Chern, Yoo* ( <i>Sungkyunkwan University</i> )
17:15-19:00	FrPoS-29.35	<b>Ambulatory Assessment of Motor Weakness by Stroke: Forearm Rolling Test with Wearable Devices</b> Shin, Yeongcheol ( <i>Yonsei Univ. College of Medicine</i> ); Nam, Hyosuk ( <i>Dept. of Neurology, Yonsei Univ. College of Medicine</i> ); Chang, Hyuk-Jae ( <i>Yonsei Univ. College of Medicine</i> ); Rhee, Yu Mie ( <i>Yonsei Univ.</i> ); Park, Eunjeong* ( <i>Cardiovascular Research Institute, Yonsei Univ. College of Medicine</i> )	17:15-19:00	FrPoS-30.5	<b>Mechanisms of Airflow Recovery in Obstructive Sleep Apnea</b> Gell, Laura* ( <i>Flinders University</i> ); Catcheside, Peter ( <i>Flinders University</i> ); Reynolds, Karen ( <i>Flinders University Medical Device Research Institute</i> )
			17:15-19:00	FrPoS-30.6	<b>Soft Robotics Technologies to Implement Human Motor Control Lessons in Work-Oriented Prosthetics</b> Catalano, Manuel Giuseppe* ( <i>Fondazione Istituto Italiano di Tecnologia</i> ); Cristina, Piazza ( <i>Centro di Ricerca E. Piaggio - Università di Pisa</i> ); Godfrey, Sasha Blue ( <i>Istituto Italiano di Tecnologia</i> ); Grioli, Giorgio ( <i>Fondazione Istituto Italiano di Tecnologia</i> ); Bianchi, Matteo ( <i>University of Pisa</i> ); Zhao, Kristin ( <i>Mayo Clinic</i> ); Bicchi, Antonio ( <i>University of Pisa</i> )

- 17:15-19:00 FrPoS-30.7  
**Classification of ECG Beat using the Entropy of Ordinal Patterns**  
Bidiás à Mougoufan, Bertin (*Université de Yaoundé I*); Tchoumbiap Fohom, Daniele Raissa (*University of Yaounde I*); Eyebe Fouda, Jean Sire Armand (*Université de Yaounde I*); Tchuenete, Maurice (*Université de Yaounde I*); Korn, Martin (*Université de Yaounde I*); Jacquir, Sabir\* (*Laboratoire LE2I UMR CNRS 6306, Université de Bourgogne*)
- 17:15-19:00 FrPoS-30.8  
**Electronic Skin using a Liquid Metal Droplet as a Sensible Electrode for Wearable Electronics**  
Kim, Minsung (*Gachon Univ.*); Seo, Soonmin\* (*Gachon Univ.*)
- 17:15-19:00 FrPoS-30.9  
**Load Analysis of Omega Plates for Pelvic Fracture Fixation**  
Dzupa, Valer\* (*3rd Faculty of Medicine, Charles University, and University Hospital Kralovske Vinohrady*); Horak, Zdenek (*College of Polytechnics Jihlava*); Sram, Jaroslav (*Traumatology and Orthopaedics Centre, Liberec Hospital*); Krbec, Martin (*Dept. of Orthopaedics and Traumatology, 3rd Faculty of Medicine, Charles University, and University Hospital Kralovske Vno*)
- 17:15-19:00 FrPoS-30.10  
**Numerical Simulation of Plate Loading for Symphyseal Fracture Fixation**  
Baca, Vaclav\* (*College of Polytechnics Jihlava*); Sram, Jaroslav (*Traumatology and Orthopaedics Centre, Liberec Hospital*); Dzupa, Valer (*3rd Faculty of Medicine, Charles University, and University Hospital Kralovske Vinohrady*); Krbec, Martin (*Dept. of Orthopaedics and Traumatology, 3rd Faculty of Medicine, Charles University, and University Hospital Kralovske Vno*)
- 17:15-19:00 FrPoS-30.11  
**Using Smart Cities for Early MCI and Frailty Detection**  
Abril-Jimenez, Patricia\* (*Universidad Politécnica de Madrid*); de los Ríos, Silvia (*Universidad Politécnica de Madrid*); Rojo, Javier (*Technical University of Madrid*); Páramo, Miguel (*Universidad Politécnica de Madrid*); Arredondo, María Teresa (*Universidad Politécnica de Madrid*); Guillen, Sergio (*MYSPIERA S.L.*)
- 17:15-19:00 FrPoS-30.12  
**Anatomically Accurate Modelling of Hepatic Perfusion in Human Liver**  
Ma, Renfei\* (*University of Auckland*); Hunter, Peter (*University of Auckland*); Ho, Harvey (*University of Auckland*); Safaei, Soroush (*University of Auckland*)
- 17:15-19:00 FrPoS-30.13  
**Electrodermal Activity Sensing Device**  
Lam, Lawrence\* (*University of Washington Bothell*); Szyplula, Austen (*University of Washington Bothell*)
- 17:15-19:00 FrPoS-30.14  
**Development of a Cardiovascular Simulator for the Study of Renal Artery Stenosis**  
Lee, Min-Woo (*Sangji University Oriental BioMedical Engineering*); Lee, Ju-Yeon (*Institute of Applied Medical Engineering, Helmholtz Institute, RWTH Aachen University*); Shin, Sang-Hoon\* (*Sangji University, Oriental BioMedical Engineering*)
- 17:15-19:00 FrPoS-30.15  
**Heart Rate Variability based Machine Learning Models for Risk Prediction of Septic Patients in the Emergency Dept.**  
Chiew, Calvin (*Singapore General Hospital*); Liu, Nan\* (*National University of Singapore*); Tagami, Takashi (*Nippon Medical School Tama Nagayama Hospital*); Wong, Ting Hway (*Singapore General Hospital*); Koh, Zhi Xiong (*Singapore General Hospital*); Ong, Marcus Eng Hock (*Singapore General Hospital*)
- 17:15-19:00 FrPoS-30.16  
**A Predictor for Severity of OSA via Auditory-Coupled Electroencephalography**  
Winkler, Jeff\* (*University of Manitoba*); Duke, Tyler (*University of Manitoba*); Ng, Marcus (*University of Manitoba*); Moussavi, Zahra (*University of Manitoba*)
- 17:15-19:00 FrPoS-30.17  
**Estimation of Worker's Proficiency using EEG Data in Manufacturing Operations**  
Higashi, Yuichiro (*Omron Corp.*); Kotake, Yasuyo (*Omron Corp.*); Nakajima, Hiroshi (*Omron Corp.*); Yokota, Yusuke (*National Institute of Information and Communications Technology*); Naruse, Yasushi\* (*National Institute of Information and Communications Technology*)
- 17:15-19:00 FrPoS-30.18  
**Detection of Rhythmic Synchronized Double Neuronal Discharges**  
Martin del Campo Vera, Roberto\* (*Univ. of Southern California*); Jonckheere, Edmond (*Univ. of Southern California*)
- 17:15-19:00 FrPoS-30.19  
**Identifying Appropriate Dynamic Time Warping, DTW, Metrics to Evaluate the Quality of Vocoder Time-Stretched Speech Phrases**  
Tanaka, Mai (*University of Calgary, Electrical and Computer Engineering*); Smith, Michael\* (*University of Calgary*)
- 17:15-19:00 FrPoS-30.20  
**A Smart Intra-Gastric Balloon with the Functions for Monitoring Food Intake and Deflating the Balloon Noninvasively**  
Ohta, Hidetoshi\* (*Sapporo Orthopedics and Cardiovascular Hospital*)
- 17:15-19:00 FrPoS-30.21  
**Cableless Measurement for Heart Rate through Handgrip**  
Wang, Tianyi\* (*Osaka University*); Jeong, Hieyong (*Osaka University*); Guo, An (*Osaka University*); Ohno, Yuko (*Osaka University Graduate School of Medicine*)
- 17:15-19:00 FrPoS-30.22  
**EEG Artifact Attenuation with Artifact Subspace Reconstruction for Android**  
Blum, Sarah\* (*Carl von Ossietzky Universität Oldenburg*); Debener, Stefan (*University of Oldenburg*)
- 17:15-19:00 FrPoS-30.23  
**Robotic Tomographic System for Nuclear Imaging**  
Vera Tizatl, Pamela Patricia\* (*UPIITA-IPN*); Santos-Cuevas, Clara Leticia (*ININ*); Luviano Juárez, Alberto (*UPIITA*); Chairez Oria, Isaac (*UPIBI-IPN*)
- 17:15-19:00 FrPoS-30.24  
**Forceps Manipulator with Circular Telescopic Guiding Slider for Laparoscopic Surgery**  
Masatake, Arata\* (*Osaka Institute of Technology*); Han, SeungSeong (*Osaka Institute of Technology*); Kawai, Toshikazu (*Osaka Institute of Technology*); Nishikawa, Atsushi (*Shinshu Univ.*); Nishizawa, Yuji (*Dept. of Gastroenterological Surgery, Faculty of Medicine, Kagawa Univ.*); Nakamura, Tatsuo (*Kyoto Univ.*)
- 17:15-19:00 FrPoS-30.25  
**Multiple Object Separation using a Single Antenna Continuous Wave Doppler Radar with Quadrature Channel Architecture**  
Whitworth, Avon\* (*University of Hawaii*); Ishmael, Khaldoon (*University of Hawaii*); Yavari, Ehsan (*University of Hawaii at Manoa*); Boric-Lubecke, Olga (*University of Hawaii at Manoa*)

- 17:15-19:00 FrPoS-30.26  
**Hip Joint Adjustment Mechanism based on the Positions of Hip Joints for the Walking Assist Device**  
 Lee, Minhyung\* (*Samsung Advanced Institute and Technology*); Lee, Younbaek (*SAIT (Samsung Advanced Institute of Technology)*); Lee, Jongwon (*Samsung Electronics Co., Ltd.*); Choi, Byungjune (*Samsung Advanced Institute of Technology*); Roh, Se-gon (*Samsung Advanced Institute of Technology, Samsung Electronics Co., Ltd.*); Shim, Youngbo (*Samsung Advanced Institute of Technology*); Kim, Jeonghun (*SAIT (Samsung Advanced Institute of Technology)*)
- 17:15-19:00 FrPoS-30.27  
**WPW Syndrome Identification from QRS Projected in a Phase Space**  
 Mahamat, Hassan Adam\* (*Laboratoire LE2I UMB CNRS 6306, Université Bourgogne Franche-comté*); Jacquir, Sabir (*Laboratoire LE2I UMR CNRS 6306, Université de Bourgogne*); Khalil, Cliff (*University Hospital of Dijon*); Laurent, Gabriel (*LE2I UMR CNRS 5158, Université de Bourgogne, France*); Binczak, Stéphane (*Université de Bourgogne*)
- 17:15-19:00 FrPoS-30.28  
**Longitudinal Performance of an Epicortical Microelectrode Array in Evoking Visual Sensations**  
 Oswalt, Denise\* (*Arizona State University*); Datta, Proyag (*Louisiana State University*); Talbot, Neil (*Second Sight Medical Products*); Mirzadeh, Zaman (*Barrow Neurological Institute*); Greger, Bradley (*Arizona State University*)
- 17:15-19:00 FrPoS-30.29  
**Ternary Near-Infrared Spectroscopy BCI using Prefrontal Hemodynamic Changes Induced by Breath-Holding**  
 Shin, Jaeyoung (*Hanyang University*); Kwon, Jinuk (*Hanyang University*); Im, Chang-Hwan\* (*Hanyang University*)
- 17:15-19:00 FrPoS-30.30  
**Preliminary Study on the Cloud System with Non-Contact Uroflowmeter**  
 Kanayama, Yoshio (*NEC Solution Innovators, Ltd.*); Nakajima, Kazuki\* (*University of Toyama*)
- 17:15-19:00 FrPoS-30.31  
**Biometric Authentication based on Feature Extraction of Bioelectric Transfer Characteristics of Fingers**  
 Noh, Hyung Wook\* (*Electronics and Telecommunications Research Institute*); Sim, Joo Yong (*Electronics and Telecommunications Research Institute*); Chung, Kwang Hyo (*Electronics and Telecommunications Research Institute*); Kim, Bong Kyu (*Electronics and Telecommunications Research Institute*); Ahn, Chang-Geun (*Electronics and Telecommunications Research Institute*)
- 17:15-19:00 FrPoS-30.32  
**Development of a 79 GHz Millimeter-Wave Radar System for Remote Monitoring of Vital Sign**  
 Sun, Guanghao\* (*The University of Electro-Communications*); Nakamura, Takahiro (*Hitachi Ltd.*); Suzuki, Satoshi (*Kansai University*); Kobayashi, Mai (*The University of Electro-Communications*); Kirimoto, Tetsuo (*The University of Electro-Communications*)
- 17:15-19:00 FrPoS-30.33  
**Estimation of Motor Unit Territory during Elbow Flexion**  
 Akazawa, Jun\* (*Meiji University of Integrative Medicine*); Okuno, Ryuhei (*Setsuman University*)
- 17:15-19:00 FrPoS-30.34  
**Measurement of High-Frequency Leakage Current Flowing in the Human Body in an Air-Core Transcutaneous Energy Transmission System: Changing the Transmitting Resonance Capacitance**  
 Takahashi, Shunsuke\* (*Tokyo University of Science*); Shiba, Kenji (*Tokyo University of Science*)
- 17:15-19:00 FrPoS-30.35  
**Modeling of an Equivalent Circuit for Air-Core Transcutaneous Transformers Embedded in a Biological Tissue: Proposal of Circuit with Bioelectrical Impedance on the Primary Side**  
 Sunada, Shohei\* (*Tokyo University of Science*); Shiba, Kenji (*Tokyo University of Science*)
- 17:15-19:00 FrPoS-30.36  
**Waist Ring Transcutaneous Energy Transmission for Ventricular Assist Devices: Miniaturization of the Receiving Coil and Analysis of the Biological Effects Around the Transformer**  
 Kawaguchi, Daisuke\* (*University of Science*); Shiba, Kenji (*Tokyo University of Science*)
- 17:15-19:00 FrPoS-30.37  
**Improved Acoustic-Resolution Photoacoustic Microscopy using Minimum-Variance Beamformer**  
 Choi, Wonseok (*Pohang University of Science and Technology (POSTECH)*); Jeon, Seungwan (*Pohang University of Science and Technology*); Park, Eunyeong (*Pohang University of Science and Technology (POSTECH)*); Kim, Chulhong\* (*Pohang University of Science and Technology*)
- 17:15-19:00 FrPoS-30.38  
**Breathing Pattern Prediction for Tumor Motion Management in Radiation Therapy**  
 Tang, Xiaoli\* (*Memorial Sloan Kettering Cancer Center*); Ou, Yujie (*Columbia Univ.*); Saleh, Ziad (*Memorial Sloan Kettering Cancer Center*); Jeong, Jeho (*Memorial Sloan Kettering Cancer Center*); Cai, Weixing (*Memorial Sloan Kettering Cancer Center*); Song, Yulin (*Memorial Sloan-Kettering Cancer Ctr*); Zhang, Miao (*Memorial Sloan Kettering Cancer Center*); Chan, Maria (*Memorial Sloan-Kettering Cancer Center*); Shi, Chengyu (*Memorial Sloan Kettering Cancer Center*)
- 17:15-19:00 FrPoS-30.39  
**Enhancing Therapeutic Potential of MSC Spheroids with Perfusion**  
 Yasui, Osamu\* (*UC Davis*); Leach, Kent (*UC Davis*)
- 17:15-19:00 FrPoS-30.40  
**A Wireless Pacing System Miniaturized for Vascular Implantation**  
 Abiri, Parinaz\* (*Univ. of California Los Angeles*); Yousefi, Alireza (*Univ. of California Los Angeles*); Chou, Tzu-Chieh (*California Institute of Technology*); Tai, Yu-Chong (*California Institute of Technology*); Markovic, Dejan (*UCLA*); Hsiai, John T. K. (*USC*)
- 17:15-19:00 FrPoS-30.41  
**Digital Micromirror Device-Based Stereolithography of Three-Dimensional Vascular Constructs**  
 Wadnap, Soham (*Texas Tech University*); Zhang, Zhengyi (*Huazhong University of Science and Technology*); Xu, Changxue\* (*Texas Tech University*)
- 17:15-19:00 FrPoS-30.42  
**Nail Tip Sensor: Novel Wearable Sensor Attaching to Fingernail**  
 Ishii, Kohei\* (*National Institute of Technology, Kagawa College*); Hiraoka, Nobuaki (*National Institute of Technology, Kagawa College*)
- 17:15-19:00 FrPoS-30.43  
**EmotionNet: A Model for Emotion Classification based on EEG**  
 Wang, Qing (*Beijing University of Posts and Telecommunications*); Du, Li (*Beijing University of Posts and Telecommunications*); Zhao, Zhicheng\* (*Beijing University of Posts and Telecommunications*); Su, Fei (*Beijing University of Posts and Telecommunications*)
- 17:15-19:00 FrPoS-30.44  
**Evaluation of PWTT based Blood Pressure Fluctuation using Body Area Network**  
 Tanaka, Hirokazu\* (*Hiroshima City University*); Hatakeyama, Yasutaka (*Hiroshima City University*); Komori, Tatsuya (*Toshiba Development & Engineering Corp.*); Saho, Satomi (*Toshiba Development Engineering Corp.*); Shiode, Nobuo (*Dept. of Cardiology, Hiroshima City Hiroshima Citizen Hospital*)

17:15-19:00 FrPoS-30.45  
**A Miniature MSM Photosensor Chip for Hydrogen Peroxide and Biomolecular Sensing with Chemiluminescence**  
 Lin, Ching Chang\* (*National Chiao Tung Univ.*); Sun, Wen-Hsien (*Industrial Technology Research Institute*); Tsai, Tsung Tso (*National Chiao Tung Univ.*); Du, Bowei (*National Chiao Tung Univ.*)

17:15-19:00 FrPoS-30.46  
**Surgical Tool Manipulator with Gimbal-Mounted Parallel Linkage and Telescopic Sliders for Laparoscopic Surgery**  
 Han, SeungSeong\* (*Osaka Institute of Technology*); Kawai, Toshikazu (*Osaka Institute of Technology*); Nishikawa, Atsushi (*Shinshu University*); Nishizawa, Yuji (*Dept. of Gastroenterological Surgery, Faculty of Medicine, Kagawa University*); Nakamura, Tatsuo (*Kyoto University*)

17:15-19:00 FrPoS-30.47  
**Electrocardiogram Monitoring System using Electrodes Installed in Backrest Cushion Toward Practical Measurement of Heart Rate Variability in a Bath**  
 Motoi, Kosuke\* (*Shizuoka Institute of Science and Technology*); Yamakoshi, Yasuhiro (*Showa University School of Medicine*); Tanaka, Naoto (*Kanazawa University*); Sakai, Hiroaki (*Spinal Injuries Center*); Yamakoshi, Ken-ichi (*Kanazawa University*)

17:15-19:00 FrPoS-30.48  
**Recognition of Falls and ADLs using Decision Tree Method**  
 Lee, Chang Min (*Korea Institute of Science and Technology*); Park, Ji Su (*Korea Institute of Science and Technology*); Kim, Choong Hyun\* (*Korea Institute of Science and Technology*)

17:15-19:00 FrPoS-30.49  
**Waveform Analysis of Peripheral Pulse Wave in Healthy Controls and Patients with Sleep Apnea Hypopnea Syndrome**  
 Zeng, Ling-Zi (*Sun Yat-Sen Univ., Guangzhou, China*); Huang, Shao-Xiong (*School of Engineering, Sun Yat-Sen Univ.*); ZhouGuolin, Zhou (*School of Engineering, Sun Yat-sen Univ.*); Liao, Yuanyuan (*Sun Yat-Sen Univ., Guangzhou City, Guangdong Prov, China*); Luo, Yu-Xi\* (*Sun Yat-Sen Univ.*)

17:15-19:00 FrPoS-30.50  
**Detecting Missteps during Step Descent from EMG Signals using Bidirectional LSTM-Based Recurrent Neural Networks**  
 Katsumata, Koki\* (*University of Tokyo*); Ishikawa, Shunya (*University of Tokyo*); Hoshino, Takayuki (*University of Tokyo*)

FrPoS-31: 17:15-19:00 Exhibit Hall 2  
**Friday 1 Page Research Poster Paper (II) (Poster Session)**

17:15-19:00 FrPoS-31.1  
**A Preliminary Study on Personal Identification by Toilet Seat ECG**  
 Nakagawa, Arata (*University of Toyama*); Kanayama, Yoshio (*NEC Solution Innovators, Ltd.*); Kim, Juhyon (*University of Toyama*); Nakajima, Kazuki\* (*University of Toyama*)

17:15-19:00 FrPoS-31.2  
**Urine Absorption Evaluation of Dog's Posture Change in Smart Diaper Cover**  
 Yamamoto, Shintarou (*University of Toyama*); Kim, Juhyon (*University of Toyama*); Nakajima, Kazuki\* (*University of Toyama*)

17:15-19:00 FrPoS-31.3  
**Readily Available Varifocal Microscope Imaging System**  
 Wang, Lihui\* (*University of Tokyo*); Cui, jianjiang (*Northeastern University*); Tabata, Satoshi (*University of Tokyo*); Ishikawa, Masatoshi (*University of Tokyo*)

17:15-19:00 FrPoS-31.4  
**Daily Function Assistant: A Service for the Independent Living of Elderly Users with Cognitive Impairments**  
 Montalvá Colomer, Juan Bautista (*Universidad Politécnica de Madrid*); Páramo, Miguel (*Universidad Politécnica de Madrid*); Cabrera-Umpierrez, Maria Fernanda\* (*Universidad Politecnica de Madrid*); Arredondo, María Teresa (*Universidad Politécnica de Madrid*)

17:15-19:00 FrPoS-31.5  
**Synergistic Effects of Beta Tri-Calcium Phosphate and Porcine-Derived Decellularized Bone Extracellular Matrix in Three-Dimensional (3D)-Printed Polycaprolactone Scaffold on Bone Regeneration**  
 An, Sang-Hyun\* (*Daegu-Gyeongbuk Medical Innovation Foundation (DGMIF)*); Kim, Jun-Sik (*Lab Animal Center (LAC), Daegu-Gyeongbuk Medical Innovation Foundation (DGMIF)*); Ryu, Rae-Hyung (*Daegu-Gyeongbuk Medical Innovation Foundation (DGMIF)*); Kim, Jong Chul (*Daegu-Gyeongbuk Medical Innovation Foundation*)

17:15-19:00 FrPoS-31.6  
**Biomechanical Design of Adjustable Knee Joint for Walking Assist Device**  
 Choi, Byungjune\* (*Samsung Advanced Institute of Technology*); Lee, Younbaek (*SAIT (Samsung Advanced Institute of Technology)*); Lee, Jongwon (*Samsung Electronics Co., Ltd.*); Lee, Minhyung (*Samsung Advanced Institute and Technology*); Roh, Se-gon (*Samsung Advanced Institute of Technology, Samsung Electronics Co., Ltd.*); Kim, Yong-Jae (*KOREATECH (Korea University of Technology and Education)*); Shim, Youngbo (*Samsung Advanced Institute of Technology*)

17:15-19:00 FrPoS-31.7  
**Towards Detection of Feeling of the Like in Watching Pictures from Physiological Signals**  
 Horie, Ryota\* (*Shibaura Institute of Technology*); Hashimoto, Takuma (*Shibaura Institute of Technology*); Fukumoto, Kensaku (*Nikon Corp.*); Takashina, Tomomi (*Nikon Corp.*); Hirayama, Yoshikazu (*Nikon Corp.*); Ohkura, Michiko (*Shibaura Institute of Technology*)

17:15-19:00 FrPoS-31.8  
**Identification of Toe-Off and Heel Strike Events using a Single Inertial Measurement Unit**  
 Aqueveque, Pablo\* (*University of Concepcion*); Gomez, Britam (*University of Concepcion*); Ortega, Paulina (*University of Concepcion*); Pino, Esteban J (*Universidad de Concepcion*); Morales, Anibal (*Universidad de la Santisima Concepcion*); Saavedra, Francisco (*University of Concepcion*)

17:15-19:00 FrPoS-31.9  
**Portable Device for Thoracic Electrical Bio-Impedance Acquisition**  
 Gomez, Britam\* (*University of Concepcion*); Monsalve, Emyrna (*Universidad de Concepción*); Aqueveque, Pablo (*University of Concepcion*); Pino, Esteban J (*Universidad de Concepcion*)

17:15-19:00 FrPoS-31.10  
**Comparison of Breathing Effort Estimates in Pressure Support Mechanical Ventilation**  
 Karbing, Dan Stieper\* (*Aalborg University*); Spadaro, Savino (*Dept. of Morphology, Experimental Medicine and Surgery, Arcispedale Sant' Anna, University of Ferrara*); Dalla Corte, Francesca (*Dept. of Morphology, Experimental Medicine and Surgery, Arcispedale Sant' Anna, University of Ferrara*); Poulsen, Mathias Krogh (*Respiratory and Critical Care group at Dept. of Health Science and Technology, Aalborg University*); Rees, Stephen Edward (*Aalborg University*); Volta, Carlo Alberto (*Dept. of Morphology, Experimental Medicine and Surgery, Arcispedale Sant' Anna, University of Ferrara*)

- 17:15-19:00 FrPoS-31.11  
**Deep Neural Network-Based Breathing Classification Method for Wheeze Sounds**  
 Choe, Soyeon\* (*Yonsei Univ.*); Shin, Seung-chul (*Yonsei Univ.*); Won, Sul Mui (*College of Medicine, The Catholic Univ. of Korea*); Lee, Hye Jin (*Seoul Saint Mary's Hospital*); Kim, Kyunghoon (*Dept. of Pediatrics, College of Medicine, The Catholic Univ. of Korea, Seoul*); Yoon, Jong-seo (*College of Medicine, The Catholic Univ. of Korea*); Kang, Hong-Goo (*Yonsei Univ.*)
- 17:15-19:00 FrPoS-31.12  
**High-Speed Fluorescence Imaging System for Neural Activity Recording**  
 Kim, Raeyoung (*KAIST*); Kang, Hongki (*KAIST*); Nam, Yoonkey\* (*Korea Advanced Institute of Science and Technology*)
- 17:15-19:00 FrPoS-31.13  
**Quantitative Analysis and Evaluation of Skin Texture Aging using Smartphone Image**  
 Moon, Cho-I (*University of Soonchunhyang*); Hong, Gee Yun (*The Medical IT Engineering Dept., University of Soonchunhyang*); Lee, Jiwon (*The Medical IT Engineering Dept., University of Soonchunhyang*); Lee, Onseok\* (*Soonchunhyang University*)
- 17:15-19:00 FrPoS-31.14  
**A Preliminary Study on Excreta Identification using a Gas Sensor**  
 Iikuni, Takahiro (*Univ. of Toyama*); Inoue, Daisuke (*Univ. of Toyama*); Kanayama, Yoshio (*NEC Solution Innovators, Ltd.*); Kim, Juhyon (*Univ. of Toyama*); Nakajima, Kazuki\* (*Univ. of Toyama*)
- 17:15-19:00 FrPoS-31.15  
**A Robust Detection Method of Atrial Fibrillation**  
 Hu, Jing\* (*Guangzhou Shiyuan Electronic Technology Co., Ltd.*); Zhao, Wei (*Guangzhou Shiyuan Electronics Co., Ltd.*); Xu, Yanwu (*Guangzhou Shiyuan Ltd. Co*); Jia, Dongya (*CVTE, Guangdong Province, China*); Yan, Cong (*Guangzhou Shiyuan Electronics Co., Ltd.*); Wang, Hongmei (*Guangzhou Shiyuan Electronics Co., Ltd.*); You, Tianyuan (*Guangzhou Shiyuan Electronics Co., Ltd.*)
- 17:15-19:00 FrPoS-31.16  
**Activity Monitoring System using "Smart Clothing" for Rehabilitation**  
 Ogasawara, Takayuki\* (*NTT Device Innovation Center*); Mukaino, Masahiko (*Asahikawa Medical Univ.*); Matsuura, Hirotsuka (*Fujita Health Univ.*); Hirano, Satoshi (*Fujita Health Univ.*); Matsunaga, Kenichi (*NTT Device Innovation Center*); Oshima, Shoichi (*NTT Device Innovation Center*); Togo, Hiroyoshi (*NTT Device Innovation Center*); Nakashima, Hiroshi (*Materials Science Research Lab, NTT Basic Research Labs*); Saitoh, Eiichi (*Fujita Health Univ.*); Tsukada, Shingo (*NTT Basic Research Labs*)
- 17:15-19:00 FrPoS-31.17  
**Probabilistic Prediction of Neural Responses in Area MST during Smooth Pursuit using Tuning Functions**  
 Costalago Meruelo, Alicia\* (*Ludwig-Maximilians-Universität München*); Brostek, Lukas (*Ludwig-Maximilians-Universität München*); Mustari, Michael J. (*Washington National Primate Research Center*); Glasauer, Stefan (*Ludwig-Maximilians-Universität München*)
- 17:15-19:00 FrPoS-31.18  
**Development of Computer Vision Techniques to Inspect the Cytoskeletal Rearrangement during Stem Cell Aggregation in Time-Lapse Microscopy**  
 Jiang, Ching-Fen\* (*I-Shou University*); Hsu, Shan-hui (*Institute of Polymer Science and Engineering, National Taiwan University*); Tsai, Ming-Hong (*Dept. of BioMedical Engineering, I-Shou University*); Tseng, Ting-Chen (*Institute of Polymer Science and Engineering, National Taiwan University*)
- 17:15-19:00 FrPoS-31.19  
**Laryngeal Elevation Detection for Dysphagia Rehabilitation by Stretchable Strain Sensors**  
 Katsuno, Yuki\* (*Kobe University*); Nakamoto, Hiroyuki (*Kobe University*); Yamamoto, Akio (*Kobe University*); Umehara, Ken (*Kobe University*); Bessho, Yusuke (*Bando Chemical Industries, Ltd.*); Terada, Tsutomu (*Kobe University*); Kobayashi, Futoshi (*Kobe University*); Ishikawa, Akira (*Kobe University*)
- 17:15-19:00 FrPoS-31.20  
**Evaluation of Voided Volume by a Raised Toilet Seat Equipped with Non-Contact Thermal Sensors**  
 Ikegami, Shunsuke (*Univ. of Toyama*); Iikuni, Takahiro (*Univ. of Toyama*); Kanayama, Yoshio (*NEC Solution Innovators, Ltd.*); Kim, Juhyon (*Univ. of Toyama*); Nakajima, Kazuki\* (*Univ. of Toyama*)
- 17:15-19:00 FrPoS-31.21  
**Bone Suppression using Deep Convolutional Neural Network: Performance Evaluation using Pseudo X-Ray Images**  
 Matsubara, Naoki (*Fujita Health University*); Teramoto, Atsushi\* (*Fujita Health University*); Fujita, Hiroshi (*Gifu University*); Saito, Kuniaki (*Fujita Health University*)
- 17:15-19:00 FrPoS-31.22  
**Analysis of Cerebral Autoregulation in Postural Tachycardia Syndrome**  
 Song, Soohwa\* (*Gachon University Gil Medical Center*); Shin, Dong Hoon (*Gachon University Gil Medical Center*)
- 17:15-19:00 FrPoS-31.23  
**Multi-Modal Operation Input System for Shoulder Prosthesis**  
 Sekine, Masashi\* (*Chiba University*); Shimomura, Yoshihiro (*Chiba University*); Yu, Wenwei (*University of Chiba*)
- 17:15-19:00 FrPoS-31.24  
**RONDA: A Robotic Gym for Neurorehabilitation of Stroke Patients**  
 Giordetti, Guido (*Scuola Superiore S. Anna, The Biorobotics Institute*); Carpaneto, Jacopo (*Scuola Superiore Sant'Anna*); Crea, Simona (*Scuola Superiore Sant'Anna*); Baldoni, Andrea (*Scuola Superiore Sant'Anna*); Emilio, Trigili (*Scuola Superiore Sant'Anna*); Giorgia, Ercolini (*Scuola Superiore Sant'Anna*); Nicola, Mastronicola (*Scuola Superiore Sant'Anna*); Fabio, Stroppa (*Scuola Superiore Sant'Anna*); Dalise, Stefania (*Scuola Superiore Sant'Anna*); Bertolucci, Federica (*Neurorehabilitation Unit, AOUP, Pisa*); Spalletti, Cristina (*Consiglio Nazionale delle Ricerche, Istituto di Neuroscienze*); Panarese, Alessandro (*Scuola Superiore Sant'Anna di Pisa*); Posteraro, Federico (*Auxilium Vitae Hospital*); Caleo, Matteo (*Consiglio Nazionale delle Ricerche, Istituto di Neuroscienze*); Frisoli, Antonio (*SSSUP*); Carmelo, Chisari (*Neurorehabilitation Unit, AOUP, Pisa*); Vitiello, Nicola (*Scuola Superiore Sant'Anna*); Micera, Silvestro\* (*Scuola Superiore Sant'Anna*)
- 17:15-19:00 FrPoS-31.25  
**A Less-Biased Regression Method to Quantify Receptor Density from the Logan Graphical Analysis in Positron Emission Tomography**  
 Shigwedha, Paulus Kapundja\* (*Kogakuin University*); Kimura, Yuichi (*Faculty of Biology-Oriented Science and Technology, Kinki University*); Fukuoka, Yutaka (*Kogakuin University*)
- 17:15-19:00 FrPoS-31.26  
**Studying Protein Adsorption with Single Molecule Imaging**  
 Armstrong, Megan\* (*Columbia Univ.*); Hess, Henry (*Columbia Univ.*)
- 17:15-19:00 FrPoS-31.27  
**The Exercise Promotion using Sound Feedback Wearable Devices**  
 Asatomi, Fumiya\* (*Ritsumeikan Univ.*); Okada, Shima (*Ritsumeikan Univ.*); Makikawa, Masaaki (*Ritsumeikan Univ.*)
- 17:15-19:00 FrPoS-31.28  
**Sleep Stage Estimation using Head Motion**  
 Yoshihi, Motoki\* (*Ritsumeikan Univ., College of Science and Engineering*); Nochino, Teruaki (*Osaka Univ.*); Okada, Shima (*Ritsumeikan Univ.*); Makikawa, Masaaki (*Ritsumeikan Univ.*)

- 17:15-19:00 FrPoS-31.29  
**Overnight Investigation of Periodic Limb Movements using Wearable Socks with Embedded Fabric Electrodes**  
Eguchi, Kana\* (Kyoto University); Nambu, Masayuki (Kyoto University Hospital); Ueshima, Kazuo (Teijin Frontier Co. Ltd.); Kuroda, Tomohiro (Kyoto University)
- 17:15-19:00 FrPoS-31.30  
**Conventional Pulse Transit Times as Markers of Blood Pressure**  
Block, Robert (Univ. of Rochester Medical Center); Yavarimanesh, Mohammad (Michigan State Univ.); Natarajan, Keerthana (Michigan State Univ.); Carek, Andrew (Georgia Institute of Technology); Zhu, Junxi (Univ. of Maryland); Schifitto, Giovanni (Univ. of Rochester); Inan, Omer (Georgia Institute of Technology); Hahn, Jin-Oh (Univ. of Maryland); Mukkamala, Ramakrishna\* (Michigan State Univ.)
- 17:15-19:00 FrPoS-31.31  
**Correlating the Passive Response of Eye and Brain to Head Impact**  
Meng, Yuan (Auburn Univ.); Adams, Mark\* (Auburn Univ.)
- 17:15-19:00 FrPoS-31.32  
**Share-Controlled Smart Wheelchair with Low Cost Sensor Network and Mixed Reality Experience**  
Pu, Jiangbo\* (Institute of BioMedical Engineering, Chinese Academy of Medical Sciences and Peking Union Medical College); Jiang, Youcong (Institute of BioMedical Engineering, Chinese Academy of Medical Sciences and Peking Union Medical College); Xie, Xiaobo (Institute of BioMedical Engineering, Chinese Academy of Medical Sciences); Liu, Ming (Institute of BioMedical Engineering, Chinese Academy of Medical Sciences and Peking Union Medical College); Chen, Xiaogang (Institute of BioMedical Engineering, Chinese Academy of Medical Sciences); Yao, Bo (Chinese Academy of Medical Sciences & Peking Union Medical College Institute of BioMedical Engineering); Xu, Shengpu (Institute of BioMedical Engineering, Chinese Academy of Medical Sciences)
- 17:15-19:00 FrPoS-31.33  
**New Wearable Cardiovascular Watch Monitor: A Pilot Study of Tilt Table Responses for 12 Healthy Male Participants**  
Macdonald, Audrey (Newcastle Hospitals); Sims, Andrew (Newcastle University); Wander, Miah (Microsoft Research); Morris, Dan (Microsoft Research); Newton, Julia (Newcastle University); Allen, John\* (Freeman Hospital)
- 17:15-19:00 FrPoS-31.34  
**Studying the Effect of Order and Duration Ratio of Pulse Polarities on Retinal Ganglion Cell Activation Thresholds**  
Haji Ghaffari, Dorsa\* (University of Michigan); Weiland, James (University of Michigan)
- 17:15-19:00 FrPoS-31.35  
**Utility of Machine Learning based Analysis of Photoplethysmography Waveforms for Detecting Systemic Sclerosis: A Preliminary Study**  
Iqbal, Sadaf (Newcastle University); Sims, Andrew (Newcastle University); Griffiths, Bridget (Newcastle Hospitals); Allen, John\* (Freeman Hospital)
- 17:15-19:00 FrPoS-31.36  
**A Low-ESR Indoor Photovoltaic Energy Harvesting Battery for Periodically Sampling Office Air Quality in Real-Time**  
Yue, Xical\* (University of the West of England); Kiely, Janice (University of the West of England); Gibson, Des (University of the West of Scotland)
- 17:15-19:00 FrPoS-31.37  
**Unconscious Alteration of Hand Choice in Arm Reaching Task by Visuomotor Amplification in Immersive Virtual Reality Environment**  
Sakabe, Naoko (Tokyo Univ. of Agriculture and Technology); Yano, Shiro (Tokyo Univ. of Agriculture and Technology); Kondo, Toshiyuki\* (Tokyo Univ. of Agriculture and Technology)
- 17:15-19:00 FrPoS-31.38  
**Detecting Personal Movement Patterns in a Structured Environment**  
Maeder, Anthony John\* (Flinders University, School of Nursing & Health Sciences); Poultney, Nathan (Flinders University)
- 17:15-19:00 FrPoS-31.39  
**Reconstruction of the 12-Lead Electrocardiogram from 3-Lead Patch-Type Device**  
Sohn, Jangjay (Seoul National University); Ku, Yunseo (Chungnam National University College of Medicine); Lee, Saram (Seoul National University Hospital); Ahn, Joong Woo (Seoul National University); Lee, Joonyong (Seoul National University); Yang, Seungman (Seoul National University); Kim, Hee Chan\* (Seoul National University)
- 17:15-19:00 FrPoS-31.40  
**Nonlinear Dynamic Methodologies Applied to the Analysis of Stress Tests Tachograms**  
Pérez López, Nancy Gabriela (Instituto Politécnico Nacional- Unidad Profesional Interdisciplinaria de Biotecnología); Salcedo Martínez, Amparo (Instituto Politécnico Nacional); Zamora-Justo, José Alberto\* (UPIBI, Instituto Politécnico Nacional); Muñoz-Diosdado, Alejandro (UPIBI, Instituto Politécnico Nacional, Mexico)
- 17:15-19:00 FrPoS-31.41  
**Global Identification of the Reduced Model for Forced Expiration**  
Polak, Adam G.\* (Wrocław University of Science and Technology)
- 17:15-19:00 FrPoS-31.42  
**Comprehensive Imaging of Neuronal Calcium Dynamics in a Conscious, in Vivo Model System**  
Dellazizzo Toth, Tristan\* (University of British Columbia); Sakaki, Kelly Dean Roy (University of British Columbia, Centre for Brain Health); Podgorski, Kaspar (HHMI Janelia Research Campus); Haas, Kurt (University of British Columbia)
- 17:15-19:00 FrPoS-31.43  
**Accelerometer-Based Speed Adaptive Gait Recognition using PCA&LDA**  
Mao, Chenfei (Institute of Information and Engineering, Shenzhen Univ.); Li, Ye (Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences); Zhang, Li (Institute of Information and Engineering, Shenzhen Univ.); Sun, Fangmin\* (Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences)
- 17:15-19:00 FrPoS-31.44  
**System Design and Testing of Lower Esophageal Sphincter Manometry based on Balloon Catheters**  
Zhu, Chuanqing (Southeast University); Tao, Wanjun (Southeast University); Sun, Xinchun (Southeast University); Zhao, Lili (The First Affiliated Hospital of Nanjing Medical University); Wang, Min (Nanjing Medical University); Fan, Zhining (The First Affiliated Hospital of Nanjing Medical University); Lü, Xiaoying\* (Southeast University); Wang, Zhigong (Southeast University)
- 17:15-19:00 FrPoS-31.45  
**BLINE: A Novel Method for B-Line Identification in Lung Ultrasound**  
Anantrasirichai, Nantheera (University of Bristol); Allinovi, Marco (Meyer Children's Hospital); Hayes, Wesley (Great Ormond Street Hospital); Bull, David Roger (University of Bristol); Achim, Alin\* (University of Bristol)
- 17:15-19:00 FrPoS-31.46  
**Enabling Translational Research on Integrated and Closed-Loop Medical Systems using an Open-Source Approach**  
Asare, Philip\* (Bucknell University); Liu, Chen (Bucknell University); Xu, Yunyingying (Bucknell University); Kyaw, Win (Bucknell University); Karki, Dikendra (Bucknell University); Mittal, Yash (Bucknell University); Gessa, Farooq (Bucknell University); Acharya, Adit (Bucknell University); Qureshi, Mateen (Bucknell University); Poler, S. Mark (Geisinger Health System)



17:15-19:00 FrPoS-31.47  
**A Lens-Free Imaging Device with a Hybrid Emission Filter for Fluorescent Microchamber Counting**  
 Sasagawa, Kiyotaka\* (*Nara Institute of Science and Technology*); Ikeda, Narihito (*Nara Institute of Science and Technology*); Haruta, Makito (*Nara Institute of Science and Technology*); Takehara, Hironari (*Nara Institute of Science and Technology*); Noda, Toshihiko (*Nara Institute of Science and Technology*); Tokuda, Takashi (*Nara Institute of Science and Technology*); Ohta, Jun (*Nara Institute of Science and Technology*)

17:15-19:00 FrPoS-31.48  
**The Effect of Virtual Reference on Myoelectric Pattern Recognition**  
 Yao, Bo\* (*Chinese Academy of Medical Sciences & Peking Union Medical College Institute of BioMedical Engineering*); Peng, Yun (*Massachusetts General Hospital*); Zhang, Xu (*Univ. of Science and Technology of China*); Liu, Ming (*Institute of BioMedical Engineering, Chinese Academy of Medical Sciences and Peking Union Medical College*); Pu, Jiangbo (*Institute of BioMedical Engineering, Chinese Academy of Medical Sciences and Peking Union Medical College*); Zhou, Ping (*Univ. of Texas Health Science Center at Houston*); Xu, Shengpu (*Institute of BioMedical Engineering, Chinese Academy of Medical Sciences*)

17:15-19:00 FrPoS-31.49  
**Improving Stress Forecasting using LSTM Neural Networks**  
 Umematsu, Terumi\* (*NEC Corp.*); Sano, Akane (*Massachusetts Institute of Technology*); Taylor, Sara (*Massachusetts Institute of Technology*); Picard, Rosalind (*Massachusetts Institute of Technology*)

17:15-19:00 FrPoS-31.50  
**A Silent and Lightweight Prosthetic Hand using Ultrasonic Motors for Daily Lives**  
 Kazumi, Tomoya (*Keio Univ.*); Takemura, Kenjiro\* (*Keio Univ.*)

FrPoS-32: 17:15-19:00 Exhibit Hall 2  
**Friday 1 Page Research Poster Paper (III) (Poster Session)**

17:15-19:00 FrPoS-32.1  
**A Multi-Lead QRS Complex Detection Method on 12-Lead Electrocardiogram Signals**  
 Zhao, Wei\* (*Guangzhou Shiyuan Electronics Co., Ltd.*); Xu, Yanwu (*Guangzhou Shiyuan Ltd. Co*); Yan, Cong (*Guangzhou Shiyuan Electronics Co., Ltd.*); Hu, Jing (*Guangzhou Shiyuan Electronic Technology Co., Ltd.*); Jia, Dongya (*CVTE, Guangdong Province, China*); Sun, Xu (*Guangzhou Shiyuan Electronics Co., Ltd. (CVTE)*); Wang, Hongmei (*Guangzhou Shiyuan Electronics Co., Ltd.*); You, Tianyuan (*Guangzhou Shiyuan Electronics Co., Ltd.*)

17:15-19:00 FrPoS-32.2  
**Development of Ankle Range of Motion Exercise Device using Pneumatic Soft Actuators**  
 Ohe, Sachio (*Osaka Institute of Technology*); Taniguchi, Hironari\* (*Osaka Institute of Technology*)

17:15-19:00 FrPoS-32.3  
**An Interdisciplinary Senior Design Project Course**  
 Laiho, Lily\* (*Cal Poly, San Luis Obispo*); Carichner, Karla (*Cal Poly University*); Widmann, Jim (*Cal Poly, San Luis Obispo*)

17:15-19:00 FrPoS-32.4  
**A Prototype Design of Uterine EMG Monitoring Patch for Early Detection of Preterm Labor**  
 Jo, Young Chang\* (*Korea Electronics Technology Institute*); Hong, Hyuckki (*Korea Electronics Technology Institute*); Kim, Haena (*Korea Electronics Technology Institute*); Hwang, Won Hee (*Korea Electronics Technology Institute*); Choi, Yeon Shik (*Korea Electronics Technology Institute*); Jung, Suk Won (*Korea Electronics Technology Institute*)

17:15-19:00 FrPoS-32.5  
**Passive RF Resonator for Pulsatile Blood Flow Monitoring**  
 Becker, Ryan\* (*Wichita State Univ.*); Loflin, Ben (*Wichita State Univ.*); Bhandari, Subash (*Wichita State Univ.*); Villafana-Ibarra, Bernardo (*Wichita State Univ.*); Griffith, Jacob (*Wichita State Univ.*); Cluff, Kim (*Wichita State Univ.*)

17:15-19:00 FrPoS-32.6  
**Development of Simultaneous Ultrasonic Imaging System under High Magnetic Fields of MRI**  
 Inagaki, Ken (*Doshisha University*); Arai, Shimpei (*Doshisha University*); Akiyama, Iwaki\* (*Doshisha University*)

17:15-19:00 FrPoS-32.7  
**A Preliminary Study on Evaluation of Urine Flow Rate in Standing Posture using a Bath Scale**  
 Noro, Tsuyoshi (*University of Toyama*); Kim, Juhyon (*University of Toyama*); Fujita, Tetsuya (*University of Toyama*); Nakajima, Kazuki\* (*University of Toyama*)

17:15-19:00 FrPoS-32.8  
**Feasibility Study of Weak Drowsiness Prediction based on Heart Beat Information While Driving**  
 Katsuhara, Yasuo\* (*Toyota Motor Corp.*); Kaji, Hirotsuka (*Toyota Motor Corp.*); Hatakeyama, Yoshiyuki (*Toyota Motor Corp.*)

17:15-19:00 FrPoS-32.9  
**Lightweight Slim Joint-Integrated Actuator for a Walking Assistance Device**  
 Roh, Se-gon\* (*Samsung Advanced Institute of Technology, Samsung Electronics Co., Ltd.*); Lee, Jongwon (*Samsung Electronics Co., Ltd.*); Choi, Byungjune (*Samsung Advanced Institute of Technology*); Kim, Jeonghun (*SAIT (Samsung Advanced Institute of Technology)*); Choi, Hyun Do (*SAIT (Samsung Advanced Institute of Technology)*); Roh, Changhyun (*Samsung Electronics*); Shim, Youngbo (*SAIT (Samsung Advanced Institute of Technology)*); Lee, Younbaek (*SAIT (Samsung Advanced Institute of Technology)*); Lee, Minhyung (*Samsung Advanced Institute and Technology*)

17:15-19:00 FrPoS-32.10  
**Topological Optimization of an Ankle Assist Device**  
 Kim, Jeonghun\* (*SAIT (Samsung Advanced Institute of Technology)*); Choi, Hyun Do (*SAIT (Samsung Advanced Institute of Technology)*); Lee, Minhyung (*Samsung Advanced Institute and Technology*); Shim, Youngbo (*Samsung Advanced Institute of Technology*)

17:15-19:00 FrPoS-32.11  
**The Study on Senior's Attentional Influence According to Contents Environment through Biosignals**  
 Kim, Wooseop (*The Seongnam Senior Experience Complex, Eulji University*); Shin, Young Seok (*Eulji University*); Shin, I Su (*Eulji University*); Chae, Seonah (*Eulji University*); Jung, Duk Young\* (*The Seongnam Senior Experience Complex, Eulji University*); Kim, Ku Ho (*Eulji University*); Choi, Dageong (*Eulji University*)

17:15-19:00 FrPoS-32.12  
**A Fully Automated Lung Segmentation and Refinement for PET/CT Images based on Adaptive Maximum Intensity Projection**  
 Yang, Su (*Keimyung Univ.*); Kim, Hae won (*Keimyung Univ. School of Medicine*); Lee, Jong-Ha\* (*Keimyung Univ., School of Medicine*); Park, Eun-Bin (*Keimyung Univ.*)

17:15-19:00 FrPoS-32.13  
**The Novel Computer Aided Detection and Diagnosis Algorithms for Intravascular Optical Coherence Tomography Images**  
 Yang, Su (*Keimyung University*); Yoon, Hyuck-Jun (*Keimyung University*); Lee, Jong-Ha\* (*Keimyung University, School of Medicine*); Park, Eun-Bin (*Keimyung University*)

- 17:15-19:00 FrPoS-32.14  
**Effects of Inattention on ERPs during Simulated Driving**  
Lee, Chang Won\* (*Hyundai Mobis*); Kim, Taekyung (*Hyundai Mobis*); Lim, Hyunjun (*Hyundai Mobis CO., Ltd.*); Park, Ki-Hee (*Hyundai Mobis Co., Ltd.*); Hwang, Jong Ho (*Hanyang University*); Park, Jinsick (*Hanyang University*); Kim, In Young (*Hanyang University*); Byun, Ohsung (*Hyundai Mobis CO., Ltd.*)
- 17:15-19:00 FrPoS-32.15  
**The Promotion of Muscle Protein Synthesis of Skeletal Muscle Cells Due to ROS Generation by Exposure to Ultrasound**  
Furuya, Motohide (*Doshisha University*); Okamoto, Chihiro (*Doshisha University*); Ichikawa, Hiroshi (*Doshisha University*); Akiyama, Iwaki\* (*Doshisha University*)
- 17:15-19:00 FrPoS-32.16  
**Adaptive Heart Rate Estimation from Face Videos**  
Sharma, Utkarsh\* (*NEC Corp.*); Umematsu, Terumi (*NEC Corp.*); Tsujikawa, Masanori (*NEC Corp.*); Onishi, Yoshifumi (*NEC Corp.*)
- 17:15-19:00 FrPoS-32.17  
**The Development of Blood Pressure Measurement System and Algorithm during Driving**  
Kim, Chan-II (*Keimyung University*); Kim, HyungJin (*Gumi Electronics and Information Technology Research Institute*); Lee, Jong-Ha\* (*Keimyung University, School of Medicine*)
- 17:15-19:00 FrPoS-32.18  
**Gait Identification using 3-Axis Accelerometer**  
Lee, SeungJae (*Hanyang University*); Kim, Dohyun (*Hanyang University*); Ahn, Hyun Jun (*Hanyang University*); Kim, Min Seong (*Hanyang University*); Park, Cheoljin (*Hanyang University*); Choi, Jaeyoung (*Hanyang University*); Lee, Jong-Shill\* (*Hanyang University*); Kim, Sun I. (*Osong Medical Innovation foundation*)
- 17:15-19:00 FrPoS-32.19  
**Classification of Knee Osteoarthritis with Cyclogram of Joint Angles**  
Lee, hyojin (*BioMedical Engineering Dept., Univ. of Hanyang*); Ahn, Hyun Jun (*Hanyang Univ.*); Kim, Sunae (*Dept. of BioMedical Engineering Hanyang Univ.*); Choi, Jaeyoung (*Hanyang Univ.*); Yook, Sunhyun (*Hanyang Univ.*); Park, Jinsick (*Hanyang Univ.*); Kim, Sun I. (*Osong Medical Innovation foundation*); Jang, DongPyo\* (*Hanyang Univ.*)
- 17:15-19:00 FrPoS-32.20  
**Sleep State Estimation using Wearable ECG Measurement Device**  
Matsumoto, Hirota\* (*Ritsumeikan Univ.*); Okada, Shima (*Ritsumeikan Univ.*); Makikawa, Masaaki (*Ritsumeikan Univ.*)
- 17:15-19:00 FrPoS-32.21  
**Development of Pulse Wave Measuring Device using Barometric Pressure Sensor**  
Lee, Jaehun (*Yonsei University*); Kwon, Soon-II (*Yonsei University*); Yoon, Young-ro\* (*Yonsei University*)
- 17:15-19:00 FrPoS-32.22  
**Desorption of DMPC Molecules from the Microbubble Surface under Ultrasound Irradiation**  
Nakata, Makiko (*Doshisha University*); Tanimura, Nozomi (*Doshisha University*); Koyama, Daisuke\* (*Doshisha University*); Krafft, Marie Pierre (*Institut Charles Sadron*)
- 17:15-19:00 FrPoS-32.23  
**Classification of Obstructive Sleep Apnea using Non-Contact Respiratory Monitoring System**  
Park, Jonguk (*Yonsei Univ.*); Kang, KyuMin (*Yonsei Univ.*); Urtnasan, Erdenebayar (*Yonsei Univ.*); Choi, Ho Seon (*Daewon Univ. College*); Lee, Kyoung Joung\* (*Yonsei Univ.*)
- 17:15-19:00 FrPoS-32.24  
**On-Demand Automatic Registration Method between CT and Electromagnetic Tracking Device using RGB-D Camera**  
Choi, Min Hyuk\* (*Seoul National University*); Yi, WonJin (*Seoul National University, School of Dentistry*)
- 17:15-19:00 FrPoS-32.25  
**Analysis of Driver's Attention State using Heart Rate Variability and Electroencephalography**  
Hong, Sung jun (*Hanyang University*); Hwang, Jong Ho (*Hanyang University*); Lee, hyojin (*BioMedical Engineering Dept., University of Hanyang*); Park, Cheoljin (*Hanyang*); Lim, Hyunjun (*Hyundai Mobis CO., Ltd.*); Park, Jinsick (*Hanyang University*); Jang, DongPyo (*Hanyang University*); Kim, Taekyung (*Hyundai Mobis*); Lee, Chang Won (*Hyundai Mobis*); Park, Ki-Hee (*Hyundai Mobis Co., Ltd.*); Kim, In Young\* (*Hanyang University*)
- 17:15-19:00 FrPoS-32.26  
**Whole Brain Analysis of Brain Areas Altered by Internet Addiction using Permutation Test**  
Okazaki, Yasuomi\* (*Waseda University*); Oshiro, Ryotaro (*Waseda University*); Kuriki, Shinya (*Tokyo Denki University*); Kobayashi, Hiroshi (*Tokyo Denki University*); Nakayama, Hideki (*National Hospital Organization Kurihama Medical and addiction center*); Mihara, Satoko (*National Hospital Organization Kurihama Medical and addiction center*); Higuchi, Susumu (*National Hospital Organization Kurihama Medical and addiction center*); Ishiyama, Atsushi (*Waseda University*)
- 17:15-19:00 FrPoS-32.27  
**Interlocking Control of Blood Viscosity and Red Blood Cell Aggregation Degree under Alkaline Condition**  
Sato, Takayuki\* (*Tokyo Metropolitan University*)
- 17:15-19:00 FrPoS-32.28  
**Localization of Brain Areas with Altered Functional Connectivity by Internet-Use Addiction**  
Oshiro, Ryotaro\* (*Waseda Univ.*); Okazaki, Yasuomi (*Waseda Univ.*); Ono, Yumie (*Meiji Univ.*); Ishiyama, Atsushi (*Waseda Univ.*); Mihara, Satoko (*National Hospital Organization Kurihama Medical and addiction center*); Higuchi, Susumu (*National Hospital Organization Kurihama Medical and addiction center*); Kobayashi, Hiroshi (*Tokyo Denki Univ.*); Kuriki, Shinya (*Tokyo Denki Univ.*); Nakayama, Hideki (*National Hospital Organization Kurihama Medical and addiction center*)
- 17:15-19:00 FrPoS-32.29  
**Finite Element Analysis of Potential Migration of a Stent Graft into Thoracic Aortic Aneurysm**  
Kozaki, Junya (*Waseda Univ.*); Zhu, Xiaodong (*Waseda Univ.*); Shukuzawa, Kota (*Waseda Univ.*); Umezue, Mitsuo (*Waseda Univ. Graduate School*); Iwasaki, Kiyotaka\* (*Waseda Univ.*)
- 17:15-19:00 FrPoS-32.30  
**Objective Evaluation of Fundamental Perception Characteristics of Cartilage Conduction by Brain Magnetic Field Measurement**  
Yap, Gaik Sean\* (*Chiba University*); Otsuka, Sho (*Chiba University*); Yumoto, Masato (*Graduate School of Medicine, University of Tokyo*); Nakagawa, Seiji (*Chiba University*)
- 17:15-19:00 FrPoS-32.31  
**Development of Stable Electrocardiogram Measurement System using Multi Capacitance Coupling Electrodes**  
Kato, Daiki\* (*Ritsumeikan University*); Nochino, Teruaki (*Osaka University*); Makikawa, Masaaki (*Ritsumeikan University*); Okada, Shima (*Ritsumeikan University*)
- 17:15-19:00 FrPoS-32.32  
**Development of Socks to Prevent an Inversion Sprain in Futsal**  
Sato, Yuya\* (*Ritsumeikan University*); Okada, Shima (*Ritsumeikan University*)

- 17:15-19:00 FrPoS-32.33  
**Computer Aided Myoelectric Interface for Assistive Vehicles**  
 Naber, Adam (*Chalmers University of Technology*); Karayiannidis, Yiannis (*Chalmers University of Technology*); Ortiz-Catalan, Max\* (*Chalmers University of Technology*)
- 17:15-19:00 FrPoS-32.34  
**Development of Pulse Diagnosis System for Quantitative Evaluation**  
 Yamada, Akihiro\* (*Tohoku University*); Inoue, Yusuke (*Institute of Development, Aging and Cancer, Tohoku University*); Tsuboko, Yusuke (*Waseda University*); Shiraishi, Yasuyuki (*Tohoku University*); Masato, Karube (*Tohoku University*); Genda, Tatsuya (*Tohoku University*); Seki, Takashi (*Tohoku University*); Yambe, Tomoyuki (*Tohoku University*)
- 17:15-19:00 FrPoS-32.35  
**Applications of the Internet of the Body Platform**  
 Straessle, Rahel (*IBM Research - Zurich*); Weiss, Jonas (*IBM Research - Zurich*); Sridhar, Arvind (*IBM Research - Zurich*); Pluntke, Ulrike (*IBM Deutschland GmbH*); Brunschweiler, Thomas (*IBM Research - Zurich*); Gerke, Sebastian (*IBM Research - Zurich*); Ruch, Patrick (*IBM Research - Zurich*); Paredes, Stephan (*IBM Research - Zurich*); Barroso Carmona, Jorge (*IBM Research - Zurich*); van Kessel, Theodore (*IBM Watson Research Lab*); Zafar, Sufi (*IBM Watson Research Lab*); Matsumoto, Keiji (*IBM Research Tokyo*); Michel, Bruno\* (*IBM Research - Zurich*)
- 17:15-19:00 FrPoS-32.36  
**Evaluation of Piezoelectricity of Equine Tendons in the MHz Range**  
 Kuraoka, Masaki\* (*Doshisha University*); Matsukawa, Mami (*Doshisha University*); Makino, Taiki (*Doshisha University*); Mori, Shunki (*Doshisha University*); Tamura, Norihisa (*Doshisha University*); Kasashima, Yoshinori (*Doshisha University*)
- 17:15-19:00 FrPoS-32.37  
**Single Element Ultrasound Device for Left Ventricular Parameter Measurement – A Feasibility Study**  
 Vedagiri Pushpanathan, Karthik\* (*Indian Institute of Technology Madras*); Joseph, Jayaraj (*HTIC, Indian Institute of Technology Madras*); Sivaprakasam, Mohanasankar (*Indian Institute of Technology Madras*)
- 17:15-19:00 FrPoS-32.38  
**Optimal Leads for Measuring Capacitive-Coupled Electrocardiogram on the Bed**  
 Lee, Dongseok (*Seoul National University*); Lim, Yong Gyu (*Sangji University*); Park, Kwang S.\* (*Seoul National University*)
- 17:15-19:00 FrPoS-32.39  
**Multivariate Gaussian Mixture Model Parameterisation of Phase Plots for Monitoring of Parkinson's Disease**  
 Dunne-Willows, Michael\* (*EPSRC Centre for Doctoral Training in Cloud Computing for Big Data, Newcastle University*); Watson, Paul (*School of Computing Science, Newcastle University, Newcastle Upon Tyne, UK*); Rochester, Lynn (*Newcastle University*); Shi, Jian (*School of Mathematics and Statistics, Newcastle University*); Del Din, Silvia (*Newcastle University*)
- 17:15-19:00 FrPoS-32.40  
**Cellular Imaging of Blue-Emitted Carbon Dots through Mechanochemical Synthesis**  
 In, Insik (*Korea National University of Transportation*); Kwon, Binhee\* (*Korea National University of Transportation*); Jeong, Woojun (*Korea National University of Transportation*); Lee, Sangkug (*Korea Institute of Industrial Technology*); Song, Ho Jun (*Korea Institute of Industrial Technology*); Lee, Moon-Su (*RAPHAS*); Sung, Chang Yub (*RAPHAS*); Lee, Yuhun (*Brigham and Women's Hospital, Harvard Medical School*)
- 17:15-19:00 FrPoS-32.41  
**High-Resolution Observation Method for Freely Swimming Medaka using High-Speed Optical Tracking with Ellipse Self-Window**  
 Sueishi, Tomohiro\* (*University of Tokyo*); Ogawa, Takuya (*NEC Corp.*); Yachida, Shoji (*NEC*); Watanabe, Yoshihiro (*University of Tokyo*); Ishikawa, Masatoshi (*University of Tokyo*)
- 17:15-19:00 FrPoS-32.42  
**A Method of Detecting Otitis Media from Images obtained with Cellscope using Decision Tree for Rehabilitation**  
 Moon, Chanki (*Soonchunhyang Univ.*); Nam, Yunyoung\* (*Soonchunhyang Univ.*); Lee, Keonsoo (*Soonchunhyang Univ.*)
- 17:15-19:00 FrPoS-32.43  
**Non-Invasive Detection of Intracranial Pressure Changes by a Novel Radio Frequency Resonant Skin Patch Sensor**  
 Griffith, Jacob\* (*Wichita State University*); Eckerman, Brandon (*Wichita State University*); Loflin, Ben (*Wichita State University*); Becker, Ryan (*Wichita State University*); Martin, Bryn (*University of Idaho*); Cluff, Kim (*Wichita State University*)
- 17:15-19:00 FrPoS-32.44  
**3D Printing Vascularized Tissue Foam with Tunable Mechanics**  
 Cui, Haitao\* (*George Washington University*); Miao, Shida (*George Washington University*); Boehm, Manfred (*National Heart, Lung, and Blood Institute, National Institutes of Health*); Mohiuddin, Muhammad (*Dept. of Surgery University of Maryland*); Zhang, Lijie Grace (*George Washington University*)
- 17:15-19:00 FrPoS-32.45  
**Hidden Markov Models to Quantify Diurnal Rhythm Regularity in Bipolar Disorder and Borderline Personality Disorder**  
 Carr, Oliver\* (*Univ. of Oxford*); Saunders, Kate (*Univ. of Oxford*); Goodwin, Guy (*Univ. of Oxford*); De Vos, Maarten (*Univ. of Oxford*)
- 17:15-19:00 FrPoS-32.46  
**Sepsis Recovery Subtyping using Actigraphy Methods**  
 Davoudi, Anis\* (*Univ. of Florida*); Corbett, Duane B. (*Univ. Florida - College of Medicine*); Ozrazgat-Baslanti, Tezcan (*Univ. of Florida*); Bihorac, Azra (*Univ. of Florida*); Brakenridge, Scott C. (*Univ. of Florida*); Manini, Todd M. (*Univ. of Florida*); Rashidi, Parisa (*Univ. of Florida*)
- 17:15-19:00 FrPoS-32.47  
**A New Approach for Secure and Energy-Efficient Transmissions of Cardiac Diagnosis Data**  
 Sahu, Neerja (*Univ. of Nebraska - Lincoln*); Peng, Dongming\* (*Univ. of Nebraska - Lincoln*); Sharif, Hamid (*Univ. of Nebraska-Lincoln*)
- 17:15-19:00 FrPoS-32.48  
**A Self-Powered Paper-Based Lactate Biosensor based on MgO-Templated Carbon Electrodes with Lactate Oxidase and Bilirubin Oxidase**  
 Shitanda, Isao\* (*Tokyo University of Science*); Hoshi, Yoshinao (*Tokyo University of Science*); Itagaki, Masayuki (*Tokyo University of Science*); Tsujimura, Seiya (*University of Tsukuba*); Mikawa, Tsutomu (*RIKEN*); Matsui, Hiroyuki (*Yamagata University*); Tokito, Shizuo (*Yamagata University*)
- 17:15-19:00 FrPoS-32.49  
**Real-Time Heartbeat Signal Sensing and Transmission using Human Body Communication**  
 Koshiji, Fukuro\* (*Tokyo Polytechnic University*); Urushidate, Ryogo (*Tokyo Polytechnic University*); Muramatsu, Dairoku (*Tokyo University of Science*); Yamamoto, Takahiko (*Tokyo University of Science*); Koshiji, Kohji (*Tokyo University of Science*)
- 17:15-19:00 FrPoS-32.50  
**A Cognitive Measure of Spatial Knowledge Acquisition**  
 Kenny, Bret\* (*Memorial University*); Veitch, Brian (*Memorial University*); Power, Sarah (*Memorial University*)

## Saturday, 21 July 2018

SaAT1: 08:00-09:30 Meeting Room 311  
**Neural Interfaces (III) (Theme 6)** (Oral Session)  
**Chair:** Lee, Hyunjoo Jenny (Korea Advanced Institute of Science and Technology (KAIST))

08:00-08:15 SaAT1.1  
**Flexible MRI Compatible Brain Probes**  
 Ahmadi, Mahdi\* (University of Minnesota); Cruttenden, Corey (University of Minnesota); Zhu, Xiao-Hong (University of Minnesota); Chen, Wei (University of Minnesota); Rajamani, Rajesh (University of Minnesota)

08:15-08:30 SaAT1.2  
**Electrophysiological Detection of Cortical Neurons under Gamma-Aminobutyric Acid and Glutamate Modulation based on Implantable Microelectrode Array Combined with Microinjection**  
 Song, Yilin (State Key Lab of Transducer Technology, Institute of Electronics, Chinese Academy of Sciences); Xiao, Guihua (Univ. of Chinese Academy of Sciences); Li, Ziyue (Chinese Academy of Sciences, Institutes of Electronics); Gao, Fei (Chinese Academy of Sciences, Institutes of Electronics); Wang, Mixia (Institute of Electronics, Chinese Academy of Sciences); Xu, Shengwei (Institute of Electronics, Chinese Academy of Sciences); Cai, Xinxia\* (Institute of Electronics, Chinese Academy of Sciences)

08:30-08:45 SaAT1.3  
**Micro-Folded 3D Neural Electrodes Fully Integrated in Polyimide**  
 Rehberger, Frank (Univ. of Freiburg); Stieglitz, Thomas (Univ. of Freiburg); Eickenscheidt, Max\* (Univ. of Freiburg)

08:45-09:00 SaAT1.4  
**3D Printed Cranial Window System for Chronic  $\mu$ ECOG Recording**  
 Bent, Brinnae\* (Duke University); Williams, Ashley (Duke University); Bolick, Ryan (RJB Design); Chiang, Ken Chia-Han (Duke University); Trumpis, Michael (Duke University); Viventi, Jonathan (Duke University)

09:00-09:15 SaAT1.5  
**Implantable Glass Waveguides and Coating Materials for Chronic Optical Medical Applications**  
 Alt, Marie Theresa\* (University of Freiburg); Mitnacht, Annette (University of Freiburg); Stieglitz, Thomas (University of Freiburg)

09:15-09:30 SaAT1.6  
**Application of Parylene-Based Flexible Multi-Electrode Array for Recording from Subcortical Brain Regions from Behaving Rats**  
 Xu, Huijing\* (University of Southern California); Scholten, Kee (University of Southern California); Meng, Ellis (University of Southern California); Berger, Theodore (USC); Song, Dong (University of Southern California)

SaAT2: 08:00-09:30 Meeting Room 312  
**Physiological Systems Modeling: Multivariate Signal Processing (Theme 1)** (Oral Session)  
**Chair:** Faes, Luca (University of Palermo)  
**Co-Chair:** Bianchi, Anna Maria (Politecnico di Milano)

08:00-08:15 SaAT2.1  
**Graph-Based Dimensionality Reduction of EEG Signals via Functional Clustering and Total Variation Measure for BCI Systems**  
 Mohammadi, Arash\* (Concordia University); Kalantar, Golnar (Concordia University)

08:15-08:30 SaAT2.2  
**Multiscale Decomposition of Cardiovascular and Cardiorespiratory Information Transfer under General Anesthesia**  
 Faes, Luca\* (University of Palermo); Bari, Vlasta (IRCCS PoliClinico San Donato); Ranucci, Marco (Dept. of Cardiothoracic, Vascular Anesthesia and Intensive Care, IRCCS PoliClinico San Donato, Milan); Porta, Alberto (Università degli Studi di Milano)

08:30-08:45 SaAT2.3  
**A New Modelling Framework to Study Time-Varying Directional Brain-Heart Interactions: Preliminary Evaluations and Perspectives**  
 Catrambone, Vincenzo\* (Università di Pisa); Greco, Alberto (Univ. of Pisa); Nardelli, Mimma (Univ. of Pisa); Ghiasi, Shadi (Univ. of Pisa); Vanello, Nicola (Univ. of Pisa); Scilingo, Enzo Pasquale (Univ. of Pisa); Valenza, Gaetano (Univ. of Pisa)

08:45-09:00 SaAT2.4  
**Exploration of Commercial Web-Sites Affects Autonomic Responses Related to Unconscious Emotions**  
 Riccardo, Lolatto (Politecnico di Milano); Tacchino, Giulia (Politecnico di Milano); Bettiga, Debora (Politecnico di Milano); Lamberti, Lucio (Politecnico di Milano); Cerutti, Sergio (Politecnico di Milano); Bianchi, Anna Maria\* (Politecnico di Milano)

09:00-09:15 SaAT2.5  
**Human-Machine Interaction Assessment by Neurophysiological Measures: A Study on Professional Air Traffic Controllers**  
 Arico, Pietro (Fondazione Santa Lucia); Reynal, Maxime (ENAC French Civil Aviation Univ., Toulouse Univ.); Imbert, Jean-Paul (ENAC); Hurter, Christophe\* (ENAC French Civil Aviation Univ., Toulouse Univ.); Borghini, Gianluca (Sapienza Univ. of Rome); Di Flumeri, Gianluca (Univ. of Rome Sapienza); Sciaraffa, Nicolina (Dept. of Computer, Control and Management Engineering, Univ. of Rome Sapienza); Di Florio, Antonio (Dept. Molecular Medicine, Univ. of Rome "Sapienza"); Terenzi, Michela (Deep Blue); Ferreira, Ana (Deep Blue); Pozzi, Simone (Deep Blue); Betti, Viviana (Dept. Psychology, Rome); Matteo, Marucci (BrainTrends srl); Pavone, Enea (BrainTrends srl, Rome); C. Telea, Alexandru (Dep. of Mathematics and Computing Science, Univ. of Groningen); Babiloni, Fabio (Univ. of Rome)

09:15-09:30 SaAT2.6  
**A Framework for Physiological Response Prediction with Joint Activity State Optimization**  
 Gonzalez, Laura\* (North Carolina State University); Zhong, Boxuan (North Carolina State University); Lobaton, Edgar (North Carolina State University)

SaAT3: 08:00-09:30 Meeting Room 314  
**Image Feature Extraction (Theme 2)** (Oral Session)

08:00-08:15 SaAT3.1  
**Isometry Invariant Shape Descriptors for Abnormality Detection on Brain Surfaces Affected by Alzheimer's Disease**  
 Tu, Yanshuai\* (Arizona State Univ.); Wen, Chengfeng (Stony Brook Univ.); Zhang, Wen (School of Computing, Informatics, and Decision Systems Engineering, Arizona State Univ.); Wu, Jianfeng (Arizona State Univ.); Zhang, Jie (Arizona State Univ.); Chen, Kewei (Shanghai Jiao Tong Univ.); Caselli, Richard (Dept. of Neurology, Mayo Clinic Arizona); Reiman, Eric (Banner Alzheimer's Institute); Gu, David Xianfeng (State Univ. of New York at Stony Brook); Wang, Yalin (Arizona State Univ.)

08:15-08:30 SaAT3.2  
**Discriminating ADHD from Healthy Controls using a Novel Feature Selection Method based on Relative Importance and Ensemble Learning**  
 Yao, Dongren (Institute of Automation, Chinese Academy of Sciences); Guo, Xiaojie (Peking Univ.); Zhao, Qihua (Peking Univ.); Liu, Lu (Peking Univ.); Cao, Qingjiu (Institute of Mental Health, Peking Univ., China); Wang, Yufeng (Peking Univ.); Calhoun, Vince (The Mind Research Network/Univ. of New Mexico); Sun, Li (Peking Univ.); Sui, Jing\* (Institute of Automation, Chinese Academy of Sciences)

08:30-08:45 SaAT3.3  
**QRS Detection and Measurement Method of ECG Paper based on Convolutional Neural Networks**  
 Yu, Runze (Peking University); Gao, Yingguo (Peking University); Duan, Xiaohui\* (Peking University); Zhu, Tianguang (Peking University People's Hospital); Wang, Zhilong (Peking University People's Hospital); Jiao, Bingli (Peking University)

08:45-09:00 SaAT3.4  
**Toward Lung Tumor Localization based on Strain Variability of Lung Surface during Video-Assisted Thoracoscopic Surgery**  
 Chopra, Nikita\* (*Western University*); Nicholson-Smith, Chloë (*The University of Western Ontario*); Shahbazi, Mahya (*The University of Western Ontario, Canadian Surgical Technologies and Advanced Robotics (CSTAR)*); Malthaner, Richard A. (*London Health Sciences Center, University of Western Ontario*); Patel, Rajni (*London Health Sciences Centre*)

09:00-09:15 SaAT3.5  
**Analysis of Cellular Feature Differences of Astrocytomas with Distinct Mutational Profiles using Digitized Histopathology Images**  
 Roy, Mousumi\* (*Stony Brook University*); Wang, Fusheng (*Stony Brook University*); Teodoro, George (*University of Brasilia*); Velázquez Vega, José E. (*Emory University*); Brat, Daniel (*Emory University*); Kong, Jun (*Emory University*)

SaAT4: 08:00-09:30 Meeting Room 315  
**Low Power Sensor Systems (Theme 7) (Oral Session)**

08:00-08:15 SaAT4.1  
**Development of a Contactless Energy Harvesting System Driven by Contraction of Skeletal Muscle for Implantable Medical Devices**  
 Mochida, Takumi (*Tokyo Institute of Technology*); Hijikata, Wataru\* (*Tokyo Institute of Technology*)

08:15-08:30 SaAT4.2  
**Sensitivity Optimization of Printed Spiral Coil for Wireless Resistive Analog Passive (WRAP) Sensors using Genetic Algorithm**  
 Noroozi, babak\* (*University of Memphis*); Morshed, Bashir (*University of Memphis*)

08:30-08:45 SaAT4.3  
**Subcutaneous Solar Energy Harvesting for Self-Powered Wireless Implantable Sensor Systems**  
 Wu, Taiyang\* (*Monash University*); Redouté, Jean-Michel (*Monash University*); Yuce, Mehmet (*Monash University*)

08:45-09:00 SaAT4.4  
**Blood-Separating Device without Energy Source for Implantable Medical Devices**  
 Otsuki, Hinako\* (*Keio University*); Ota, Takashi (*Keio University*); Miki, Norihisa (*Keio University*)

09:00-09:15 SaAT4.5  
**A Novel Flexible Sensor for Muscle Shape Change Monitoring in Limb Motion Recognition**  
 Huang, Pin-Gao (*Chinese Academy of Sciences*); Chen, Zhenxin (*Shandong Univ.*); Fu, Menglong (*Univ. of Chinese Academy of Sciences*); Wang, Hui (*Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences*); Samuel, Oluwarotimi Williams (*Shenzhen Institutes of Advanced Technology*); Liu, Zhiyuan (*Nanyang Technological Univ.*); Hu, Yongmei (*Shandong Univ.*); Fang, Peng (*Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences*); Chen, Shixiong (*Shenzhen Institutes of Advanced Technology*); Chen, Xiaodong (*Nanyang Technological Univ.*); Li, Guanglin\* (*Shenzhen Institutes of Advanced Technology*)

09:15-09:30 SaAT4.6  
**Carbon Nanotube-Cellulose Pellicle for Glucose Biofuel Cell**  
 Hasan, Md Qumrul (*University of Maryland Baltimore County*); Yuen, Jonathan (*U.S. Naval Research Lab.*); Slaughter, Gymama\* (*University of Maryland Baltimore County*)

SaAT5: 08:00-09:30 Meeting Room 316A  
**Electrical Source Imaging (Theme 2) (Oral Session)**

08:00-08:15 SaAT5.1  
**Improving EEG Source Localization with a Novel Regularization: Spatiotemporal Graph Total Variation (STGTV) Method**  
 Zhou, Hanyue\* (*University of California Los Angeles*); Wang, Yushan (*University of California Los Angeles*); Li, Ying (*University of California Los Angeles*); Ruan, Dan (*University of California Los Angeles*); Liu, Wentai (*University of California Los Angeles*)

08:15-08:30 SaAT5.2  
**A Comparison of Point and Complete Electrode Models in a Finite Difference Model of Invasive Electrode Measurements**  
 Hyde, Damon\* (*Boston Children's Hospital and Harvard Medical School*); Tomas-Fernandez, Xavier (*Harvard University*); Stone, Scellig (*Boston Children's Hospital and Harvard Medical School*); Peters, Jurriaan (*Boston Children's Hospital*); Warfield, Simon K. (*Harvard Medical School*)

08:30-08:45 SaAT5.3  
**Motor Attempt EEG Paradigm as a Diagnostic Tool for Disorders of Consciousness**  
 Schneider, Christoph (*EPFL*); Perdakis, Serafeim (*EPFL (École Polytechnique Fédérale de Lausanne)*); Silva, Marina (*Acute Neurorehabilitation Unit, Division of Neurology, Dept. of Clinical NeuroSciences, Centre Hospitalier Universitaire Va*); Jöhr, Jane (*Acute Neurorehabilitation Unit, Division of Neurology, Dept. of Clinical NeuroSciences, Centre Hospitalier Universitaire Va*); Alexander, Pincherle (*Acute Neurorehabilitation Unit, Division of Neurology, Dept. of Clinical NeuroSciences, Centre Hospitalier Universitaire Va*); Millán, José del R.\* (*Ecole Polytechnique Federale de Lausanne*); Karin, Diserens (*Acute Neurorehabilitation Unit, Division of Neurology, Dept. of Clinical NeuroSciences, Centre Hospitalier Universitaire Va*)

08:45-09:00 SaAT5.4  
**Preparation-Free Measurement of Event-Related Potential in Oddball Tasks from Hairy Parts using Candle-Like Dry Microneedle Electrodes**  
 Yoshida, Yuri\* (*Keio University*); Kudo, Yuta (*Keio University*); Hoshino, Eiichi (*Keio University*); Minagawa, Yasuyo (*Keio University*); Miki, Norihisa (*University*)

09:00-09:15 SaAT5.5  
**Automatic Independent Component Scalp Map Analysis of Electroencephalogram during Motor Preparation**  
 Cheema, Maninderpal Singh (*SUNY Buffalo*); Dutta, Anirban\* (*University at Buffalo SUNY*)

SaAT6: 08:00-09:30 Meeting Room 316B  
**Neuromuscular Systems (I) (Theme 6) (Oral Session)**  
**Chair:** Ellis, Michael (*Northwestern University*)  
**Co-Chair:** Abbas, James (*Arizona State University*)

08:00-08:15 SaAT6.1  
**Effect of Botulinum Toxin on the Spatial Distribution of Biceps Brachii EMG Activity using a Grid of Surface Electrodes: A Case Study**  
 Afsharipour, Babak\* (*Northwestern University*); Chandra, Sourav (*Shirley Ryan AbilityLab*); Son, Jongsang (*Shirley Ryan AbilityLab (formerly Rehabilitation Institute of Chicago)*); Rymer, William Zev (*Northwestern & Rehab Inst of Chicago*); Suresh, Nina (*Rehabilitation Institute of Chicago*)

08:15-08:30 SaAT6.2  
**Inter-Limb Muscle Synergy of Hands-and-Knees Crawling in Typical Developing Infants and Infants with Developmental Delay**  
 Xiong, Qiliang (*Chongqing University*); Hou, Wensheng\* (*Bioengineering Inst of Chongqing University*)

08:30-08:45 SaAT6.3  
**Robust Pattern Recognition Myoelectric Training for Improved Online Control within a 3D Virtual Environment**  
 Woodward, Richard\* (Northwestern University); Hargrove, Levi (Rehabilitation Institute of Chicago)

08:45-09:00 SaAT6.4  
**Differential Activation of Biceps Brachii Muscle Compartments for Human-Machine Interfacing**  
 Lendaro, Eva\* (Chalmers University of Technology); Nilsson, Simon (Chalmers University of Technology); Ortiz-Catalan, Max (Chalmers University of Technology)

09:00-09:15 SaAT6.5  
**Recurrent Neural Network based Early Prediction of Future Hand Movements**  
 Koch, Philipp\* (University of Luebeck); Phan, Huy (University of Oxford); Maaß, Marco (University of Lübeck); Katzberg, Fabrice (University of Luebeck); Mertins, Alfred (University of Lübeck)

09:15-09:30 SaAT6.6  
**Models of Motor Learning Generalization**  
 Parmar, Pritesh\* (Univ. of Illinois); Patton, James (Univ. Illinois at Chicago (UIC) & The Shirley Ryan AbilityLab (formerly RIC))

SaAT7: 08:00-09:30 Meeting Room 316C  
**Signal Processing and Classification of Neural Signals (Theme 1) (Oral Session)**  
 Chair: Mitsis, Georgios D. (McGill University)

08:00-08:15 SaAT7.1  
**Studying the Effects of Deep Brain Stimulation and Medication on the Dynamics of STN-LFP Signals for Human Behavior Analysis**  
 M. Golshan, Hosein\* (Univ. of Denver); Hebb, Adam O. (Univ. of Washington); Nedrud, Joshua (Colorado Neurological Institute); Mahoor, Mohammad H. (Univ. of Denver)

08:15-08:30 SaAT7.2  
**Neuroprostheses: Method to Evaluate the Information Content of Stimulation Strategies**  
 Meng, Kevin (National Vision Research Institute); Meffin, Hamish (National ICT Australia); Ibbotson, Michael R (Australian College of Optometry); Kameneva, Tatiana\* (Swinburne Univ. of Technology)

08:30-08:45 SaAT7.3  
**Bistability in Hodgkin-Huxley-Type Equations**  
 Kameneva, Tatiana\* (Swinburne Univ. of Technology); Meffin, Hamish (National ICT Australia); Burkitt, Anthony Neville (Univ. of Melbourne); Grayden, David B. (Univ. of Melbourne)

08:45-09:00 SaAT7.4  
**A Comparison Study of Point Process Filter and Deep Learning Performance in Estimating Rat Position using an Ensemble of Place Cells**  
 Rezaei, Mohammad Reza (Isfahan Univ. of Technology); Gillespie, Anna (Univ. of California, San Francisco); Guidara, Jennifer (Univ. of California, San Francisco, San Francisco); Nazari, Behzad (Isfahan Univ. of Technology); Sadri, Saeed (Isfahan Univ. of Technology); Frank, Loren (Univ. of California, San Francisco); Eden, Uri (Boston Univ.); Yousefi, Ali\* (Massachusetts General Hospital and Harvard Medical School)

09:00-09:15 SaAT7.5  
**Continuous Phase Estimation for Phase-Locked Neural Stimulation using an Autoregressive Model for Signal Prediction**  
 Blackwood, Ethan\* (Massachusetts General Hospital); Lo, Meng-chen (Massachusetts General Hospital); Widge, Alik (Massachusetts General Hospital)

09:15-09:30 SaAT7.6  
**State Space Oscillator Models for Neural Data Analysis**  
 Beck, Amanda M.\* (MIT); Stephen, Emily (MIT); Purdon, Patrick L (Massachusetts General Hospital)

SaAT8: 08:00-09:30 Meeting Room 318A  
**Neural Stimulation (IV) (Theme 6) (Oral Session)**

08:00-08:15 SaAT8.1  
**A Neuroprotective Brain Stimulation for Vulnerable Cerebellar Purkinje Cell after Ischemic Stroke: A Study with Low-Intensity Focused Ultrasound**  
 Baek, Hongchae (Korea Institute of Science and Tech.); Sariev, Anvar (KIST); Kim, Min-Ju (Korea Institute of Science and Tech.); Lee, Hojin (Korea Institute of Science and Tech.); Kim, Jinhyun (Korea Institute of Science and Tech.); Kim, Hyungmin\* (Korea Institute of Science and Tech.)

08:15-08:30 SaAT8.2  
**Characterization of Stimulation Artifact Behavior in Simultaneous Electroencephalography Grid Stimulation and Recording**  
 Lim, Jeffrey\* (Univ. of California, Irvine); Wang, Po T. (Univ. of California Irvine); Karimi-Bidhendi, Alireza (Univ. of California Irvine); Arasteh, Omid M. (Univ. of California, Irvine); Shaw, Susan J. (Univ. of Southern California); Armacost, Michelle (Rancho Los Amigos National Rehabilitation Center); Gong, Hui (Univ. of Southern California); Liu, Charles Y. (Keck Hospital of the Univ. of Southern California); Do, An H. (Univ. of California Irvine); Heydari, Payam (Univ. of California Irvine); Nenadic, Zoran (Univ. of California Irvine)

08:30-08:45 SaAT8.3  
**Simulations of a Birdcage Coil B1+ Field on a Human Body Model for Designing a 3T Multichannel TMS/MRI Head Coil Array**  
 Navarro de Lara, Lucia Isabel\* (Martinos Center - MGH); Golestanirad, Laleh (Dept. of NeuroSciences, Cleveland Clinic, Cleveland); Makarov, Sergey (Electrical and Computer Engineering, Worcester Polytechnic Institute); Stockmann, Jason P. (Athinoula A. Martinos Center for BioMedical Imaging, Dept. of Radiology, Massachusetts General Hospital); Wald, Lawrence L. (A. A. Martinos Center for BioMedical Imaging, Dept. of Radiology); Nummenmaa, Aapo (Massachusetts General Hospital)

08:45-09:00 SaAT8.4  
**Characterizing Cortical Responses Evoked by Electrical Stimulation of the Mouse Infraorbital Nerve**  
 Suminski, Aaron\* (University of Wisconsin-Madison); Ness, Jared P. (University of Wisconsin-Madison); Zeng, Weifeng (University of Wisconsin-Madison); Novello, Joseph (University of Wisconsin-Madison); Brodnick, Sarah (University of Wisconsin-Madison); Pisaniello, Jane (University of Wisconsin-Madison); Dingle, Aaron (University of Wisconsin-Madison); Poore, Samuel (University of Wisconsin-Madison); Lake, Wendell B. (University of Wisconsin-Madison); Williams, Justin (University of Wisconsin)

09:00-09:15 SaAT8.5  
**PEDOT: PSS Electrodes for Acute Experimental Evaluation of Vagus Nerve Stimulation on Rodents**  
 Kergoat, Loig (INS, Institut de NeuroSciences des Systèmes, Inserm, Aix Marseille Université); Dieuset, Gabriel (LTSI, Inserm UMR 1099, Rennes, France; University Rennes 1, France); Le Rolle, Virginie (University of Rennes 1); Malliaras, George (Ecole Nationale Supérieure des Mines, CMP-EMSE, MOC); Martin, Benoit (INSERM; Université de Rennes 1; LTSI); Bernard, Christophe (The Laboratoire de Neurophysiologie et Neuropsychologie); Hernández, Alfredo I\* (University of Rennes 1 and INSERM U1099)

09:15-09:30 SaAT8.6  
**Transcranial Direct Current Stimulation of the Leg Motor Area – Is it Partly Somatosensory?**  
 Abadi, Zeynab Rezaee Hassan (University at Buffalo SUNY); Dutta, Anirban\* (University at Buffalo SUNY)

SaAT9: 08:00-09:30 Meeting Room 318B  
**Neural Networks and Support Vector Machines for Biosignal Processing (Theme 1) (Oral Session)**  
 Chair: Boric-Lubecke, Olga (*University of Hawaii Manoa*)

08:00-08:15 SaAT9.1  
**Personalised Meal Eating Behaviour Analysis via Semi-Supervised Learning**  
 Papadopoulos, Alexandros (*Aristotle University of Thessaloniki*); Kyritsis, Konstantinos (*Aristotle University of Thessaloniki*); Sarafis, Ioannis (*Aristotle University of Thessaloniki*); Delopoulos, Anastasios\* (*Aristotle University of Thessaloniki*)

08:15-08:30 SaAT9.2  
**Brain Monitoring of Sedation in the Intensive Care Unit using a Recurrent Neural Network**  
 Sun, Haoqi (*Massachusetts General Hospital*); Nagaraj, Sunil Belur (*Massachusetts General Hospital*); Akeju, Oluwaseun (*Massachusetts General Hospital*); Purdon, Patrick L. (*Massachusetts General Hospital*); Westover, Brandon\* (*Massachusetts General Hospital*); Westover, Brandon (*MGH / Harvard Medical School*)

08:30-08:45 SaAT9.3  
**Deep Unsupervised Representation Learning for Abnormal Heart Sound Classification**  
 Amiriparian, Shahin\* (*University of Augsburg*); Schmitt, Maximilian (*University of Passau*); Cummins, Nicholas (*University of Augsburg*); Qian, Kun (*Technical University of Munich*); Dong, Fengquan (*Shenzhen University General Hospital*); Schuller, Bjoern (*Imperial College London*)

08:45-09:00 SaAT9.4  
**Classifying Treated vs. Untreated MDD Adolescents from Anatomical Connectivity using Nonlinear SVM**  
 Chu, Shu-Hsien\* (*University of Minnesota*); Lenglet, Christophe (*University of Minnesota*); Westlund Schreiner, Melinda (*University of Minnesota*); Klimes-Dougan, Bonnie (*University of Minnesota*); Cullen, Kathryn R. (*University of Minnesota*); Parhi, Keshab (*University of Minnesota*)

09:00-09:15 SaAT9.5  
**Convolutional Neural Networks for Pathological Voice Detection**  
 Wu, Huiyi\* (*University of Strathclyde*); Soraghan, John J. (*University of Strathclyde*); Lowit, Anja (*Strathclyde University*); Di Caterina, Gaetano (*University of Strathclyde*)

09:15-09:30 SaAT9.6  
**Validating an Algorithm for Automatic Scoring of Inspiratory Flow Limitation within a Range of Recording Settings**  
 Camassa, Alessandra\* (*Institut d'Investigacions Biomèdiques August Pi Sunyer (IDIBAPS), Barcelona*); Franciosi, Angelo (*INT*); Sands, Scott Aaron (*Brigham and Women's Hospital and Harvard Medical School*); Zhi, Ying Xuan (*University of Toronto*); Yadollahi, Azadeh (*University of Toronto*); Bianchi, Anna Maria (*Politecnico di Milano*); Wellman, David Andrew (*Harvard Medical School*); Redline, Susan (*Rainbow Babies and Children's Hospital*); Azarbarzin, Ali (*The University of Manitoba*); Mariani, Sara (*Brigham and Women's Hospital, Harvard Medical School*)

SaAT10: 08:00-09:30 Meeting Room 319A  
**Ultrasound Imaging – Photoacoustic / Optoacoustic / Thermoacoustic (Theme 2) (Oral Session)**

08:00-08:15 SaAT10.1  
**Optical Spectroscopic Ultrasound Displacement Imaging**  
 Duan, Tingyang (*ShanghaiTech University*); Lan, Hengrong (*ShanghaiTech University*); Zhong, Hongtao (*ShanghaiTech University*); Zhou, Meng (*ShanghaiTech University*); Zhang, Ruochong (*Nanyang Technological University*); Gao, Fei\* (*ShanghaiTech University*)

08:15-08:30 SaAT10.2  
**Wavelet De-Noising Method with Adaptive Threshold Selection for Photoacoustic Tomography**  
 Zhou, Meng (*ShanghaiTech Univ.*); Xia, Haibo (*Chinese Academy of Sciences*); Lan, Hengrong (*ShanghaiTech Univ.*); Duan, Tingyang (*ShanghaiTech Univ.*); Zhong, Hongtao (*ShanghaiTech Univ.*); Gao, Fei\* (*ShanghaiTech Univ.*)

08:30-08:45 SaAT10.3  
**Optical Resolution Photoacoustic Microscopy with Fast Laser Scanning and Fixed Photoacoustic Detector**  
 Ishikawa, Kodai (*Tohoku Univ.*); Shintate, Ryo (*Tohoku Univ.*); Nagaoka, Ryo (*Tohoku Univ.*); Saijo, Yoshifumi\* (*Tohoku Univ.*)

08:45-09:00 SaAT10.4  
**Hybrid Multi-Wavelength Photoacoustic Imaging**  
 Duan, Tingyang (*ShanghaiTech University*); Lan, Hengrong (*ShanghaiTech University*); Zhong, Hongtao (*ShanghaiTech University*); Zhou, Meng (*ShanghaiTech University*); Zhang, Ruochong (*Nanyang Technological University*); Gao, Fei\* (*ShanghaiTech University*)

09:00-09:15 SaAT10.5  
**Pattern-Learning-Based Noise Elimination Algorithm in Photoacoustic Sensing and Imaging**  
 Tu, Zhi (*ShanghaiTech University*); Wang, Boshi (*ShanghaiTech University*); Duan, Tingyang (*ShanghaiTech University*); Gao, Fei\* (*ShanghaiTech University*)

SaAT11: 08:00-09:30 Meeting Room 319B  
**Neural Signal Processing (III) (Theme 6) (Oral Session)**

08:00-08:15 SaAT11.1  
**Individual Working Memory Capacity Traced from Multivariate Pattern Classification of EEG Spectral Power**  
 Astrand, Elaine\* (*Mälardalen University*)

08:15-08:30 SaAT11.2  
**Decoding Synergy-Based Hand Movements using Electroencephalography**  
 Patel, Vrajeshri (*Stevens Institute of Technology*); Burns, Martin (*Stevens Institute of Technology*); Pei, Dingyi (*Stevens Institute of Technology*); Vinjamuri, Ramana\* (*Stevens Institute of Technology*)

08:30-08:45 SaAT11.3  
**Estimation of Finger Joint Angle based on Neural Drive Extracted from High-Density Electromyography**  
 Dai, Chenyun\* (*University of North Carolina at Chapel Hill*); Cao, Yizhou (*University of North Carolina at Chapel Hill*); Hu, Xiaogang (*University of North Carolina-Chapel Hill*)

08:45-09:00 SaAT11.4  
**Semi-Simulation Experiments for Quantifying the Performance of SSVEP-Based BCI after Reducing Artifacts from Trapezius Muscles**  
 Kanoga, Suguru\* (*National Institute of Advanced Industrial Science and Technology (AIST)*); Nakanishi, Masaki (*University of California San Diego*); Murai, Akihiko (*National Institute of Advanced Industrial Science and Technology (AIST)*); Tada, Mitsunori (*National Institute of Advanced Industrial Science and Technology*); Kanemura, Atsunori (*National Institute of Advanced Industrial Science and Technology (AIST)*)

SaAT12: 08:00-09:30 Meeting Room 321A  
**Cardiac Electrophysiology (Theme 5) (Oral Session)**

08:00-08:15 SaAT12.1  
**A Machine Learning Approach to Reconstruction of Heart Surface Potentials from Body Surface Potentials**  
 Malik, Avinash\* (*University of Auckland*); Trew, Mark L. (*University of Auckland*); Peng, Tommy (*University of Auckland*)



08:15-08:30 SaAT12.2  
**Follow the Light – From Low-Energy Defibrillation to Multi-Site Photostimulation**  
 Diaz-Maue, Laura (*Max Planck Institute for Dynamics and Self-organization*); Schwaerzle, Michael (*Univ. of Freiburg*); Ruther, Patrick (*Univ. of Freiburg*); Luther, Stefan (*Max Planck Institute for Dynamics and Self-Organization*); Richter, Claudia\* (*Max Planck Institute for Dynamics and Self-Organization*)

08:30-08:45 SaAT12.3  
**Invasive Optical Pacing in Perfused, Optogenetically Modified Mouse Heart using Stiff Multi-LED Optical Probes**  
 Ayub, Suleman\* (*IMTEK, Univ. of Freiburg*); Ruther, Patrick (*Univ. of Freiburg*); Paul, Oliver (*Univ. of Freiburg*); Kohl, Peter (*Univ. of Oxford*); Johnston, Callum Michael (*Univ. of Auckland*)

08:45-09:00 SaAT12.4  
**Cardiac Conduction Velocity Estimation during Wavefront Collision**  
 Shariat, Mohammad Hassan\* (*Queen's University, Kingston, Ontario, Canada*); Redfeam, Damian P (*Queen's University*)

SaAT13: 08:00-09:30 Meeting Room 321B  
**Cardiovascular Signal Processing (Theme 5)** (Oral Session)

08:00-08:15 SaAT13.1  
**The Accuracy of Atrial Fibrillation Detection from Wrist Photoplethysmography. A Study on Post-Operative Patients**  
 Tarniceriu, Adrian\* (*PulseOn SA*); Harju, Jarkko (*Tampered University Hospital*); Rezaeiyousefi, Zeinab (*PulseOn Ltd.*); Vehkaoja, Antti (*Tampere University of Technology*); Parak, Jakub (*Tampere University of Technology*); Yli-Hankala, Arvi (*University of Tampere*); Korhonen, Ilkka (*Tampere University of Technology*)

08:15-08:30 SaAT13.2  
**Short-Term Model-Based Multiscale Complexity Analysis of Cardiac Control Provides Complementary Information to Single-Scale Approaches**  
 Porta, Alberto\* (*Univ. degli Studi di Milano*); De Maria, Beatrice (*IRCCS Fondazione Salvatore Maugeri, Milano*); Cairo, Beatrice (*Univ. degli Studi di Milano*); Vaini, Emanuele (*IRCCS PoliClinico San Donato*); Bari, Vlasta (*IRCCS PoliClinico San Donato*)

08:30-08:45 SaAT13.3  
**Automatic T-Wave Alternans Identification in Indirect and Direct Fetal Electrocardiography**  
 Marcantoni, Ilaria (*Univ. Politecnica delle Marche*); Sbröllini, Agnese (*Univ. Politecnica delle Marche*); Burattini, Luca (*Univ. Politecnica delle Marche*); Morettini, Micaela (*Univ. Politecnica delle Marche*); Fioretti, Sandro (*Univ. Politecnica delle Marche*); Burattini, Laura\* (*Univ. Politecnica delle Marche*)

08:45-09:00 SaAT13.4  
**Phase Relation between Depolarization and Repolarization Alternans in ECG**  
 Alaei Varnoosfaderani, Sahar\* (*University of Kentucky*); Wasemiller, David (*University of Kentucky*); Wang, Siqi (*University of Kentucky*); Anaya, Paul (*University of Kentucky*); Patwardhan, Abhijit (*University of Kentucky*)

09:00-09:15 SaAT13.5  
**Respiratory Sinus Arrhythmia Quantified with Linear and Non-Linear Techniques to Classify Dilated and Ischemic Cardiomyopathy**  
 Giraldo, Beatriz\* (*Universitat Politècnica de Catalunya*); Pericas, Maria Francisca (*Technical University of Catalonia*); Schroeder, Rico (*University of Applied Sciences Jena*); Voss, Andreas (*University of Applied Sciences Jena*)

09:15-09:30 SaAT13.6  
**A Novel Artifact Reconstruction Method Applied to Blood Pressure Signals**  
 Giraldo, Beatriz\* (*Universitat Politècnica de Catalunya*); Rodriguez, Javier (*Institut de Bioenginyeria de Catalunya (IBEC)*)

SaAT14: 08:00-09:30 Meeting Room 322AB  
**Diagnostic Devices and Physiological Monitoring (I) (Theme 9)** (Oral Session)

08:00-08:15 SaAT14.1  
**Design of a Microbiota Sampling Capsule using 3D-Printed Bistable Mechanism**  
 Ben Salem, Mouna (*Univ. de Montpellier*); Aiche, Guillaume (*Univ. de Montpellier*); Rubbert, Lennart (*INSA Strasbourg*); Renaud, Pierre\* (*INSA Strasbourg*); Haddab, Yassine (*Univ. de Montpellier*)

08:15-08:30 SaAT14.2  
**Remote Estimation of Video-Based Vital Signs in Emotion Invocation Studies**  
 Kwasniewska, Alicja\* (*Gdansk Univ. of Technology*); Ruminski, Jacek (*Gdansk Univ. of Technology*); Szankin, Maciej (*Intel Corp.*); Czuszyński, Krzysztof (*Gdansk Univ. of Technology*)

08:30-08:45 SaAT14.3  
**Daytime Sleepiness Affects Gait Auditory Synchronization Ability**  
 Umemura, Guilherme Silva (*University of São Paulo*); Pinho, João Pedro (*University of São Paulo*); Forner-Cordero, Arturo\* (*Escola Politécnica da Universidade de São Paulo*)

08:45-09:00 SaAT14.4  
**Neonatal EEG Interpretation and Decision Support Framework for Mobile Platforms**  
 O'Sullivan, Mark\* (*University College Cork*); Gómez Quintana, Sergi (*UCC*); O'Shea, Alison (*University College Cork*); Salgado, Edu (*UCC*); Huilca, Kevin (*UCC*); Mathieson, Sean (*University College Cork*); Boylan, Geraldine (*University College Cork*); Popovici, Emanuel (*University College Cork*); Temko, Andriy (*University College Cork*)

09:00-09:15 SaAT14.5  
**Development and Pilot Testing of a Novel Electromechanical Device to Measure Wrist Rigidity in Parkinson's Disease**  
 Zito, Giuseppe Angelo (*Univ. Hospital Inselspital*); Gerber, Stephan Moreno\* (*Univ. of Bern*); Urwyler, Prabitha (*Univ. of Bern, ARTORG*); Shamsollahi, Mohammad J (*Univ. of Bern, ARTORG Center for BioMedical Engineering Research, Gerontechnology & Rehabilitation*); Pal, Natassja (*Clinical NeuroSciences, Centre Hospitalier Universitaire Vaudois, Lausanne*); Benninger, David (*Clinical NeuroSciences, Centre Hospitalier Universitaire Vaudois, Lausanne*); Nef, Tobias (*Gerontechnology and Rehabilitation, ARTORG Center for Bioemical Engineering Research, Univ. of Bern, Switzerland*)

09:15-09:30 SaAT14.6  
**Manometric Recordings Bring Out Post-Stimulus Refractory States in the Anal Canal in Neonates**  
 López, Manuel (*Virgen del Rocío Infants' Hospital*); Ribas, Juan (*Dept. of Medical Physiology and Biophysics*); Barriga-Rivera, Alejandro\* (*University Pablo de Olavide*)

SaAT15: 08:00-09:30 Meeting Room 323A  
**Computational Modeling and Treatment Planning (Theme 9)** (Oral Session)  
**Chair:** Dokos, Socrates (*University of New South Wales*)  
**Co-Chair:** Holmes, David (*Mayo Clinic*)

08:00-08:15 SaAT15.1  
**Image-Based Computational Fluid Dynamic Analysis for Surgical Planning of Sequential Grafts in Coronary Artery Bypass Grafting**  
 Kolli, Kranthi\* (*Weill Cornell Medical College*); Min, James (*Weill Cornell Medical College*)

08:15-08:30	SaAT15.2	09:00-09:15	SaAT16.5
<b>Estimating the Intensity and Anisotropy of Tumor Treating Fields using Singular Value Decomposition. Towards a More Comprehensive Estimation of Anti-Tumor Efficacy</b> Korshoej, Anders R.* ( <i>Aarhus University Hospital</i> ); Thielscher, Axel ( <i>Copenhagen University Hospital Hvidovre, Denmark &amp; BioMedical Engineering Section</i> )		<b>Using Machine Learning Algorithms to Enhance the Management of Suicide Ideation</b> Colic, Sinisa* ( <i>University of Toronto</i> ); Richardson, Don ( <i>Western University</i> ); Reilly, James ( <i>McMaster University</i> ); Hasey, Gary ( <i>McMaster University</i> )	
08:30-08:45	SaAT15.3	09:15-09:30	SaAT16.6
<b>Effective Diffusion and Tortuosity in Brain White Matter</b> Vidotto, Marco* ( <i>Politecnico di Milano</i> ); Dini, Daniele ( <i>Imperial College London</i> ); De Momi, Elena ( <i>Politecnico di Milano</i> )		<b>Undersampling and Bagging of Decision Trees in the Analysis of Cardiorespiratory Behavior for the Prediction of Extubation Readiness in Extremely Preterm Infants</b> Kanbar, Lara* ( <i>McGill University</i> ); Onu, Charles Chijioke ( <i>McGill University</i> ); Shalish, Wissam ( <i>McGill University</i> ); Brown, Karen ( <i>McGill University</i> ); Sant'Anna, Guilherme Mendes ( <i>McGill University</i> ); Precup, Doina ( <i>McGill University</i> ); Kearney, Robert Edward ( <i>McGill University</i> )	
08:45-09:00	SaAT15.4	<div>SaAT17: 08:00-09:30 Meeting Room 323C</div> <div><b>Wearable Technology (Theme 7) (Oral Session)</b></div>	
<b>Long-Acting Insulin in Diabetes Therapy: In Silico Clinical Trials with the UVA/Padova Type 1 Diabetes Simulator</b> Visentin, Roberto* ( <i>Univ. of Padova</i> ); Schiavon, Michele ( <i>Univ. of Padova</i> ); Giegerich, Clemens ( <i>Sanofi-Aventis Deutschland GmbH, Translational Informatics/Translational Medicine and Early Development, Frankfurt, Germany</i> ); Klabunde, Thomas ( <i>Sanofi-Aventis Deutschland GmbH, R&amp;D LGCR/Structure, Design &amp; Informatics, Frankfurt, Germany</i> ); Dalla Man, Chiara ( <i>Univ. of Padova</i> ); Cobelli, Claudio ( <i>Univ. of Padova</i> )		08:00-08:15	SaAT17.1
09:00-09:15	SaAT15.5	<b>Medhere: A Smartwatch-Based Medication Adherence Monitoring System using Machine Learning and Distributed Computing</b> Woodbridge, Diane* ( <i>Univ. of San Francisco</i> ); Ma, Jinxin ( <i>Univ. of San Francisco</i> ); Ovalle, Anaelia ( <i>Univ. of San Francisco</i> )	
<b>Automatic Screening to Detect 'At Risk' Child Speech Samples using a Clinical Group Verification Framework</b> Kothalkar, Prasanna ( <i>University of Texas at Dallas</i> ); Rudolph, Johanna ( <i>University of Texas at Dallas</i> ); Dollaghan, Christine ( <i>University of Texas at Dallas</i> ); McGlothlin, Jenny ( <i>University of Texas at Dallas</i> ); Campbell, Thomas ( <i>UTD Callier Center</i> ); Hansen, John H.L.* ( <i>University of Texas at Dallas</i> )		08:15-08:30	SaAT17.2
09:15-09:30	SaAT15.6	<b>Monitoring the Effect of Contact Pressure on Bioimpedance Measurements</b> Ruiz-Vargas, Albert* ( <i>Flinders University</i> ); Ivorra, Antoni ( <i>Universitat Pompeu Fabra</i> ); Arkwright, John ( <i>Flinders University</i> )	
<b>Mapping ADL Motion Capture Data to BLUE SABINO Exoskeleton Kinematics and Dynamics</b> Bitikofer, Christopher* ( <i>University of Idaho</i> ); Wolbrecht, Eric ( <i>University of Idaho</i> ); Perry, Joel C. ( <i>University of Idaho</i> )		08:30-08:45	SaAT17.3
<div>SaAT16: 08:00-09:30 Meeting Room 323B</div> <div><b>General and Theoretical Informatics – Machine Learning (I) (Theme 10) (Oral Session)</b></div> <div><b>Chair:</b> Colbaugh, Richard (<i>Volvo Global</i>)</div> <div><b>Co-Chair:</b> Glass, Kristin (<i>Volvo Global</i>)</div>		<b>Exploring the Feasibility of EMG based Interaction for Assessing Cognitive Capacity in Virtual Reality</b> Wirth, Markus* ( <i>Friedrich Alexander Univ. Erlangen-Nuremberg</i> ); Gradl, Stefan ( <i>Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU)</i> ); Poimann, Dino ( <i>Institute of Sport Science and Sport, Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU)</i> ); Richer, Robert ( <i>Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Germany</i> ); Ottmann, Jenny ( <i>Machine Learning and Data Analytics Lab, Dept. of Computer Science, Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU)</i> ); Eskofier, Bjoern M ( <i>Friedrich-Alexander-Universität Erlangen-Nürnberg</i> )	
08:00-08:15	SaAT16.1	08:45-09:00	SaAT17.4
<b>A New Fully Automated Random-Forest Algorithm for Sleep Staging</b> Klok, Aske Bluhme* ( <i>Technical Univ. of Denmark</i> ); Edin, Joakim ( <i>Technical Univ. of Denmark</i> ); Cesari, Matteo ( <i>Technical Univ. of Denmark</i> ); Olesen, Alexander Neergaard ( <i>Technical Univ. of Denmark</i> ); Jennum, Poul ( <i>Univ. of Copenhagen, Denmark</i> ); Sorensen, Helge B D ( <i>Technical Univ. of Denmark</i> )		<b>Performance of Conformable, Dry EEG Sensors</b> Bradford, J. Cortney* ( <i>U.S. Army Research Lab</i> ); Burke, Benjamin ( <i>U.S. Army Research Lab</i> ); Nguyen, Christina ( <i>U.S. Army Research Lab</i> ); Slipher, Geoffrey A. ( <i>U.S. Army Research Lab</i> ); Mrozek, Randy ( <i>U.S. Army Research Lab</i> ); Hairston, W. David ( <i>U.S. Army Research Lab</i> )	
08:15-08:30	SaAT16.2	09:00-09:15	SaAT17.5
<b>Early Identification of Patentable Medical Innovations</b> Colbaugh, Richard ( <i>Volvo Global</i> ); Glass, Kristin* ( <i>Volvo Global</i> )		<b>Feasibility of Noninvasive Blood Pressure Measurement using a Chest-Worn Patch Sensor</b> Selvaraj, Nandakumar* ( <i>VitalConnect, Inc.</i> ); Reddivari, Hithesh ( <i>Qualcomm Technologies Inc</i> )	
08:30-08:45	SaAT16.3	09:15-09:30	SaAT17.6
<b>A Deep Deterministic Policy Gradient Approach to Medication Dosing and Surveillance in the ICU</b> Lin, Rongmei* ( <i>1990</i> ); Ghassemi, Mohammad ( <i>Massachusetts Institute of Technology</i> ); Nemati, Shamim ( <i>Emory University School of Medicine</i> )		<b>Signal Quality and Electrode-Skin Impedance Evaluation in the Context of Wearable Electroencephalographic Systems</b> Zhao, Zhichun ( <i>Chengdu Univ. of Technology, Chengdu</i> ); Ivanov, Kamen ( <i>Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, China</i> ); Lubich, Ludwig ( <i>Technical Univ. of Sofia</i> ); Omisore, Olatunji Mumini* ( <i>Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences</i> ); Mei, Zhanyong ( <i>Shenzhen Institutes of Advanced Technology</i> ); Fu, Nan ( <i>Shenzhen Institutes of Advanced Technology, Shenzhen, China</i> ); Chen, Jinying ( <i>Chengdu Univ. of Technology</i> ); Wang, Lei ( <i>Shenzhen Institutes of Advanced Technology</i> )	
08:45-09:00	SaAT16.4		
<b>Prediction of ICU Readmissions using Data at Patient Discharge</b> Pakbin, Arash* ( <i>Texas A&amp;M University</i> ); Rafi, Parvez ( <i>Texas A&amp;M University</i> ); Hurley, Nate ( <i>Texas A&amp;M University</i> ); Schulz, Wade ( <i>Yale University</i> ); Krumholz, Harlan ( <i>Yale University School of Medicine</i> ); Mortazavi, Bobak ( <i>Texas A&amp;M University</i> )			

SaAT18: 08:00-09:30 Meeting Room 324  
**Point of Care – Detection and Monitoring (Theme 12)** (Oral Session)  
**Chair:** Lash, Tiffani (*National Institutes of Health, NIBIB*)

08:00-08:15 SaAT18.1  
**Smartphone-Based Compression-Induced Scope with Temperature Sensor for Inflammatory Breast Cancer Screening**  
 Saleheen, Firdous (*Temple University*); Goldstein, Jesse (*Temple University*); Rajan, Reshma (*Temple University*); Caroline, Dina (*Temple University Hospital*); Pascarella, Suzanne (*Temple University Hospital*); Won, Chang-Hee\* (*Temple University*)

08:15-08:30 SaAT18.2  
**Estimation of Spherical Refractive Errors using Virtual Reality Headset**  
 Goyal, Ashish\* (*Samsung Research Institute, Bangalore, Karnataka*); Bopardikar, Ajit (*Samsung Research India, Bangalore, Karnataka*); Tiwari, Vijay Narayan (*Samsung Research India, Bangalore*)

08:30-08:45 SaAT18.3  
**NOS.E: A New Fast Response Electronic Nose Health Monitoring System**  
 Zhang, Wentian (*University of Technology Sydney*); Taoping, Liu (*University of Technology Sydney*); Zhang, Miao (*Beijing Institute of Technology*); Zhang, Yi (*University of Electronic Science and Technology of China*); Li, Huiqi (*Beijing Institute of Technology*); Maiken, Ueland (*University of Technology Sydney*); Shari, Forbes (*University of Technology Sydney*); Wang, Rosalind (*CSIRO*); Su, Steven Weidong\* (*University of Technology, Sydney*)

08:45-09:00 SaAT18.4  
**On the Effective Differentiation and Monitoring of Variable Degrees of Hyperbilirubinemia Severity through Noninvasive Screening Protocols**  
 Baranoski, Gladimir Valerio Guimaraes\* (*Univ. of Waterloo*); Chen, Tenn Francis (*Univ. of Waterloo*); Varsa, Petri (*Univ. of Waterloo*)

09:00-09:15 SaAT18.5  
**EmoSense: Automatically Sensing Emotions from Speech by Multi-Way Classification**  
 Vempada, Ramu Reddy (*TCS Research & Innovation Lab*); Viraraghavan, Venkata Subramanian\* (*Tata Consultancy Services Ltd.*)

09:15-09:30 SaAT18.6  
**A Data-Driven Human Activity Classification Method for an Intelligent Hospital Bed**  
 Lu, Limin (*Zhejiang University*); Zhao, Chunhui (*Zhejiang University*); Fu, Yongji\* (*Hill-Rom*)

SaAT19: 08:00-09:30 Meeting Room 325A  
**Sensor Informatics – Sensors and Sensor Systems (Theme 10)** (Oral Session)

08:00-08:15 SaAT19.1  
**Change Detection of Sleeping Conditions based on Multipoint Ambient Sensing of Comforter on Bed**  
 Umetani, Tomohiro\* (*Konan Univ.*); Ishii, Mayuko (*Konan Univ.*); Tamura, Yuichi (*Konan Univ.*); Saiwaki, Naoki (*Nara Women's Univ.*); Yokoyama, Kiyoko (*Nagoya City Univ.*)

08:15-08:30 SaAT19.2  
**InstaBP: Cuff Less Blood Pressure Monitoring on Smartphone using Single PPG Sensor**  
 Dey, Jishnu\* (*Samsung R&D Institute India, Bangalore*); Gaurav, Aman (*Samsung Research Institute, Bangalore*); Tiwari, Vijay Narayan (*Samsung Research India, Bangalore*)

08:30-08:45 SaAT19.3  
**Vision-Based Bed Detection for Hospital Patient Monitoring System**  
 Inoue, Madoka\* (*Aiphone Co., Ltd.*); Taguchi, Ryo (*Nagoya Institute of Technology*); Umezaki, Taizo (*Nagoya Institute of Technology*)

08:45-09:00 SaAT19.4  
**Thermal Camera based Physiological Monitoring with an Assistive Robot**  
 Cosar, Serhan (*Univ. of Lincoln*); Yan, Zhi (*Univ. of Technology of Belfort-Montbéliard*); Zhao, Feng (*Liverpool John Moores Univ.*); Lambrou, Tryphon (*Univ. of Lincoln*); Yue, Shigang (*Univ. of Lincoln*); Bellotto, Nicola\* (*Univ. of Lincoln*)

09:00-09:15 SaAT19.5  
**Classification of sEMG Signals for the Detection of Vocal Fatigue based on VFI Scores**  
 Gao, Yixiang\* (*University of Missouri - Columbia*); Dietrich, Maria (*University of Missouri*); Melinda, Pfeiffer (*University of Missouri - Columbia*); DeSouza, G. N. (*University of Missouri - Columbia*)

09:15-09:30 SaAT19.6  
**Deniosing Autoencoder-Based Modification of RRI Data with Premature Ventricular Contraction for Precise Heart Rate Variability Analysis**  
 Miyatani, Shota (*Kyoto University*); Fujiwara, Koichi\* (*Kyoto University*); Kano, Manabu (*Kyoto University*)

SaAT20: 08:00-09:30 Meeting Room 325B  
**Biological Networks (Theme 4)** (Oral Session)

08:00-08:15 SaAT20.1  
**Spatial Patterning from an Integrated Wnt/ $\beta$ -Catenin and Notch/Delta Gene Circuit**  
 Mines, Robert Carl\* (*Duke University*); Dohlman, Anders (*Dept. of BioMedical Engineering, Duke University*); Lim, Sze-Xian (*Dept. of BioMedical Engineering, Duke University*); Tung, Kuei-Ling (*Dept. of Biological and Environmental Engineering, Cornell University*); Wang, Ergang (*Dept. of BioMedical Engineering, Duke University*); Shen, Xiling (*Cornell University*)

08:15-08:30 SaAT20.2  
**Stochastic Modeling of the Co-Regulation between Early and E8 Promoters in Human Papillomavirus**  
 Giarretta, Alberto\* (*Univ. of Padova, Dept. of Information Engineering*)

08:30-08:45 SaAT20.3  
**Automated Extension of Cell Signaling Models with Genetic Algorithm**  
 Sayed, Khaled\* (*University of Pittsburgh*); Bocan, Kara (*University of Pittsburgh*); Miskov-Zivanov, Natasa (*University of Pittsburgh*)

08:45-09:00 SaAT20.4  
**Identifying Progressive Gene Network Perturbation from Single-Cell RNA-Seq Data**  
 Mukherjee, Sumit (*Univ. of Washington*); Carignano, Alberto\* (*Univ. of Washington*); Seelig, Georg (*Univ. of Washington*); Lee, Su-In (*Dept. of Computer Science & Engineering*)

09:00-09:15 SaAT20.5  
**Improving the Detection of Protein Complexes by Predicting Novel Missing Interactome Links in the Protein-Protein Interaction Network**  
 Zaki, Nazar\* (*United Arab Emirates Univ.*); Alashwal, Hany (*UAU*)

09:15-09:30 SaAT20.6  
**Smart Data Analytics Approach to Model Complex Biochemical Oscillations in Hippocampal Neurons**  
 Miriyala, Srinivas Soumitri (*Indian Institute of Tech. Hyderabad*); Pantula, Priyanka\* (*Indian Institute of Tech., Hyderabad*); Giri, Lopamudra (*Indian Institute of Tech., Hyderabad*); Mitra, Kishalay (*Indian Institute of Tech. Hyderabad*)

SaBT1: 10:00-11:30 Meeting Room 311  
**Neural Interfaces (IV) (Theme 6)** (Oral Session)  
**Chair:** Butera, Robert (*Georgia Institute of Technology*)

10:00-10:15 SaBT1.1  
**In Situ Measurement of Stimulus Induced pH Changes using Thin-Film Embedded IrOx pH Electrodes**  
 Pfau, Jennifer\* (*University of Freiburg, Dept. of Microsystems Engineering IMTEK*); Leal Ordonez, José (*Albert-Ludwigs-University of Freiburg, Dept. of Microsystems Engineering, IMTEK*); Stieglitz, Thomas (*University of Freiburg*)

10:15-10:30 SaBT1.2  
**Investigating Upper Limb Movement Classification on Users with Tetraplegia as a Possible Neuroprosthesis Interface**  
 Fonseca, Lucas\* (*Universidade de Brasília*); Padilha Lanari Bó, Antônio (*Universidade de Brasília*); Guiraud, David (*INRIA*); Navarro, Benjamin (*LIRMM, Montpellier*); Gélis, Anthony (*PROPARA Clinical Center, Montpellier*); Azevedo-Coste, Christine (*INRIA/LIRMM*)

10:30-10:45 SaBT1.3  
**A Novel  $\mu$ CoG Electrode Interface for Comparison of Local and Common Averaged Referenced Signals**  
 Williams, Ashley\* (*Duke University*); Trumpis, Michael (*Duke University*); Bent, Brinnae (*Duke University*); Chiang, Ken Chia-Han (*Duke University*); Viventi, Jonathan (*Duke University*)

10:45-11:00 SaBT1.4  
**In Vitro Reactive-Accelerated-Aging (RAA) Assessment of Tissue-Engineered Electronic Nerve Interfaces (TEENI)**  
 Kuliasha, Cary (*Univ. of Florida*); Judy, Jack\* (*Univ. of Florida*)

11:00-11:15 SaBT1.5  
**On-Chip Detection of Single Vesicle Release from Neuroblastoma Cells using Monolithic CMOS Bioelectronics**  
 White, Kevin A. (*University of Central Florida*); Mulberry, Geoffrey (*University of Central Florida*); Sugaya, Kiminobu (*University of Central Florida*); Kim, Brian N.\* (*University of Central Florida*)

11:15-11:30 SaBT1.6  
**Carbon Fiber Electrodes for in Vivo Spinal Cord Recordings**  
 Cetinkaya, Esma (*New Jersey Institute of Technology*); Gok, Sinan (*New Jersey Institute of Technology*); Sahin, Mesut\* (*New Jersey Institute of Technology*)

SaBT2: 10:00-11:30 Meeting Room 312  
**Signal Processing and Classification for BCIs and Motor Imagery (Theme 1)** (Oral Session)  
**Chair:** Harrer, Stefan (*IBM Research*)  
**Co-Chair:** Song, Dong (*University of Southern California*)

10:00-10:15 SaBT2.1  
**A Modified Common Spatial Pattern Algorithm Customized for Feature Dimensionality Reduction in fNIRS-Based BCIs**  
 Jiang, Xinyu\* (*Fudan University*); Gu, Xiao (*Fudan University*); Mei, Zhenning (*Fudan University*); Ren, Haoran (*Fudan University*); Chen, Wei (*Fudan University*)

10:15-10:30 SaBT2.2  
**Realization of Direction Selective Motor Learning in the Artificial Cerebellum: Simulation on the Vestibuloocular Reflex Adaptation**  
 Takatori, Shogo (*Chubu University*); Inagaki, Keiichiro\* (*Chubu University*); Hirata, Yutaka (*Chubu University, College of Eng*)

10:30-10:45 SaBT2.3  
**A Randomised Ensemble Learning Approach for Multiclass Motor Imagery Classification using Error Correcting Output Coding**  
 Bera, Sutanu (*Indian Institute of Technology, Kharagpur*); Roy, Rinku (*IIT Kharagpur*); Sikdar, Debdeep (*IIT Kharagpur*); Kar, Aupendu (*Indian Institute of Technology Kharagpur*); Mahadevappa, Manjunatha (*Indian Institute of Technology Kharagpur*); Mukhopadhyay, Rupsha\* (*Indian Institute of Technology, Kharagpur*)

10:45-11:00 SaBT2.4  
**A Deep Convolutional Neural Network based Classification of Multi-Class Motor Imagery with Improved Generalization**  
 Kar, Aupendu (*Indian Institute of Tech. Kharagpur*); Bera, Sutanu (*Indian Institute of Tech., Kharagpur*); Karri, Sri Phani Krishna (*Indian Institute of Tech. Kharagpur*); Mahadevappa, Manjunatha (*Indian Institute of Tech. Kharagpur*); Sheet, Debdoot (*Indian Institute of Tech. Kharagpur*); Ghosh, Sudipta\* (*Indian Institute of Tech., Kharagpur*)

11:00-11:15 SaBT2.5  
**A Robust Low-Cost EEG Motor Imagery-Based Brain-Computer Interface**  
 Yohanandan, Shivanthan\* (*IBM Research*); Kiral-Kornek, Filiz Isabell (*IBM Research Australia*); Tang, Jianbin (*IBM Research Australia*); Mashford, Benjamin Scott (*IBM Research Australia*); Asif, Umar (*IBM*); Harrer, Stefan (*IBM Research*)

11:15-11:30 SaBT2.6  
**Current Source Density Estimates Improve the Discriminability of Scalp-Level Brain Connectivity Features Related to Motor-Imagery Tasks**  
 Rathee, Dheeraj\* (*Ulster University*); Cecotti, Hubert (*California State University Fresno*); Prasad, Girijesh (*University of Ulster*)

SaBT3: 10:00-11:30 Meeting Room 314  
**Image Reconstruction (Theme 2)** (Oral Session)  
**Chair:** Ambrosanio, Michele (*University of Napoli Parthenope*)

10:00-10:15 SaBT3.1  
**Group Sparsity based Sparse-Sampling CT Reconstruction**  
 Bao, Peng (*Sichuan University*); Zhou, Jiliu (*Chengdu University of Information Technology*); Zhang, Yi\* (*Sichuan University*)

10:15-10:30 SaBT3.2  
**Discrete Heat Kernel Smoothing in Irregular Image Domains**  
 Chung, Moo K.\* (*University of Wisconsin-Madison*); Wang, Yanli (*Institute of Applied Physics and Computational Mathematics, Beijing*); Wu, Guorong (*University of North Carolina at Chapel Hill*)

10:30-10:45 SaBT3.3  
**A Novel 3D Connection Algorithm of Mitochondria from ATUM-SEM Stacks based on Segmentation Information in Context**  
 Li, Weifu (*Institute of Automation, Chinese Academy of Sciences*); Liu, Jing (*Institute of Automation, Chinese Academy of Sciences*); Xiao, Chi (*Institute of Automation, Chinese Academy of Sciences*); Deng, Hao (*Institute of Automation, Chinese Academy of Sciences*); Xie, Qiwei\* (*Institute of Automation, Chinese Academy of Sciences*); Han, Hua (*Institute of Automation, Chinese Academy of Sciences*)

10:45-11:00 SaBT3.4  
**Compressive Sensing for Breast Microwave Imaging**  
 Ambrosanio, Michele\* (*Univ. of Napoli Parthenope*); Pascasio, Vito (*Univ. of Napoli Parthenope, Dipartimento di Ingegneria*)

11:00-11:15 SaBT3.5  
**Scanning Acoustic Microscopy Image Super-Resolution using Bilateral Weighted Total Variation Regularization**  
 Khalilian-Gourtani, Amirhossein\* (*New York University*); Wang, Yao (*Polytechnic Institute of New York University*); Mamou, Jonathan (*Riverside Research*)

11:15-11:30 SaBT3.6  
**Low-Dose CT Denoising with Dilated Residual Network**  
 Gholizadeh-Ansari, Maryam (*Ryerson University*); Alirezaie, Javad\* (*Ryerson University, University of Waterloo*); Babyn, Paul (*University of Saskatchewan*)

SaBT4: 10:00-11:30 Meeting Room 315  
**New Sensing Techniques (Theme 7) (Oral Session)**  
**Chair:** Jovanov, Emil (*University of Alabama in Huntsville*)

10:00-10:15 SaBT4.1  
**A Radiating Near-Field 24 GHz Radar Stethoscope**  
 Aumann, Herbert\* (*University of Maine*);  
 Emanetoglu, Nuri (*University of Maine*)

10:15-10:30 SaBT4.2  
**A Model for Waveform Dissimilarities in Dual-Depth Reflectance-PPG**  
 Moco, Andreia\* (*Eindhoven University of Technology*); Stuijk, Sander (*TU Eindhoven*); de Haan, Gerard (*Philips Innovation Group, Philips Research, Eindhoven*); Wang, Ruikang (*Oregon Health & Science University*); Verkruysse, Wim (*Philips Innovation Group, Philips Research, Eindhoven*)

10:30-10:45 SaBT4.3  
**BioEssence: A Wearable Olfactory Display that Monitors Cardio-Respiratory Information to Support Mental Wellbeing**  
 Amores Fernandez, Judith\* (*MIT*); Hernandez, Javier (*Massachusetts Institute of Technology*); Dementyev, Artem (*MIT*); Wang, Xiqing (*MIT Media Lab*); Maes, Pattie (*MIT Media Lab*)

10:45-11:00 SaBT4.4  
**Evaluation of a Visual Localization System for Environment Awareness in Assistive Devices**  
 Rai, Vijeth\* (*University of Washington*);  
 Rombokas, Eric (*University of Washington*)

11:00-11:15 SaBT4.5  
**A New Method to Prevent Unintentional Child Poisoning**  
 Bahar Talukder, Bashir Mohammad Sabquat (*University of Alabama in Huntsville*); Jovanov, Emil\* (*University of Alabama in Huntsville*); Schwebel, David C (*University of Alabama at Birmingham*); Evans, William (*George Washington University*)

11:15-11:30 SaBT4.6  
**Use of Average Vertical Velocity and Difference in Altitude for Improving Automatic Fall Detection from Trunk based Inertial and Barometric Pressure Measurements**  
 Musngi, Magnus Michael (*Simon Fraser University*); Aziz, Omar (*Simon Fraser University*); Zihajehzadeh, Shaghayegh (*Simon Fraser University*); Nazareth, Ginelle Claire (*International Submarine Engineering Ltd.*); Tae, Chul-Gyu (*Bigmotion Technologies*); Park, Edward J.\* (*Simon Fraser University*)

SaBT5: 10:00-11:30 Meeting Room 316A  
**Image Compression and Synthesis (Theme 2) (Oral Session)**

10:00-10:15 SaBT5.1  
**Pseudo CT Estimation using Patch-Based Joint Dictionary Learning**  
 Yang, Xiaofeng\* (*Emory University*)

10:15-10:30 SaBT5.2  
**Data-Driven Synthetic Cerebrovascular Models for Validation of Segmentation Algorithms**  
 Nowak, Michael\* (*Texas A&M University*); Choe, Yoonsuck (*Texas A&M University*)

10:30-10:45 SaBT5.3  
**Lossless Compression of Angiogram Foreground with Visual Quality Preservation of Background**  
 Ahmadi, Mahdi (*Isfahan University of Technology*); Emami, Ali (*Isfahan University of Technology*); Hajabdollahi, Mohsen (*Isfahan University of Technology*); Soroushmehr, S.M.Reza (*University of Michigan, Ann Arbor*); Karimi, Nader (*Isfahan University of Technology*); Samavi, Shadrokh\* (*McMaster University*); Najarian, Kayvan (*University of Michigan - Ann Arbor*)

10:45-11:00 SaBT5.4  
**Significant Dimension Reduction of 3D Brain MRI using 3D Convolutional Autoencoders**  
 Arai, Hayato (*Hosei University*); Chayama, Yusuke (*Hosei University*); Iyatomi, Hitoshi\* (*Hosei University*); Oishi, Kenichi (*Johns Hopkins University School of Medicine*)

SaBT6: 10:00-11:30 Meeting Room 316B  
**Neuromuscular Systems (II) (Theme 6) (Oral Session)**  
**Chair:** Perreault, Eric (*Northwestern University*)

10:00-10:15 SaBT6.1  
**A Simulated Inverted Pendulum to Investigate Human Sensorimotor Control**  
 Cesonis, Justinas (*Technical University of Munich*); Franklin, Sae (*Institute for Cognitive Systems, Technical University of Munich*); Franklin, David W.\* (*Technical University of Munich*)

10:15-10:30 SaBT6.2  
**Influence of Visual Feedback on the Sensorimotor Control of an Inverted Pendulum**  
 Franklin, Sae (*Institute for Cognitive Systems, Technical University of Munich*); Cesonis, Justinas (*Technical University of Munich*); Franklin, David W.\* (*Technical University of Munich*)

10:30-10:45 SaBT6.3  
**Myoelectric Signals and Pattern Recognition from Implanted Electrodes in Two TMR Subjects with an Osseointegrated Communication Interface**  
 Mastinu, Enzo\* (*Chalmers - Univ. of technology*); Brånemark, Rickard (*Gothenburg Univ.*); Aszmann, Oskar (*Medical Univ. of Vienna*); Ortiz-Catalan, Max (*Chalmers Univ. of Technology*)

10:45-11:00 SaBT6.4  
**Effects of Mapping Uncertainty on Visuomotor Adaptation to Trial-by-Trial Perturbations with Proportional Myoelectric Control**  
 Lyons, Kenneth\* (*University of California, Davis*); Joshi, Sanjay (*University of California, Davis*)

11:00-11:15 SaBT6.5  
**Reconstructing Neural Activity and Kinematics using a Systems-Level Model of Sensorimotor Control**  
 Saxena, Shreya (*Columbia Univ.*); D'Aleo, Raina (*Johns Hopkins Univ.*); Schieber, Marc (*Univ. of Rochester*); Dahleh, munther (*MIT*); Sarma, Sridevi V.\* (*Johns Hopkins Univ.*)

11:15-11:30 SaBT6.6  
**Quantification of Upper-Extremity Movement Pattern in Patients with Stroke using Touchscreen: A Pilot Study**  
 Zhang, Xiao (*Ruijin Rehabilitation Hospital*); Bao, Yong (*Dept. of Rehabilitation Medicine, Ruijin Rehabilitation Hospital*); Xie, Qing (*Ruijin Hospital Shanghai Jiao Tong University School of Medicine*); Niu, Chuanxin M.\* (*Ruijin Hospital, School of Medicine, Shanghai Jiao Tong University*)

SaBT7: 10:00-11:30 Meeting Room 316C  
**Signal Processing and Classification of Video Signals (Theme 1) (Oral Session)**  
**Chair:** Kearney, Robert Edward (*McGill University*)  
**Co-Chair:** Tsujikawa, Masanori (*NEC Corp.*)

10:00-10:15 SaBT7.1  
**A Maximum Likelihood Formulation to Exploit Heart Rate Variability for Robust Heart Rate Estimation from Facial Video**  
 K T, Raseena\* (*Indian Institute of Science, Bangalore*); Ghosh, Prasanta (*Indian Institute of Science*)

10:15-10:30 SaBT7.2  
**EyeIid and Blink Tracking in an Animal Model of Facial Palsy**  
 Tsrar, Guy\* (*McGill University*); Guarin, Diego Luis (*Harvard Medical School*); Jowett, Nathan (*Harvard University*); Kearney, Robert Edward (*McGill University*)

10:30-10:45 SaBT7.3  
**Head-Motion Robust Video-Based Heart Rate Estimation using Facial Feature Point Fluctuations**  
 Umematsu, Terumi\* (NEC Corp.); Tsujikawa, Masanori (NEC Corp.)

10:45-11:00 SaBT7.4  
**Drowsiness Estimation from Low-Frame-Rate Facial Videos using Eyelid Variability Features**  
 Tsujikawa, Masanori\* (NEC Corp.); Onishi, Yoshifumi (NEC Corp.); Kiuchi, Yukihiko (NEC Corp.); Ogatsu, Toshinobu (NEC Corp.); Nishino, Atsushi (DAIKIN Industries, Ltd.); Hashimoto, Satoshi (DAIKIN Industries, Ltd.)

11:00-11:15 SaBT7.5  
**A Neural-Network-Based Investigation of Eye-Related Movements for Accurate Drowsiness Estimation**  
 Sun, Mingfei (Hong Kong University of Science and Technology); Tsujikawa, Masanori\* (NEC Corp.); Onishi, Yoshifumi (NEC Corp.); Ma, Xiaojuan (Hong Kong University of Science and Technology); Nishino, Atsushi (DAIKIN Industries, Ltd.); Hashimoto, Satoshi (DAIKIN Industries, Ltd.)

11:15-11:30 SaBT7.6  
**Investigating Bodily Responses to Unknown Words: A Focus on Facial Expressions and EEG**  
 Zhang, Xinlei\* (MIT Media Lab; University of Tokyo); Kosmyna, Nataliya (MIT Media Lab); Maes, Pattie (MIT Media Lab); Rekimoto, Jun (University of Tokyo)

SaBT9: 10:00-11:30 Meeting Room 318B  
**Biomedical Signal Classification: Electromyography (I) (Theme 1) (Oral Session)**

10:00-10:15 SaBT9.1  
**An EMG Pattern Classification Method based on a Mixture of Variance Distribution Models**  
 Furui, Akira\* (Hiroshima University); Hayashi, Hideaki (Kyushu University); Tsuji, Toshio (Hiroshima University)

10:15-10:30 SaBT9.2  
**Performance of Combined Surface and Intramuscular EMG for Classification of Hand Movements**  
 Rehman, Muhammad Zia ur\* (National Univ. of Science and Tech., Islamabad Pakistan); Omer Gilani, Syed (National Univ. of Science and Tech.); Waris, Asim (Aalborg Univ., Denmark); Jochumsen, Mads (Center for Sensory-Motor Interaction, Dept. of Health Science and Tech., Aalborg Univ., Denmark); Niazi, Imran Khan (HST, Aalborg Univ. and Center for Chiropractic Research (CfCR), New Zealand College of Chiropractic (NZCC)); Kamavuako, Ernest Nlandu (Aalborg Univ.)

10:30-10:45 SaBT9.3  
**Using Antonyan Vardan Transform and Extreme Learning Machines for Accurate sEMG Signal Classification**  
 Cene, Vinicius H. (UFRGS); Ruschel dos Santos, Raphael\* (Universidade Federal do Rio Grande do Sul); Balbinot, Alexandre (Federal University of Rio Grande do Sul (UFRGS))

10:45-11:00 SaBT9.4  
**Optimal Feature Set for Finger Movement Classification based on sEMG**  
 Ahmed, Ahmed\* (University of Technology Sydney); Al-Jumaily, Adel (University of Technology Sydney)

11:00-11:15 SaBT9.5  
**Isometric Finger Pose Recognition with Sparse Channel Spatio-Temporal EMG Imaging**  
 Stephenson, Robert\* (University of Technology Sydney); Chai, Rifai (Swinburne University of Technology); Eager, David (UTS)

11:15-11:30 SaBT9.6  
**An Investigation of Temporally Inspired Time Domain Features for Electromyographic Pattern Recognition**  
 Phinyomark, Angkoon (University of New Brunswick); Scheme, Erik\* (University of New Brunswick)

SaBT10: 10:00-11:30 Meeting Room 319A  
**X-Ray, CT and PET (Theme 2) (Oral Session)**

10:00-10:15 SaBT10.1  
**Grid Generation for Rendering Realistic X-Ray Images of Narrow Blood Vessels in Real-Time Angiography Simulation**  
 Lee, Jongbeom (KAIST (Korea Advanced Institute of Science and Technology)); Kim, Myeongjin (KAIST (Korea Advanced Institute of Science and Technology)); Lee, Doo Yong\* (KAIST)

10:15-10:30 SaBT10.2  
**K-Edge Spectral Computed Tomography with a Photon Counting Detector and Discrete Reconstruction**  
 Brun, Francesco\* (Istituto Nazionale di Fisica Nucleare (INFN)); Di Trapani, Vittorio (University of Siena & INFN); Dreossi, Diego (Elettra - Sincrotrone Trieste S.C.p.A.); Longo, Renata (University of Trieste & INFN, Dept. of Physics); Delogu, Pasquale (University of Siena & INFN); Rigon, Luigi (University of Trieste & INFN)

10:30-10:45 SaBT10.3  
**Respiratory Motion Correction using a Novel Positron Emission Particle Tracking Technique: A Framework towards Individual Lesion-Based Motion Correction**  
 Tumpa, Tasmia Rahman\* (University of Tennessee, Grad School of Medicine); Acuff, Shelley (University of Tennessee, Grad School of Medicine); Gregor, Jens (University of Tennessee, Dept. of Electrical Engineering and Computer Science); Lee, Sanghyeb (Independent Consultant); Hu, Dongming (Independent Consultant); Osborne, Dustin (University of Tennessee)

SaBT12: 10:00-11:30 Meeting Room 321A  
**Cardiovascular and Respiratory Modeling (Theme 5) (Oral Session)**

10:00-10:15 SaBT12.1  
**Validation and Application of a Physically Nonlinear 1D Computational Model for Bifurcated Arterial Networks**  
 Seyed Vahedein, Yashar\* (Rochester Institute of Technology); Liberson, Alexander (Rochester Institute of Technology)

10:15-10:30 SaBT12.2  
**Regulation of Maternal-Fetal Heart Rates and Coupling in Mice Fetuses**  
 Khandoker, Ahsan H\* (Khalifa University of Science, Technology and Research); Yoshida, Chihiro (Tohoku University); Kasahara, Yoshiyuki (Tohoku University); Funamoto, Kiyoe (Tohoku University); Nakanishi, Kana (Tohoku University); Fukase, Miyabi (Tohoku University); Kanda, Keiichi (Tohoku University); Haroun, Isra (Khalifa University); Niizeki, Kyuichi (Yamagata University); Kimura, Yoshitaka (Tohoku University)

10:30-10:45 SaBT12.3  
**Three-Element Fractional-Order Viscoelastic Arterial Windkessel Model**  
 Bahloul, Mohamed A.\* (KAUST); Laleg, Taous-Meriem (King Abdullah University of Science and Technology (KAUST))

10:45-11:00 SaBT12.4  
**An Enhanced Mechanistic Model for Capnography, with Application to CHF-COPD Discrimination**  
 Karasan, Ekin\* (Massachusetts Institute of Technology); Abid, Abubakar (Massachusetts Institute of Technology); Mieloszyk, Rebecca (Philips Healthcare, University of Washington); Krauss, Baruch (Harvard Medical School); Heldt, Thomas (Massachusetts Institute of Technology); Verghese, George (Massachusetts Institute of Technology)

11:00-11:15 SaBT12.5  
**Experimental Validation of a Closed-Loop Respiratory Control Model using Dynamic Clamp**  
 Diekman, Casey\* (New Jersey Institute of Technology); Thomas, Peter (Case Western Reserve University); Wilson, Christopher (Loma Linda University)

11:15-11:30 SaBT12.6  
**In-Vitro Evaluation of Cardiac Energetics and Coronary Flow with Volume Displacement and Rotary Blood Pumps**  
 Wu, Eric\* (*Critical Care Research Group, The Prince Charles Hospital*); Tansley, Geoff (*Griffith Univ., Queensland, Australia*); Fraser, John F. (*Prince Charles Hospital, Brisbane, Queensland*); Gregory, Shaun David (*Queensland Univ. of Technology*)

SaBT13: 10:00-11:30 Meeting Room 321B  
**Cardiorespiratory Medical Applications (Theme 5) (Oral Session)**

10:00-10:15 SaBT13.1  
**Respiratory Rate Derived from Pulse Photoplethysmographic Signal by Pulse Decomposition Analysis**  
 Lázaro, Jesús\* (*Univ. of Zaragoza*); Kontaxis, Spyridon (*BSICoS Group, I3A, IIS Arag'ón, Univ. of Zaragoza, Spain*); Bailon, Raquel (*Univ. of Zaragoza*); Laguna, Pablo (*Zaragoza Univ. and CIBER-BBN*); Gil, Eduardo (*Zaragoza Univ. and CIBER-BBN*)

10:15-10:30 SaBT13.2  
**Investigating the Relationship between the Ratings of Perceived Exertion and Tone-Entropy of Heart Rate Variability during a Graded Exercise**  
 Azz, Mouad (*Khalifa University*); Khandoker, Ahsan H\* (*Khalifa University of Science, Technology and Research*); Jelinek, Herbert Franz (*Charles Sturt University*)

10:30-10:45 SaBT13.3  
**Stress Resilience Measurement with Heart-Rate Variability during Mental and Physical Stress**  
 Dong, Suh-Yeon (*KIST*); Lee, Miran (*Korea Institute of Science and Tech.*); Park, Heesu (*Korea Institute of Science and Tech.*); Youn, Inchan\* (*Korea Institute of Science and Tech.*)

10:45-11:00 SaBT13.4  
**A Fast Principal Component Analysis Method for Calculating the ECG Derived Respiration**  
 Sadr, Nadi\* (*Univ. of Sydney*); de Chazal, Philip (*Univ. of Sydney*)

11:00-11:15 SaBT13.5  
**Cardiorespiratory Phase Synchronization Increases during Certain Mental Stimuli in Healthy Subjects**  
 Solà-Soler, Jordi\* (*Universitat Politècnica de Catalunya*); Cuadros, Alba (*Universitat Politècnica de Catalunya*); Giraldo, Beatriz (*Universitat Politècnica de Catalunya*)

11:15-11:30 SaBT13.6  
**Myocardial Ischemia Diagnosis using a Reduced Lead System**  
 Aranda, Alfonso\* (*Medtronic & Maastricht University*); Bonizzi, Pietro (*Maastricht University*); Karel, Joël (*Maastricht University*); Peeters, Ralf (*Maastricht University*)

SaBT14: 10:00-11:30 Meeting Room 322AB  
**Diagnostic Devices and Physiological Monitoring 2 (Theme 9) (Oral Session)**  
**Chair:** Fletcher, Richard Ribon (*Massachusetts Institute of Technology*)

10:00-10:15 SaBT14.1  
**In-Vivo Measurements of Tissue Impedivity by Electrical Impedance Spectroscopy**  
 Meroni, Davide\* (*Politecnico di Milano*); Bovio, Dario (*Politecnico di Milano*); Gualtieri, Massimo (*University of Milan*); Aliverti, Andrea (*Politecnico di Milano*)

10:15-10:30 SaBT14.2  
**Automated Versatile DIY Microscope Platform**  
 Pylatiuk, Christian\* (*Karlsruhe Inst. of Tech.*); Vogt, Marcel (*Inst. for Automation and Applied Informatics (IAI) - Karlsruhe Inst. of Tech. (KIT)*); Scheikl, Paul (*Inst. for Anthropomatics and Robotics (IAR) - Intelligent Process Automation and Robotics Lab (IPR) - Karlsruhe Inst. of Tech.*); Gottwald, Eric (*Inst. of Functional Interfaces (IFG) - Karlsruhe Inst. of Tech. (KIT)*)

10:30-10:45 SaBT14.3  
**Clinical Application of Multiple Vital Signs-Based Infection Screening System in a Mongolian Hospital: Optimization of Facial Temperature Measurement by Thermography at Various Ambient Temperature Conditions using Linear Regression Analysis**  
 Dagdanpurev, Sumiyakhand\* (*Tokyo Metropolitan Univ.*); Sun, Guanghao (*The Univ. of Electro-Communications*); Choimaa, Lodoiravsal (*National Univ. of Mongolia*); Abe, Shigeto (*Takasaka Clinic*); Matsui, Takemi (*Tokyo Metropolitan Univ.*)

10:45-11:00 SaBT14.4  
**Arterial Pulse Waveform Characteristics Difference between the Three Trimesters in a Healthy Pregnancy**  
 Li, Kunyan (*Beijing University of Technology*); Zhang, Song (*Beijing University of Technology*); Chi, Zhenyu (*Beijing University of Technology*); Yang, Yimin\* (*Beijing University of Technology*); Jiang, Hongqing (*Haidian Maternal & Child Health Hospital*); Yang, Lin (*Beijing University of Technology*); Wang, Anran (*Beijing University of Technology*); Zhang, Lei (*Beijing University of Technology*); Chen, Fei (*Southern University of Science and Technology*); Zheng, Dingchang (*Anglia Ruskin University*)

11:00-11:15 SaBT14.5  
**Optimization of Tetrapolar Impedance Electrodes in Microfluidic Devices for Point of Care Diagnostics using Finite Element Modeling**  
 Hantschke, Martin\* (*City, University of London*); Sideris, Dimitrios (*Genetic Microdevices Ltd.*); Kyriacou, Panayiotis (*City University London*); Triantis, Iasonas (*City, University of London*)

11:15-11:30 SaBT14.6  
**Low-Cost Mobile Device for Screening of Atherosclerosis and Coronary Arterial Disease**  
 Pignatelli, Niccolò (*MIT*); Ma, Botong (*Massachusetts Institute of Technology*); Sengupta, Shantanu (*Sengupta Hospital and Research Institute*); Sengupta, Partho (*True Vision*); Fletcher, Richard Ribon\* (*Massachusetts Institute of Technology*)

SaBT15: 10:00-11:30 Meeting Room 323A  
**BioMEMS and Microfluidics – (Theme 3) (Oral Session)**

10:00-10:15 SaBT15.1  
**3D Bioprinting of Cyanobacteria for Solar-Driven Bioelectricity Generation in Resource-Limited Environments**  
 Liu, Lin\* (*State Univ. of New York at Binghamton*); Gao, Yang (*State Univ. of New York at Binghamton*); Lee, Sungjun (*Pensees, Inc*); Choi, Seokheun (*State Univ. of New York at Binghamton*)

10:15-10:30 SaBT15.2  
**Donation of Neural Stem Cells? Post Mortal Viability of Spinal Cord Neuronal Cells**  
 Mikhailov, Andrey\* (*University of Tsukuba*); Sankai, Yoshiyuki (*University of Tsukuba*)

10:30-10:45 SaBT15.3  
**Using Cell-Seeded Electrospun Patch for Myocardial Injury: In-Vitro and in Rat Model**  
 Chen, Wei-Ling (*Kaohsiung Veterans General Hospital*); Kan, Chung-Dann\* (*National Cheng Kung Univ. Hospital, Dept. of Surgery*)

10:45-11:00 SaBT15.4  
**Digital High-Resolution Melt Platform for Rapid and Parallelized Molecule-by-Molecule Genetic Profiling**  
 O'Keefe, Christine (*Johns Hopkins University*); Wang, Tza-Huei\* (*Johns Hopkins University*)

11:00-11:15 SaBT15.5  
**Integrated Bacterial Identification and Antimicrobial Susceptibility Testing for Polymicrobial Infections using Digital PCR and Digital High-Resolution Melt in a Microfluidic Array Platform**  
 Athamanolap, Pornpat (*Johns Hopkins Univ.*); Hsieh, Kuangwen (*Johns Hopkins Univ.*); Wang, Tza-Huei\* (*Johns Hopkins Univ.*)



11:15-11:30	SaBT15.6	<b>Active or Passive On-Demand Droplet Merging in a Microfluidic Valve-Based Trap</b> Babahosseini, Hesam* ( <i>National Institutes of Health</i> ); DeVoe, Don L. ( <i>University of Maryland</i> ); Misteli, Tom ( <i>National Cancer Institute, National Institutes of Health</i> )
SaBT16: 10:00-11:30	Meeting Room 323B	<b>General and Theoretical Informatics – Predictive Analytics (Theme 10) (Oral Session)</b> <b>Chair:</b> Vettoretti, Martina ( <i>University of Padova</i> )
10:00-10:15	SaBT16.1	<b>Seizure Prediction in EEG Records based on Spatial-Frequency Features and Preictal Period Selection</b> Wang, Qun* ( <i>Beijing Institute of Tech.</i> ); Tian, Xin ( <i>Beijing Institute of Tech.</i> ); Liu, Zhiwen ( <i>Beijing Institute of Tech.</i> )
10:15-10:30	SaBT16.2	<b>Importance of Recalibrating Models for Type 2 Diabetes Onset Prediction: Application of the Diabetes Population Risk Tool on the Health and Retirement Study</b> Vettoretti, Martina* ( <i>University of Padova</i> ); Longato, Enrico ( <i>University of Padova</i> ); Di Camillo, Barbara ( <i>University of Padova</i> ); Facchinetti, Andrea ( <i>University of Padova</i> )
10:30-10:45	SaBT16.3	<b>Improving Young Stroke Prediction by Learning with Active Data Augmenter in a Large-Scale Electronic Medical Claims Database</b> Hung, Chen-Ying* ( <i>National Tsing Hua University</i> ); Lin, Ching-Heng ( <i>Dept. of Medical Research, Taichung Veterans General Hospital</i> ); Lee, Chi-Chun ( <i>National Tsing Hua University</i> )
10:45-11:00	SaBT16.4	<b>Predictive Value of Prothrombin Time for All-Cause Mortality in Acute Myocardial Infarction Patients</b> Wang, Xurong ( <i>Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences</i> ); Chen, Runge ( <i>Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences</i> ); Li, Ye ( <i>Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences</i> ); Miao, Fen* ( <i>Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences</i> )
11:00-11:15	SaBT16.5	<b>Robust Prediction of Treatment Times in Concurrent Patient Care</b> Fricks, Rafael* ( <i>Duke University</i> ); Henry, Tseng ( <i>Duke University</i> ); Veihl, Marjorie ( <i>Duke University Health System</i> ); Trivedi, Kishor ( <i>Duke University</i> ); Barr, Roger ( <i>Duke University</i> )
11:15-11:30	SaBT16.6	<b>Cancer Type Prediction and Classification based on RNA-Sequencing Data</b> Hsu, Yi-Hsin ( <i>University of Washington Bothell</i> ); Si, Dong* ( <i>University of Washington</i> )
SaBT17: 10:00-11:30	Meeting Room 323C	<b>Body Area Networks (Theme 7) (Oral Session)</b>
10:00-10:15	SaBT17.1	<b>Fusing Non-Contact Vital Sign Sensing Modalities – First Results</b> Leonhardt, Steffen* ( <i>RWTH Aachen University</i> ); Teichmann, Daniel ( <i>RWTH Aachen University</i> )
10:15-10:30	SaBT17.2	<b>Evaluation of a Real-Time Low-Power Cardiorespiratory Sensor for the IoT</b> Gatouillat, Arthur* ( <i>INSA-Lyon</i> ); Massot, Bertrand ( <i>INSA Lyon</i> ); Badr, Youakim ( <i>INSA-Lyon</i> ); Sejdic, Ervin ( <i>University of Pittsburgh</i> ); Gehin, Claudine ( <i>INSA Lyon</i> )
10:30-10:45	SaBT17.3	<b>Preliminary Investigations for Non-Invasive Temperature Change Detection in Thermotherapy by Means of UWB Microwave Radar</b> Ley, Sebastian* ( <i>Tech. Univ. Ilmenau</i> ); Fiser, Ondrej ( <i>Czech Tech. Univ. in Prague</i> ); Merunka, Ilya ( <i>Czech Tech. Univ. in Prague</i> ); Vrba, Jan ( <i>Czech Tech. Univ. in Prague</i> ); Sachs, Jürgen ( <i>Technische Univ. Ilmenau</i> ); Helbig, Marko ( <i>Technische Univ. Ilmenau</i> )
10:45-11:00	SaBT17.4	<b>Wireless Smartphone Control using Electromyography and Automated Gesture Recognition</b> Dawes, Jacob ( <i>Oregon State University</i> ); Brian, Makenzie ( <i>Oregon State University</i> ); Bialek, Hayden ( <i>Oregon State University</i> ); Johnston, Matthew* ( <i>Oregon State University</i> )
11:00-11:15	SaBT17.5	<b>Body Sensor Networks Powered by a NFC-Coupled Smartphone in the Pocket</b> Masuda, Yuichi* ( <i>University of Tokyo</i> ); Noda, Akihito ( <i>Nanzan University</i> ); Shinoda, Hiroyuki ( <i>University of Tokyo</i> )
11:15-11:30	SaBT17.6	<b>In-Field Remote Fingerprint Authentication using Human Body Communication and On-Hub Analytics</b> Das, Debayan ( <i>Purdue Univ.</i> ); Maity, Shovan* ( <i>Purdue Univ.</i> ); Chatterjee, Baibhab ( <i>Purdue Univ.</i> ); Sen, Shreyas ( <i>Purdue Univ.</i> )
SaBT18: 10:00-11:30	Meeting Room 324	<b>Point of Care Technologies and Translation (I) (Theme 12) (Oral Session)</b> <b>Chair:</b> Sacristan, Emilio ( <i>Universidad Autónoma Metropolitana</i> ) <b>Co-Chair:</b> Schachter, Steven ( <i>Beth Israel Deaconess Medical Center, Harvard Medical School</i> )
10:00-10:15	SaBT18.1	<b>GearVision: Smartphone based Head Mounted Perimeter for Detection of Visual Field Defects</b> Sircar, Tushar* ( <i>Samsung R&amp;D Institute, Bangalore</i> ); Mishra, Aarshee ( <i>Samsung R&amp;D Institute, Bangalore</i> ); Bopardikar, Ajit ( <i>Samsung Research India, Bangalore, Karnataka</i> ); Tiwari, Vijay Narayan ( <i>Samsung Research India, Bangalore</i> )
10:15-10:30	SaBT18.2	<b>High Intraocular Pressure Detection from Frontal Eye Images: A Machine Learning based Approach</b> Aloudat, Mohammad ( <i>Univ. of Bridgeport</i> ); Faezipour, Miad* ( <i>Univ. of Bridgeport</i> ); El-Sayed, Ahmed ( <i>Univ. of Bridgeport</i> )
10:30-10:45	SaBT18.3	<b>Sample Entropy of Speed Power Spectrum as a Measure of Laparoscopic Surgical Instrument Trajectory Smoothness</b> Hutchins, Andrew* ( <i>Duke University</i> ); Manson, Roberto ( <i>Duke University Medical Center</i> ); Zani, Jr., Sabino ( <i>Duke University Medical Center</i> ); Mann, Brian ( <i>Duke University</i> )
10:45-11:00	SaBT18.4	<b>Craniectomy Effects on Resting State Functional Connectivity and Cognitive Performance in Immature Rats</b> Sargolzaei, Saman* ( <i>University of California Los Angeles</i> ); Cai, Yan ( <i>UCLA Neurosurgery</i> ); Hovda, David A. ( <i>UCLA Neurosurgery</i> ); Harris, Neil G ( <i>UCLA</i> ); Giza, Christopher ( <i>UCLA Brain Injury Research Center, Dept of Neurosurgery and Division of Pediatric Neurology, Mattel Children's Hospital, Los Angeles</i> ); Melissa J., Walker ( <i>UCLA Neurosurgery</i> )
11:00-11:15	SaBT18.5	<b>Cancer Detection at your Fingertips: Smartphone-Enabled DNA Testing</b> Turner, Robert* ( <i>Biological Dynamics, Inc.</i> ); Madsen, James ( <i>Biological Dynamics</i> ); Simon Herrera, Pedro David ( <i>Biological Dynamics</i> ); Wallace, John ( <i>Biological Dynamics</i> ); Madrigal, Jonathan ( <i>Biological Dynamics</i> ); Hinestrosa, Juan ( <i>Biological Dynamics</i> ); Dobrovolskaia, Irina ( <i>Biological Dynamics</i> ); Krishnan, Raj ( <i>Biological Dynamics, Inc.</i> )

11:15-11:30	SaBT18.6	<b>A Novel Modular Headmount Design for Non-Invasive Scalp EEG Recordings in Awake Animal Models</b> Paulson, Catherine* ( <i>Univ. of California Los Angeles</i> ); Chien, Daniel ( <i>UCLA</i> ); Lin, Francis ( <i>UCLA</i> ); Seidlits, Stephanie ( <i>UCLA</i> ); Cai, Yan ( <i>UCLA Neurosurgery</i> ); Sargolzaei, Saman ( <i>Univ. of California Los Angeles</i> ); Harris, Neil G ( <i>UCLA</i> ); Giza, Christopher ( <i>UCLA Brain Injury Research Center, Dept of Neurosurgery and Division of Pediatric Neurology, Mattel Children's Hospital, Los Angeles</i> )	10:15-10:30	SaBT20.2	<b>Propagation of Parametric Uncertainty in Aliev-Panfilov Model of Cardiac Excitation</b> Son, Jeongeun ( <i>Clarkson University</i> ); Du, Yuncheng ( <i>Clarkson University</i> ); Du, Dongping* ( <i>Texas Tech University</i> )
SaBT19: 10:00-11:30	Meeting Room 325A	<b>Sensor Informatics – Wearable Systems and Sensors (Theme 10)</b> (Oral Session)	10:30-10:45	SaBT20.3	<b>Computational Fluid Dynamics Analysis to Predict Endothelial Cells Migration during Flow Exposure Experiment with Placement of Two Stent Wires</b> Putra, Narendra Kurnia* ( <i>Tohoku Univ.</i> ); Wang, Zi ( <i>Tohoku Univ.</i> ); Anzai, Hitomi ( <i>Tohoku Univ.</i> ); Ohta, Makoto ( <i>Univ. of Tohoku</i> )
10:00-10:15	SaBT19.1	<b>A Comparison of Feature Selection Methods when using Motion Sensors Data: A Case Study in Parkinson's Disease</b> Javed, Farrukh ( <i>Örebro University</i> ); Thomas, Ilias ( <i>Dalarna University</i> ); Memedi, Mevludin* ( <i>Örebro University</i> )	10:45-11:00	SaBT20.4	<b>Global Sensitivity Analysis of a Cardiovascular Model for the Study of the Autonomic Response to Head-Up Tilt Testing</b> Calvo, Mireia ( <i>Université de Rennes 1</i> ); Le Rolle, Virginie ( <i>University of Rennes 1</i> ); Romero Pérez, Daniel ( <i>Université de Rennes 1</i> ); Béhar, Nathalie ( <i>Université de Rennes 1</i> ); Gomis, Pedro ( <i>Technical University of Catalonia</i> ); Mabo, Philippe ( <i>Université de Rennes 1</i> ); Hernández, Alfredo I* ( <i>University of Rennes 1 and INSERM U1099</i> )
10:15-10:30	SaBT19.2	<b>Mobile Gait Analysis using Personalised Hidden Markov Models for Hereditary Spastic Paraplegia Patients</b> Martindale, Christine F* ( <i>Friedrich-Alexander-Univ. Erlangen-Nürnberg</i> ); Roth, Nils ( <i>Friedrich Alexander Univ. Erlangen Nuremberg</i> ); Gaßner, Heiko ( <i>Univ. Erlangen, Dept. of Molecular Neurology</i> ); Jensen, Dennis ( <i>Univ. Erlangen, Dept. of Molecular Neurology</i> ); Kohl, Zacharias ( <i>Univ. Erlangen, Dept. of Molecular Neurology</i> ); Eskofier, Bjoern M ( <i>Friedrich-Alexander-Univ. Erlangen-Nürnberg</i> )	11:00-11:15	SaBT20.5	<b>Computational Analysis of the Action of Chloroquine on Short QT Syndrome Variant 1 and Variant 3 in Human Ventricles</b> Luo, Cunjin* ( <i>Southwest Medical University</i> ); Wang, Kuanquan ( <i>Harbin Institute of Technology</i> ); Liu, Tong ( <i>Tianjin Medical University</i> ); Zhang, Henggui ( <i>Harbin Institute of Technology, School of Computer Science and Technology</i> )
10:30-10:45	SaBT19.3	<b>Artificial Neural Network for Laparoscopic Skills Classification using Motion Signals from Apple Watch</b> Laverde, Rubbermaid* ( <i>Pontifical Bolivarian University</i> ); Rueda, Claudia ( <i>Pontifical Bolivarian University</i> ); Amado, Lusvin ( <i>Centro Industrial de Mantenimiento Integral and Pontifical Bolivarian University</i> ); Rojas, David ( <i>The Wilson Centre</i> ); Altuve, Miguel ( <i>Pontifical Bolivarian University</i> )	11:15-11:30	SaBT20.6	<b>Design of an Interactive Simulation Environment for Arrays of Cardiac Cells</b> Barr, Roger* ( <i>Duke University</i> )
10:45-11:00	SaBT19.4	<b>A Binary Classification of Cardiovascular Abnormality using Time-Frequency Features of Cardio-Mechanical Signals</b> Yang, Chenxi* ( <i>Stevens Institute of Technology</i> ); Aranoff, Nicole ( <i>Yeshiva University</i> ); Green, Philip ( <i>Columbia University Medical Center</i> ); Tavassolian, Negar ( <i>Stevens Institute of Technology</i> )	SaCT1: 13:30-15:00	Meeting Room 311	<b>Neural Interfaces (V) (Theme 6)</b> (Oral Session)
11:00-11:15	SaBT19.5	<b>Simple Gait Symmetry Measures based on Foot Angular Velocity: Analysis in Post Stroke Patients</b> Zhang, Wei* ( <i>EPFL</i> ); Smuck, Matthew ( <i>Stanford University</i> ); Legault, Catherine ( <i>Stanford Stroke Center, Stanford University</i> ); Ith, Ma Agnes ( <i>Wearable Health Lab, Dept. of Orthopaedic Surgery, Stanford University</i> ); Muaremi, Amir ( <i>Novartis</i> ); Aminian, Kamiar ( <i>Ecole Polytechnique Federale de Lausanne</i> )	13:30-13:45	SaCT1.1	<b>Real-Life Dry-Contact Ear-EEG</b> Kappel, Simon Lind* ( <i>Aarhus University, Denmark</i> ); Kidmose, Preben ( <i>Aarhus University, Denmark</i> )
SaBT20: 10:00-11:30	Meeting Room 325B	<b>Cardiovascular Models (Theme 4)</b> (Oral Session) <b>Chair:</b> Barr, Roger ( <i>Duke University</i> ) <b>Co-Chair:</b> Dokos, Socrates ( <i>University of New South Wales</i> )	13:45-14:00	SaCT1.2	<b>Stimulation of Peripheral Nerves using Conductive Hydrogel Electrodes</b> Gilmour, Aaron ( <i>Univ. of New South Wales</i> ); Goding, Josef ( <i>Imperial College London</i> ); Aregueta-Robles, Ulises Alejandro ( <i>Univ. of New South Wales</i> ); Staples, Naomi ( <i>Univ. of New South Wales</i> ); Byrnes-Preston, Philip ( <i>The Univ. of New South Wales</i> ); Morley, John William ( <i>Univ. of Western Sydney</i> ); Lovell, Nigel H. ( <i>Univ. of New South Wales</i> ); Chew, Daniel ( <i>GlaxoSmithKline</i> ); Green, Rylie Adelle* ( <i>Imperial College London</i> )
10:00-10:15	SaBT20.1	<b>Electromechanical Model to Predict Cardiac Resynchronization Therapy</b> Albatat, Mohammad* ( <i>University of Oslo; Oslo University Hospital</i> ); King, David Ryan ( <i>Virginia Polytechnic Institute and State University</i> ); Unger, Laura Anna ( <i>Institute of BioMedical Engineering, Karlsruhe Institute of Technology</i> ); Arevalo, Hermenegild ( <i>Simula Research Lab</i> ); Wall, Samuel ( <i>Dept. of Scientific Computing, Simula Research Lab</i> ); Sundnes, Joakim ( <i>Simula Research Lab</i> ); Bergsland, Jacob ( <i>Intervention Centre, University Hospital Oslo</i> ); Balasingham, Ilanko ( <i>Oslo University Hospital and Norwegian University of Science and Technology</i> )	14:00-14:15	SaCT1.3	<b>Novel Techniques for Large-Scale Manipulations of Cortical Networks in Non-Human Primates</b> Yazdan-Shahmorad, Azadeh* ( <i>University of Washington</i> ); Silversmith, Daniel ( <i>University of California, San Francisco</i> ); Sabes, Philip N. ( <i>University of California, San Francisco</i> )
			14:15-14:30	SaCT1.4	<b>Investigation of the Efficiency of the Shape of Chopped Pulses using Earthworm Model</b> Dali, Melissa* ( <i>INRIA, LIRMM, University of Montpellier</i> ); Guiho, Thomas ( <i>University of Montpellier (LIRMM)</i> ); Maciejasz, Pawel ( <i>AXONIC, MXM</i> ); Rossel, Olivier ( <i>LIRMM - UMII/CNRS</i> ); Guiraud, David ( <i>INRIA</i> )

14:30-14:45	SaCT1.5	<b>A Wireless Platform to Support Pre-Clinical Trial of Neural Implant for Spinal Cord Injury</b> Massachi, Jonathan* ( <i>University of California Los Angeles</i> ); Lo, Yi-Kai ( <i>University of California Los Angeles</i> ); Wang, Po-Min ( <i>UCLA</i> ); Liu, Wentai ( <i>University of California Los Angeles</i> )	13:45-14:00	SaCT3.2	<b>Improved Application of Sparse Representation Classifier in fMRI-Based Brain State Decoding</b> Guo, Zhaoxi ( <i>Beijing Normal University, State Key Lab of Cognitive Neuroscience and Learning &amp; IDG/McGovern Institute for Brain Research</i> ); Long, Zhiying* ( <i>Beijing Normal University</i> ); Zhang, Jing ( <i>Beijing Normal University, State Key Lab of Cognitive Neuroscience and Learning &amp; IDG/McGovern Institute for Brain Research</i> ); Xia, Maogeng ( <i>Beijing Normal University, State Key Lab of Cognitive Neuroscience and Learning &amp; IDG/McGovern Institute for Brain Research</i> ); Li, Yao ( <i>College of Information Science and Technology, Beijing Normal University</i> )
14:45-15:00	SaCT1.6	<b>Design and Assessment of Stimulation Parameters for a Novel Peripheral Nerve Interface</b> Patrick, Erin ( <i>University of Florida</i> ); Currin, Seth ( <i>University of Florida</i> ); Kundu, Aritra ( <i>University of Florida</i> ); Delgado, Francisco ( <i>University of Florida</i> ); Fahmy, Ahmed S. ( <i>Cairo University</i> ); Madler, Ryan ( <i>University of Florida</i> ); Maghari, Nima ( <i>University of Florida</i> ); Bashirullah, Rizwan ( <i>University of Florida</i> ); Gunduz, Aysegul ( <i>University of Florida</i> ); Otto, Kevin* ( <i>University of Florida</i> )	14:00-14:15	SaCT3.3	<b>Functional MRI Investigation of Audiovisual Interactions in Auditory Midbrain</b> Dong, Celia M. ( <i>Univ. of Hong Kong</i> ); Leong, Alex T. L. ( <i>Univ. of Hong Kong</i> ); Manno, Francis AM ( <i>City Univ. of Hong Kong</i> ); Lau, Condon ( <i>City Univ. of Hong Kong</i> ); Ho, Leon C. ( <i>Univ. of Hong Kong</i> ); Chan, Russell W. ( <i>Stanford Univ.</i> ); Feng, Yanqiu ( <i>Southern Medical Univ.</i> ); Gao, Patrick P. ( <i>Univ. of Hong Kong</i> ); Wu, Ed X.* ( <i>Univ. of Hong Kong</i> )
SaCT2: 13:30-15:00		Meeting Room 312			
		<b>Signal Processing and Classification for Wearable Systems and Smartphones (Theme 1) (Oral Session)</b> <b>Chair:</b> Porta, Alberto ( <i>Università degli Studi di Milano</i> )			
13:30-13:45	SaCT2.1	<b>Real-Time Mental State Recognition using a Wearable EEG</b> Richer, Robert* ( <i>Friedrich-Alexander-Univ. Erlangen-Nürnberg (FAU), Germany</i> ); Zhao, Nan ( <i>MIT Media Lab</i> ); Amores, Judith ( <i>MIT Media Lab</i> ); Eskofier, B.M. ( <i>Friedrich-Alexander-Univ. Erlangen-Nürnberg</i> )	14:15-14:30	SaCT3.4	<b>Auditory-Visual Convergence at the Superior Colliculus in Rat using Functional MRI</b> Lau, Condon ( <i>City University of Hong Kong</i> ); Manno, Francis AM ( <i>City University of Hong Kong</i> ); Dong, Celia M. ( <i>University of Hong Kong</i> ); Chan, Kevin C. ( <i>New York University</i> ); Wu, Ed X.* ( <i>University of Hong Kong</i> )
13:45-14:00	SaCT2.2	<b>SpiroConfidence: Determining the Validity of Smartphone based Spirometry using Machine Learning</b> Viswanath, Varun* ( <i>Univ. of Washington</i> ); Garrison, Jake ( <i>Univ. of Washington</i> ); Patel, Shwetak ( <i>Univ. of Washington</i> )	14:30-14:45	SaCT3.5	<b>A Realistic Neuronal Network and Neurovascular Coupling Model for the Study of Multivariate Directed Connectivity in fMRI Data</b> Duggento, Andrea* ( <i>University of Rome "Tor Vergata"</i> ); Passamonti, Luca ( <i>University of Cambridge</i> ); Guerrisi, Maria ( <i>University of Rome "Tor Vergata"</i> ); Toschi, Nicola ( <i>University of Rome "Tor Vergata", Faculty of Medicine</i> )
14:00-14:15	SaCT2.3	<b>Smartphone based Real-Time Super Gaussian Single Microphone Speech Enhancement to Improve Intelligibility for Hearing Aid Users using Formant Information</b> Shreedhar Bhat, Gautam* ( <i>Univ. of Texas at Dallas</i> ); Karadagur Ananda Reddy, Chandan ( <i>Univ. of Texas at Dallas</i> ); Shankar, Nikhil ( <i>Univ. of Texas at Dallas</i> ); Panahi, Issa ( <i>Univ. of Texas at Dallas</i> )	14:45-15:00	SaCT3.6	<b>Regularized Spatial Filtering Method (R-SFM) for Detection of Attention Deficit Hyperactivity Disorder (ADHD) from Resting-State Functional Magnetic Resonance Imaging (rs-fMRI)</b> M S Aradhya, Abhay* ( <i>Nanyang Technological Univ.</i> ); Subbaraju, Vigneshwaran ( <i>Agency for Science Technology and Research, Singapore</i> ); Sundaram, Suresh ( <i>Nanyang Technological Univ.</i> ); Sundararajan, Narasimhan ( <i>Nanyang Technological Univ.</i> )
14:15-14:30	SaCT2.4	<b>Effect of Parkinsonism on Proximal Unstructured Movement Captured by Inertial Sensors</b> Phan, Dung* ( <i>Deakin University</i> ); Horne, Malcolm ( <i>Florey Institute of Neuroscience and Mental Health</i> ); Pathirana, Pubudu N. ( <i>Deakin University</i> ); Farzanehfars, Parisa ( <i>Florey Institute of Neuroscience and Mental Health</i> )			
14:30-14:45	SaCT2.5	<b>End-to-End Learning for Measuring In-Meal Eating Behavior from a Smartwatch</b> Kyritsis, Konstantinos ( <i>Aristotle University of Thessaloniki</i> ); Diou, Christos ( <i>Aristotle University of Thessaloniki</i> ); Delopoulos, Anastasios* ( <i>Aristotle University of Thessaloniki</i> )			
14:45-15:00	SaCT2.6	<b>Robust Estimation of Pulse Rate from a Wrist-Type PPG during Intensive Exercise</b> Pittara, M. ( <i>Univ. of Cyprus</i> ); Orphanidou, C.* ( <i>Univ. of Cyprus</i> )			
SaCT3: 13:30-15:00		Meeting Room 314			
		<b>Functional Image Analysis (Theme 2) (Oral Session)</b> <b>Chair:</b> Chan, Kevin C. ( <i>New York University</i> ) <b>Co-Chair:</b> Toschi, Nicola ( <i>University of Rome</i> )			
13:30-13:45	SaCT3.1	<b>Functional MRI of Sensory Substitution in the Blind</b> Chan, Kevin C.* ( <i>New York Univ.</i> ); Murphy, Matthew ( <i>Mayo Clinic</i> ); Bang, Ji Won ( <i>New York Univ. School of Medicine</i> ); Sims, Jeffrey ( <i>New York Univ. School of Medicine</i> ); Kashkoush, Jasmine ( <i>New York Univ. School of Medicine</i> ); Nau, Amy C. ( <i>Univ. of Pittsburgh</i> )	14:00-14:15	SaCT4.3	<b>A Low-Power Dynamic-Range Relaxed Analog Front End for Photoelectrochromic Acquisition</b> Zhang, Hao ( <i>Shenzhen Institutes of Advanced Technology</i> ); Junxiang, Wang ( <i>Shenzhen Institutes of Advanced Technology</i> ); Li, Ye* ( <i>Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences</i> )

14:15-14:30 SaCT4.4  
**Measuring Weight and Location of Individual Bites using a Sensor Augmented Smart Plate**  
 Mertes, Gert\* (*KU Leuven*); Christiaensen, Glenn (*KU Leuven*); Hallez, Hans (*KU Leuven*); Verslype, Sammy (*KU Leuven*); Chen, Wei (*Fudan Univ.*); Vanrumste, Bart (*Katholieke Univ. Leuven*)

14:30-14:45 SaCT4.5  
**Motion Artefact Free Magnetoplethysmogram**  
 Kumar V, Jagadeesh\* (*Indian Institute of Technology, Madras*); Bai J, Rezuana (*Indian Institute of Technology, Madras*); Sivaprakasam, Mohanasankar (*Indian Institute of Technology Madras*)

14:45-15:00 SaCT4.6  
**A 5-ms Error, 22-uA Photoplethysmography Sensor using Current Integration Circuit and Correlated Double Sampling**  
 Watanabe, Kento\* (*Kobe University*); Izumi, Shintaro (*Kobe University*); Yano, Yuji (*Kobe University*); Kawaguchi, Hiroshi (*Kobe University*); Yoshimoto, Masahiko (*Kobe University*)

SaCT5: 13:30-15:00 Meeting Room 316A  
**Image Reconstruction (II) (Theme 2) (Oral Session)**

13:30-13:45 SaCT5.1  
**Limited-View CT Reconstruction based on Autoencoder-Like Generative Adversarial Networks with Joint Loss**  
 Bai, Jianan (*College of Geographic and Biologic Information, Nanjing Univ. of Posts and Telecommunications*); Dai, Xiubin\* (*Nanjing Univ. of Posts and Telecommunications*); Wu, Qingjiang (*College of Geographic and Biologic Information, Nanjing Univ. of Posts and Telecommunications*); Xie, Lizhe (*Jiangsu Province Key Lab of Oral Disease, Nanjing Medical Univ.*)

13:45-14:00 SaCT5.2  
**Evaluation of Different Types of Filters in Magnetic Resonance Imaging using Compressive Sensing with Pre-Filtering**  
 Lima, Jonathan Alis\* (*Univ. de Brasilia*); Miosso, Cristiano (*Univ. of Brasilia at Gama*); Farias, Mylène (*Univ. of Brasilia (UnB)*); von Borries, Ricardo F. (*The Univ. of Texas at El Paso*)

14:00-14:15 SaCT5.3  
**A New ROI-Based Performance Evaluation Method for Image Denoising using the Squared Eigenfunctions of the Schrödinger Operator**  
 Chahid, Abderrazak\* (*King Abdullah Univ. of Science and Tech.*); Serrai, Hacene (*Institute for Biodiagnostics - National Research Council Canada*); Achten, Eric (*Univ. of Gent*); Laleg, Taous-Meriem (*King Abdullah Univ. of Science and Tech. (KAUST)*)

14:15-14:30 SaCT5.4  
**KSR-NLM: A Non Local Means Despeckling Filter for Ultrasound Images based on Ratio Patch and KS Distance**  
 Ambrosanio, Michele\* (*Univ. of Napoli Parthenope*); Baselice, Fabio (*Univ. of Napoli Parthenope*); Ferraioli, Giampaolo (*Univ. of Napoli Parthenope, Dipartimento di Scienze e Tecnologia*)

SaCT6: 13:30-15:00 Meeting Room 316B  
**Neuromuscular Systems (III) (Theme 6) (Oral Session)**

13:30-13:45 SaCT6.1  
**Applying Entropy to Human Center of Foot Pressure Data to Assess Attention Investment in Balance Control**  
 Franco, Céline (*TIMC-IMAG*); Fleury, Anthony\* (*IMT Lille Douai*); Diot, Bruno (*IDS SA*); Vuillerme, Nicolas (*University Grenoble Alpes, AGEIS, France*)

13:45-14:00 SaCT6.2  
**A Neuro-Musculo-Skeletal Model of Human Standing Combining Muscle-Reflex Control and Virtual Model Control**  
 Suzuki, Yasuyuki\* (*Osaka University*); Geyer, Hartmut (*Carnegie Mellon University*)

14:00-14:15 SaCT6.3  
**Improving Perception of Perturbations and Balance using a Novel Dynamic Computerized Biofeedback based Intervention after Traumatic Brain Injury**  
 Tanis, Daniel (*Kessler Foundation*); Pilkar, Rakesh\* (*Kessler Foundation - Rutgers NJMS*); Ibironke, Oluwaseun (*Kessler Foundation*); Nolan, Karen J. (*Kessler Foundation*)

14:15-14:30 SaCT6.4  
**Assessment of Attention Demand for Balance Control using a Smartphone: Implementation and Evaluation**  
 Fleury, Anthony\* (*IMT Lille Douai*); Mourcou, Quentin (*WEGOTO*); Franco, Céline (*TIMC-IMAG*); Vuillerme, Nicolas (*University Grenoble Alpes, AGEIS, France*); Diot, Bruno (*IDS SA*)

14:30-14:45 SaCT6.5  
**Emergence of Lissajous Patterns as a Function of a Perturbation Frequency in Postural Responses to the Short Sinusoidal Translations of Varying Frequencies**  
 Pilkar, Rakesh\* (*Kessler Foundation - Rutgers NJMS*); Robinson, Charles (*Clarkson University*)

14:45-15:00 SaCT6.6  
**Information Encoding Methods for Balance Assist Device using Vibrotactile Feedback**  
 Fukuoka, Yutaka\* (*Kogakuin University*); Nozawa, Tatsuya (*Kogakuin University*); Fukuda, Yosuke (*Kogakuin University*)

SaCT7: 13:30-15:00 Meeting Room 316C  
**Signal Processing and Classification: Heart Rate Variability (Theme 1) (Oral Session)**  
**Chair:** Barbieri, Riccardo (*Politecnico di Milano*)

13:30-13:45 SaCT7.1  
**Reliability of Short-Term Heart Rate Variability Indexes Assessed through Photoplethysmography**  
 Pernice, Riccardo (*Univ. of Palermo*); Javorka, Michal\* (*Comenius Univ., Jessenius Faculty of Medicine*); Krohova, Jana (*Comenius Univ. in Bratislava*); Czipelova, Barbora (*Dept. of Physiology, Comenius Univ., Jessenius Faculty of Medicine*); Turianikova, Zuzana (*Dept. of Physiology, Comenius Univ., Jessenius Faculty of Medicine*); Busacca, Alessandro (*Università degli Studi di Palermo*); Faes, Luca (*Univ. of Palermo*)

13:45-14:00 SaCT7.2  
**Heart Rate Variability during Periods of Low Blood Pressure as a Predictor of Short-Term Outcome in Preterms**  
 Semenova, Oksana\* (*University College Cork*); Carra, Giorgia (*Lab of Intensive Care Medicine, KU Leuven*); Lightbody, Gordon (*University College Cork*); Boylan, Geraldine (*University College Cork*); Dempsey, Eugene (*Irish Centre for Fetal and Neonatal Translational Research (INFANT), University College Cork*); Temko, Andriy (*University College Cork*)

14:00-14:15 SaCT7.3  
**Towards Objective Olfactory Evaluation based on Peripheral Arterial Stiffness and Heart Rate Variability Indices**  
 Totsuka, Masaaki\* (*Hiroshima Univ.*); Soh, Zu (*Dept. of System Cybernetics, Institute of Engineering, Hiroshima Univ.*); Sasaoka, Takafumi (*Hiroshima Univ.*); Yamawaki, Shigeto (*Hiroshima Univ.*); Tsuji, Toshio (*Hiroshima Univ.*)

14:15-14:30 SaCT7.4  
**Continuous Pain Intensity Estimation from Autonomic Signals with Recurrent Neural Networks**  
 Lopez-Martinez, Daniel\* (*Massachusetts Institute of Technology*); Picard, Rosalind (*Massachusetts Institute of Technology*)

14:30-14:45	SaCT7.5	<b>ECG-Derived Sympathetic and Parasympathetic Activity in the Healthy: An Early Lower-Body Negative Pressure Study using Adaptive Kalman Prediction</b> Valenza, Gaetano* ( <i>University of Pisa</i> ); Citi, Luca ( <i>University of Essex</i> ); Wyller, Vegard Bruun ( <i>University of Oslo</i> ); Barbieri, Riccardo ( <i>Politecnico di Milano</i> )	13:45-14:00	SaCT10.2	<b>Principal Component Analysis of Dynamic Thermography Data from Pregnant and Non-Pregnant Women</b> Falzon, Owen* ( <i>Univ. of Malta</i> ); Ciantar, Annelie ( <i>Univ. of Malta</i> ); Sammut, Lara ( <i>Mater Dei Hospital</i> ); Schembri, Martina ( <i>Mater Dei Hospital</i> ); Muscat Baron, Yves ( <i>Dept. of Obstetrics and Gynaecology</i> ); Calleja-Agius, Jean ( <i>Faculty of Medicine and Surgery</i> ); Demicoli, Pierre ( <i>Univ. of Malta</i> ); Camilleri, Kenneth Patrick ( <i>Univ. of Malta</i> )
14:45-15:00	SaCT7.6	<b>Noise Detection in Electrocardiography Signal for Robust Heart Rate Variability Analysis: A Deep Learning Approach</b> Ansari, Sardar* ( <i>Univ. of Michigan</i> ); Gryak, Jonathan ( <i>Univ. of Michigan</i> ); Najarian, Kayvan ( <i>Univ. of Michigan - Ann Arbor</i> )	14:00-14:15	SaCT10.3	<b>Registration of Dynamic Thermography Data of the Abdomen of Pregnant and Non-Pregnant Women</b> Ciantar, Annelie ( <i>University of Malta</i> ); Falzon, Owen* ( <i>University of Malta</i> ); Sammut, Lara ( <i>Mater Dei Hospital</i> ); Schembri, Martina ( <i>Mater Dei Hospital</i> ); Muscat Baron, Yves ( <i>Dept. of Obstetrics and Gynaecology</i> ); Calleja-Agius, Jean ( <i>Faculty of Medicine and Surgery</i> ); Demicoli, Pierre ( <i>University of Malta</i> ); Camilleri, Kenneth Patrick ( <i>University of Malta</i> )
SaCT9: 13:30-15:00		Meeting Room 318B			
		<b>Biomedical Signal Classification: Electromyography (II) (Theme 1) (Oral Session)</b>			
13:30-13:45	SaCT9.1	<b>Surface EMG Pattern Recognition using Long Short-Term Memory Combined with Multilayer Perceptron</b> He, Yunan* ( <i>Saga University</i> ); Fukuda, Osamu ( <i>Saga University</i> ); Bu, Nan ( <i>NIT, Kumamoto College</i> ); Okumura, Hiroshi ( <i>Saga University</i> ); Yamaguchi, Nobuhiko ( <i>Saga University</i> )	14:15-14:30	SaCT10.4	<b>Multispectral Camera Fusion increases Robustness of ROI Detection for Biosignal Estimation with Nearables in Real-World Scenarios</b> Scebba, Gaetano* ( <i>ETH Zurich</i> ); Tüshaus, Laura Margarete ( <i>ETH Zurich</i> ); Karlen, Walter ( <i>ETH Zurich</i> )
13:45-14:00	SaCT9.2	<b>Rejection of Systemic and Operator Errors in a Real-Time Myoelectric Control Task</b> Robertson, Jason William ( <i>University of New Brunswick</i> ); Englehart, Kevin ( <i>University of New Brunswick</i> ); Scheme, Erik* ( <i>University of New Brunswick</i> )	SaCT12: 13:30-15:00		
			Meeting Room 321A		
			<b>Heart Rate Measurement (Theme 5) (Oral Session)</b>		
			<b>Chair:</b> Jané, Raimon ( <i>Institut de Bioenginyeria de Catalunya (IBEC)</i> )		
14:00-14:15	SaCT9.3	<b>Fault-Tolerant Sensor Detection of sEMG Signals: Quality Analysis using a Two-Class Support Vector Machine</b> de Moura, Karina de Oliveira Alves ( <i>Federal University of Rio Grande do Sul (UFRGS)</i> ); Ruschel dos Santos, Raphael* ( <i>Universidade Federal do Rio Grande do Sul</i> ); Balbinot, Alexandre ( <i>Federal University of Rio Grande do Sul (UFRGS)</i> )	13:30-13:45	SaCT12.1	<b>Remote Heart Rate Measurement from RGB-NIR Video based on Spatial and Spectral Face Patch Selection</b> Kado, Shiiika* ( <i>Tokyo Institute of Technology</i> ); Monno, Yusuke ( <i>Tokyo Institute of Technology</i> ); Moriwaki, Kenta ( <i>Tokyo Institute of Technology</i> ); Yoshizaki, Kazunori ( <i>Olympus Corp.</i> ); Tanaka, Masayuki ( <i>National Institute of Advanced Industrial Science and Technology</i> ); Okutomi, Masatoshi ( <i>Tokyo Institute of Technology</i> )
14:15-14:30	SaCT9.4	<b>Non-Invasive Detection of Low-Level Muscle Fatigue using Surface EMG with Wavelet Decomposition</b> Zhang, Guangyi* ( <i>Central South University</i> ); Morin, Evelyn ( <i>Queen's University</i> ); Zhang, Yaoxue ( <i>Central South University</i> ); Etemad, S. Ali ( <i>Queen's University</i> )	13:45-14:00	SaCT12.2	<b>Electrocardiogram Derived Respiratory Signal through the Segmented-Beat Modulation Method</b> Pambianco, Benedetta ( <i>Univ. Politecnica Delle Marche</i> ); Sbröllini, Agnese ( <i>Univ. Politecnica delle Marche</i> ); Marcantoni, Ilaria ( <i>Univ. Politecnica delle Marche</i> ); Morettini, Micaela ( <i>Univ. Politecnica delle Marche</i> ); Fioretti, Sandro ( <i>Univ. Politecnica delle Marche</i> ); Burattini, Laura* ( <i>Univ. Politecnica delle Marche</i> )
14:30-14:45	SaCT9.5	<b>Improving Myoelectric Pattern Recognition Robustness to Electrode Shift by Autoencoder</b> Lyu, Bo ( <i>Shanghai Jiao Tong Univ.</i> ); Sheng, Xinjun* ( <i>Shanghai Jiao Tong Univ.</i> ); Zhu, Xiangyang ( <i>Shanghai Jiao Tong Univ.</i> )	14:00-14:15	SaCT12.3	<b>A Chair based Ballistocardiogram Time Interval Measurement with Cardiovascular Provocations</b> Rajala, Satu* ( <i>Nokia Technologies</i> ); Ahmaniemi, Teemu ( <i>Nokia Technologies</i> ); Lindholm, Harri ( <i>Nokia Technologies</i> ); Taipalus, Tapio ( <i>Nokia Technologies</i> ); Müller, Kiti ( <i>Nokia Bell Labs</i> )
14:45-15:00	SaCT9.6	<b>Measuring Complexity in Different Muscles during Sustained Contraction using Fractal Properties of SEMG Signal</b> Poosapadi Arjunan, Sridhar* ( <i>SRM Institute of Science and Technology</i> ); Kant Kumar, Dinesh ( <i>RMIT University</i> )	14:15-14:30	SaCT12.4	<b>R-R Interval Outlier Exclusion Method based on Statistical ECG Values Targeting HRV Analysis using Wearable ECG Devices</b> Eguchi, Kana* ( <i>NTT Corp.</i> ); Aoki, Ryosuke ( <i>NTT Corp.</i> ); Yoshida, Kazuhiro ( <i>NTT Service Evolution Labs</i> ); Yamada, Tomohiro ( <i>NTT</i> )
SaCT10: 13:30-15:00		Meeting Room 319A			
		<b>Thermal, IR and Microwave Imaging (Theme 2) (Oral Session)</b>			
13:30-13:45	SaCT10.1	<b>Effects of Interpatient Variance on Microwave Breast Images: Experimental Evaluation</b> O'Loughlin, Declan* ( <i>National Univ. of Ireland Galway</i> ); Oliveira, Bárbara L. ( <i>National Univ. of Ireland Galway</i> ); Glavin, Martin ( <i>National Univ. of Ireland</i> ); Jones, Edward ( <i>National Univ. of Ireland Galway</i> ); O'Halloran, Martin ( <i>National Univ. of Ireland, Galway</i> )	14:30-14:45	SaCT12.5	<b>Consideration of Calculation Process Assuming Heart Rate Variability Analysis using Wearable ECG Devices</b> Aoki, Ryosuke ( <i>NTT Corp.</i> ); Eguchi, Kana* ( <i>NTT Corp.</i> ); Shimauchi, Suehiro ( <i>NTT Corp.</i> ); Yoshida, Kazuhiro ( <i>NTT Service Evolution Labs</i> ); Yamada, Tomohiro ( <i>NTT</i> )
			14:45-15:00	SaCT12.6	<b>Heart Rate Variability Analysis on CEBS Database Signals</b> Siecinski, Szymon* ( <i>Silesian University of Technology, Faculty of BioMedical Engineering</i> ); Kostka, Pawel Stanislaw ( <i>Silesian University of Technology</i> ); Tkacz, Ewaryst ( <i>Silesian University of Tech, Faculty of BioMedical Engineering</i> )

SaCT14: 13:30-15:00 Meeting Room 322AB  
**Therapeutic Ultrasound (I) (Theme 9) (Oral Session)**  
**Chair:** Almekkawy, Mohamed (*Penn State University*)

13:30-13:45 SaCT14.1  
**The Effect of Tissue Physiological Variability on Transurethral Ultrasound Therapy of the Prostate**  
 Suomi, Visa\* (*Turku Univ. Hospital*); Treeby, Bradley E. (*Univ. College London*); Jaros, Jiri (*Brno Univ. of Technology*); Saunavaara, Jani (*Turku Univ. Hospital*); Kiviniemi, Aida (*Turku Univ. Hospital*); Blanco, Roberto (*Turku Univ. Hospital*)

13:45-14:00 SaCT14.2  
**Ex Vivo Assessment of Multiple Parameters in High Intensity Focused Ultrasound**  
 Simoni, Virginia (*Scuola Superiore Sant'Anna*); Cafarelli, Andrea (*Scuola Superiore Sant'Anna*); Tognarelli, Selene (*Scuola Superiore Sant'Anna*); Menciasci, Arianna\* (*Scuola Superiore Sant'Anna*)

14:00-14:15 SaCT14.3  
**Patient Specific Simulation of HIFU Kidney Tumour Ablation**  
 Abbas, Magda Abdelbasit\* (*Univ. of Oxford*); Coussios, Constantin-C (*Univ. of Oxford*); Cleveland, Robin (*Univ. of Oxford*)

14:15-14:30 SaCT14.4  
**Ultrasound Acoustic Radiation Force Impulse Imaging for High Intensity Focused Ultrasound Focal Spot Localization**  
 Cafarelli, Andrea (*Scuola Superiore Sant'Anna*); Chaneil, Laure-Anais (*Univ. of Strasbourg*); Di Bartolo, Francesco (*Scuola Superiore Sant'Anna*); Locteau, Hervé (*Image Guided Therapy*); Tognarelli, Selene (*Scuola Superiore Sant'Anna*); Dumont, Erik (*Image Guided Therapy*); Menciasci, Arianna\* (*Scuola Superiore Sant'Anna*)

14:30-14:45 SaCT14.5  
**Ultrasound-Enhanced Ciclopirox Delivery for Treatment of Onychomycosis**  
 Kline-Schoder, Alina\* (*George Washington Univ.*); Le, Zung (*George Washington Univ.*); Zderic, V. (*George Washington Univ.*)

SaCT15: 13:30-15:00 Meeting Room 323A  
**Cell-Based Engineering (Theme 3) (Oral Session)**  
**Chair:** Hradetzky, David (*School of Life Sciences*)  
**Co-Chair:** Sonkusale, Sameer (*Tufts University*)

13:30-13:45 SaCT15.1  
**Comparative Study of Pore Formation Energy by High Intensity, Nanosecond Electrical Pulse**  
 Qiu, Hao (*Fort Valley State University*); Wang, Xianping\* (*Southeast Missouri State University*); Choi, Anthony (*Mercer University*); Zhao, Wenbing (*Cleveland State University*)

13:45-14:00 SaCT15.2  
**Method for Analysis of Electrospray for Gene Transfer and the Impact on Cell Viability of A549 Alveolar Epithelial Like Cells**  
 Hradetzky, David\* (*School of Life Sciences*); Boehringer, Stephan (*University of Applied Sciences, School of Life Sciences, Institut for Medical- and Analytical Technologies*); Ruzgys, Paulius (*Vytautas Magnus University*); Šatkauskas, Saulius (*Vytautas Magnus University*); Geiser, Thomas (*University Hospital Bern, Dept. of Clinical Research*); Gazdhar, Amiq (*University Hospital Bern, Dept. of Clinical Research*)

14:00-14:15 SaCT15.3  
**Rapid Prototyping Method for 3D Printed Biomaterial Constructs with Vascular Structures**  
 Gullo, Maurizio R. (*Univ. of Applied Sciences and Arts Northwestern Switzerland*); Koeser, Joachim (*Univ. of Applied Sciences and Arts Northwestern Switzerland*); Ruckli, Oliver (*Univ. of Applied Sciences and Arts Northwestern Switzerland*); Eigenmann, Andrej (*Univ. of Applied Sciences and Arts Northwestern Switzerland*); Hradetzky, David\* (*School of Life Sciences*)

14:15-14:30 SaCT15.4  
**Fabrication and Optimization of Dp44mT-Loaded Nanoparticles**  
 Holley, Claire (*University of Houston*); Alkhalifah, Sukaina (*University of Houston*); Majd, Sheereen\* (*University of Houston*)

14:30-14:45 SaCT15.5  
**Cost-Effective Fabrication of Chitosan Microneedles for Transdermal Drug Delivery**  
 Sadeqi, Aydin (*Tufts Univ.*); Rezaei Nejad, Hojatollah (*Tufts Univ.*); Kiaee, Gita (*Tufts Univ.*); Sonkusale, Sameer\* (*Tufts Univ.*)

14:45-15:00 SaCT15.6  
**Microbes Culture System using Cellulose Tubes and Photocatalyst-Coated Glass Balls**  
 Saito, Kaoru\* (*Keio Univ.*); Fujimoto, Kazuma (*Keio Univ.*); Higashi, Kazuhiko (*Keio Univ.*); Miki, Norihisa (*Univ.*)

SaCT16: 13:30-15:00 Meeting Room 323B  
**Health Informatics – Behavioral Health Informatics (Theme 10) (Oral Session)**

13:30-13:45 SaCT16.1  
**Time-Series Prediction of Proximal Aggression Onset in Minimally-Verbal Youth with Autism Spectrum Disorder using Physiological Biosignals**  
 Ozdenizci, Ozan\* (*Northeastern Univ.*); Cumpanasoiu, Catalina (*Northeastern Univ.*); Mazefsky, Carla (*Univ. of Pittsburgh*); Siegel, Matthew (*Maine Medical Center Research Institute*); Erdogmus, Deniz (*Northeastern Univ.*); Ioannidis, Stratis (*Northeastern Univ.*); Goodwin, Matthew (*Northeastern Univ.*)

13:45-14:00 SaCT16.2  
**Citizen-Centric Web-Based Health Profiling Service: A Service Concept and a Profiling Method**  
 Honka, Anita\* (*VTT Technical Research Center of Finland*); Vainikainen, Sari (*VTT Technical Research Centre of Finland Ltd.*); Similä, Heidi (*VTT Technical Research Centre of Finland Ltd.*); Mattila, Elina (*VTT*); Leppänen, Juha (*VTT*); Kinnunen, Timo (*VTT Technical Research Centre of Finland Ltd.*); Ermes, Miikka (*VTT Technical Research Centre*)

14:00-14:15 SaCT16.3  
**Eliminating Individual Bias to Improve Stress Detection from Multimodal Physiological Data**  
 Das, Deepan\* (*Tata Consultancy Services*); Datta, Shreyasi (*Tata Consultancy Services*); Bhattacharjee, Tanuka (*Research & Innovation, Tata Consultancy Services, India*); Dutta Choudhury, Anirban (*Tata Consultancy Services Ltd.*); Pal, Arpan (*Tata Consultancy Services*)

14:15-14:30 SaCT16.4  
**The Importance of Field Experiments in Testing of Sensors for Dietary Assessment and Eating Behavior Monitoring**  
 Doulah, Abul (*University of Alabama*); Yang, Xin (*University of Alabama*); Parton, Jason (*University of Alabama*); Higgins, Janine (*The University of Colorado*); McCrory, Megan (*Boston University*); Sazonov, Edward\* (*University of Alabama*)

14:30-14:45 SaCT16.5  
**Depression Severity Classification from Speech Emotion**  
 Harati, Sahar\* (*Emory University*); Crowell, Andrea (*Emory University*); Mayberg, Helen (*Emory University*); Nemati, Shamim (*Emory University School of Medicine*)

SaCT17: 13:30-15:00 Meeting Room 323C  
**Integrated Sensor Systems (Theme 7) (Oral Session)**

13:30-13:45 SaCT17.1  
**Detection of Infant Motor Activity during Spontaneous Kicking Movements for Term and Preterm Infants using Inertial Sensors**  
 Fry, Katelyn\* (*Georgia Institute of Tech.*); Chen, Yuping (*Georgia State University*); Howard, Ayanna (*Georgia Institute of Tech.*)

- 13:45-14:00 SaCT17.2  
**Center of Gravity Tracker for Operator Fatigue Detection**  
 Owen, Elliot (*Massachusetts Institute of Tech.*); Maeda, Tomohiro (*Massachusetts Institute of Tech.*); Jiang, Ziwen (*Massachusetts Institute of Tech.*); Udotong, Isaiah (*Massachusetts Institute of Tech.*); Hornberger, Erik (*Sumitomo Heavy Industries, Ltd.*); Morita, Junichi (*Sumitomo Heavy Industries, Ltd.*); Hom, Gim (*Massachusetts Institute of Tech.*); Hanumara, Nevan\* (*Massachusetts Institute of Tech.*)
- 14:00-14:15 SaCT17.3  
**A Practical Method to Reduce Electrode Mismatch Artefacts during 4-Electrode BioImpedance Spectroscopy Measurements**  
 Montalibet, Amalric (*INL UMR-5270 - INSA Lyon*); McAdams, Eric\* (*INSA Lyon*)
- 14:15-14:30 SaCT17.4  
**Design and Validation of Front-End Voltage Follower for Capacitive Electrocardiogram Measurement using Bootstrapping Technique**  
 Nakamura, Hajime\* (*Tokyo Denki University*); Kato, Yuki (*Tokyo Denki University*); Ueno, Akinori (*Tokyo Denki University*)
- 14:30-14:45 SaCT17.5  
**InPhysible: Camouflage against Video-Based Physiological Measurement**  
 McDuff, Daniel Jonathan\* (*Microsoft*); Hurter, Christophe (*ENAC French Civil Aviation University, Toulouse University*)
- 14:45-15:00 SaCT17.6  
**Qualification of Wrist Functional Performance during Dart Thrower's Movement**  
 Nguyen, Nhan\* (*Deakin University*); Pham, Trieu H. (*Deakin University*); Pathirana, Pubudu N. (*Deakin University*); Babazadeh, Sina (*Barwon Orthopaedic Research Unit, Barwon Health, University Hospital Geelong*); Page, Richard (*Barwon Orthopaedic Research Unit, Barwon Health, University Hospital Geelong*); Seneviratne, Aruna (*CSIRO's Data61*)
- SaCT18: 13:30-15:00 Meeting Room 324  
**Point of Care Technologies and Translation (II) (Theme 12) (Oral Session)**
- 13:30-13:45 SaCT18.1  
**A Touchless System for Image Visualization during Surgery: Preliminary Experience in Clinical Settings**  
 Massaroni, Carlo\* (*Univ. Campus Bio-Medico di Roma*); Giurazza, Francesco (*Univ. Campus Bio-Medico di Roma*); Tesei, Marco (*Univ. Campus Bio-Medico di Roma*); Schena, Emiliano (*Univ. of Rome Campus Bio-Medico*); F., Corvino (*Interventional Radiology Dept., AORN "A. Cardarelli"*); Meneo, Marco (*Proge-Software Srl*); Corletti, Luigi (*Proge-Software s.r.l.*); Niola, Raffaella (*A.O.R.N. Cardarelli*); Setola, Roberto (*Univ. CAMPUS Bio-Medico*)
- 13:45-14:00 SaCT18.2  
**Integrated IoT Intelligent System for the Automatic Detection of Cardiac Variability**  
 Martínez-Millana, Antonio (*Universidad Politécnica de Valencia*); Palao-Cruz, Carmen (*ITACA. Universitat Politècnica de València*); Fernandez-Llatas, Carlos (*Universidad Politécnica de Valencia*); de Carvalho, Paulo (*University of Coimbra*); Bianchi, Anna Maria (*Politecnico di Milano*); Traver, Vicente\* (*ITACA - Universitat Politècnica de València*)
- 14:00-14:15 SaCT18.3  
**An Interactive, Patient-Specific Virtual Surgical Planning System for Upper Airway Obstruction Treatments**  
 Clipp, Rachel\* (*Kitware, Inc.*); Vicory, Jared (*Kitware, Inc.*); Horvath, Samantha (*Kitware, Inc.*); Mitran, Sorin (*University of North Carolina*); Kimbell, Julia (*University of North Carolina at Chapel Hill*); Rhee, John (*Medical College of Wisconsin*); Enquobahrie, Andinet (*Kitware, Inc.*)
- 14:15-14:30 SaCT18.4  
**Towards Mobile Gaze-Directed Beamforming: A Novel Neuro-Technology for Hearing Loss**  
 Anderson, Markham (*University of California, Davis*); Yazel, Britt\* (*University of California, Davis*); Stickle, Matthew (*University of California, Davis*); Espinosa, Fernando (*University of California, Davis*); Gutierrez, Nathaniel-Georg (*University of California, Davis*); Slaney, Malcolm (*Google*); Joshi, Sanjay (*University of California, Davis*); Miller, Lee (*University of California, Davis*)
- 14:30-14:45 SaCT18.5  
**Enfold-Type Connecting System of Artificial Blood Vessels for Micro Implantable Dialysis Device**  
 Watanabe, Ai\* (*Keio Univ.*); Ota, Takashi (*Keio Univ.*); Kanno, Yoshihiko (*Tokyo Medical Univ.*); Miki, Norihisa (*Univ.*)
- 14:45-15:00 SaCT18.6  
**Protein Separation and Hemocompatibility in Nitride Membrane Microfluidic Filtration Systems**  
 Salminen, Alec (*Univ. of Rochester*); Hill, Kayli (*University of Rochester*); Chung, Hung Li (*Rochester Institute of Technology*); McGrath, James (*University of Rochester*); Johnson, Dean G.\* (*University of Rochester*)
- SaCT19: 13:30-15:00 Meeting Room 325A  
**Bioinformatics – Computational Modeling and Simulations in Biology, Physiology and Medicine (Theme 10) (Oral Session)**
- 13:30-13:45 SaCT19.1  
**Model-Driven Classification of Different Diabetes Types within a Personalized Diabetes Management**  
 Tolks, Christian\* (*Augsburg University*); Ament, Christoph (*Augsburg University*); Eberle, Claudia (*Hochschule Fulda - University of Applied Sciences*)
- 13:45-14:00 SaCT19.2  
**A Meta-Analysis of Pulse Arrival Time based Blood Pressure Estimation**  
 Polinski, Artur (*Gdansk University of Technology*); Pietrewicz, Michal (*Gdansk University of Technology*); Kocejko, Tomasz (*Gdansk University of Technology*); Bujnowski, Adam (*Gdansk University of Technology*); Ruminski, Jacek\* (*Gdansk University of Technology*); Wtorek, Jerzy (*Gdansk University of Technology*)
- 14:00-14:15 SaCT19.3  
**Changes in Differential Expression of Genes in Normal and Metabolically Suppressed Mice in Response to Radiation**  
 Chen, Richard\* (*Univ. of Alaska Fairbanks*); Mora, Jason (*California State Univ.*); Muvvala, M. (*Burrell College of Osteopathic Medicine*); Nemeth, Daniel (*Palo Alto High School*); Wu, Derek (*Mission San Jose High School*); Griko, Yuri (*NASA Ames Research Center*)
- 14:15-14:30 SaCT19.4  
**Robust Control Design of Heart Rate Response during Treadmill Exercise under Parametric Uncertainty**  
 Du, Yuncheng (*Clarkson Univ.*); Du, Dongping\* (*Texas Tech Univ.*)
- 14:30-14:45 SaCT19.5  
**Bioinformatics and Regression Analyses Manifest Tumor-Specific miRNA Expression Dynamics in Pediatric Embryonal Malignancies**  
 Braoudaki, Maria (*National and Kapodistrian Univ. of Athens, First Dept. of Pediatrics*); Koutsouris, Dimitrios (*BioMedical Engineering Lab, School of Electrical and Computer Engineering, National Technical Univ. of Athens*); Kouris, Ioannis\* (*National Technical Univ. of Athens*); Lambrou, George I. (*National and Kapodistrian Univ. of Athens*); Paidi, Anna (*National Technical Univ. of Athens*); Koutsouri, Georgia (*BioMedical Engineering Lab, National Technical Univ. of Athens*)
- 14:45-15:00 SaCT19.6  
**Effect of Gating Charges on Mediating the Dual Activation of BK Channels in Smooth Muscle Cells: A Computational Study**  
 Gupta, Suranjana\* (*IIT Bombay*); Manchanda, Rohit (*IIT Bombay*)



SaCT20: 13:30-15:00 Meeting Room 325B  
**Models of Cells and Tissues (Theme 4)** (Oral Session)  
**Chair:** Patton, James (*University Illinois at Chicago (UIC) & The Shirley Ryan AbilityLab (formerly RIC)*)

13:30-13:45 SaCT20.1  
**Cellular Environment in a Bundle Modulates SEJP Characteristics in Detrusor Smooth Muscle**  
 Sengupta, Nilapratim\* (*Indian Institute of Technology Bombay*); Brain, Keith L. (*Univ. of Birmingham*); Manchanda, Rohit (*IIT Bombay*)

13:45-14:00 SaCT20.2  
**Understanding Ductal Carcinoma in Situ Invasion using a Multiscale Agent-Based Model**  
 Butner, Joseph (*University of New Mexico*); Cristini, Vittorio (*University of New Mexico*); Wang, Zhihui\* (*University of Texas Health Science Center at Houston McGovern Medical School*)

14:00-14:15 SaCT20.3  
**Discontinuous Galerkin Model of Cellular Electroporation**  
 Sweeney, Daniel\* (*Virginia Tech*); Davalos, Rafael (*Virginia Tech*)

14:15-14:30 SaCT20.4  
**Point Process Filtering Estimates of Branching Rate for Neural Dendritic Morphology Generation**  
 Chou, Zane\* (*University of Southern California*); Yu, Gene (*University of Southern California*); Berger, Theodore (*USC*)

14:30-14:45 SaCT20.5  
**Modelling Nerve Compression in Carpal Tunnel Syndrome**  
 Snarrenberg, Shana (*Univ. of Illinois at Chicago*); Sevak, Brinda Nishith (*Univ. of Illinois at Chicago*); Patton, James\* (*Univ. Illinois at Chicago (UIC) & The Shirley Ryan AbilityLab (formerly RIC)*)

SaDT2: 15:00-16:30 Meeting Room 312  
**Signal Processing and Classification in Fetal and Neonatal Physiology (Theme 1)** (Oral Session)

15:00-15:15 SaDT2.1  
**Investigating the Impact of CNN Depth on Neonatal Seizure Detection Performance**  
 O'Shea, Alison\* (*University College Cork*); Lightbody, Gordon (*University College Cork*); Boylan, Geraldine (*University College Cork*); Temko, Andriy (*University College Cork*)

15:15-15:30 SaDT2.2  
**Deep Learning for Continuous Electronic Fetal Monitoring in Labor**  
 Petrozziello, Alessio (*University of Portsmouth*); Jordanov, Ivan (*University of Portsmouth*); Papageorgiou, Aris (*Nuffield Dept. of Obstetrics and Gynaecology, John Radcliffe Hospital, University of Oxford*); Redman, Christopher WG (*University of Oxford*); Georgieva, Antoniya\* (*University of Oxford*)

15:30-15:45 SaDT2.3  
**Signal Separation for Transabdominal Non-Invasive Fetal Pulse Oximetry using Comb Filters**  
 Böttrich, Marcel\* (*Technische Universität Ilmenau*); Husar, Peter (*Ilmenau University of Technology*)

15:45-16:00 SaDT2.4  
**Influence of Prenatal Alcohol and Smoke Exposure on Neonatal Vagal Tone in Response to Head-Up Tilt**  
 Pini, Nicolò\* (*Politecnico di Milano*); Lucchini, Maristella (*Politecnico di Milano*); Fifer, William P. (*Dept. of Psychiatry and Pediatrics, Columbia University College of Physicians & Surgeons*); Myers, Michael (*Columbia University Medical Center*); Signorini, Maria G. (*Politecnico di Milano*)

16:00-16:15 SaDT2.5  
**Connectivity Measures of Uterine Activity using Magnetomyography**  
 Escalona-Vargas, Diana Irazú\* (*University of Arkansas for Medical Sciences*); Zhang, Mengxue (*Washington University in St. Louis*); Nehorai, Arye (*Washington University in St. Louis*); Eswaran, Hari (*University of Arkansas for Medical Sciences*)

16:15-16:30 SaDT2.6  
**Extracting Transients from Cerebral Oxygenation Signals of Preterm Infants: A New Singular-Spectrum Analysis Method**  
 O'Toole, John M.\* (*Univ. College Cork*); Dempsey, Eugene (*Irish Centre for Fetal and Neonatal Translational Research (INFANT), Univ. College Cork*); Boylan, Geraldine (*Univ. College Cork*)

SaDT3: 15:00-16:30 Meeting Room 314  
**Image Segmentation – Machine Learning (Theme 2)** (Oral Session)  
**Chair:** Zhao, Jun (*Shanghai Jiao Tong University*)

15:00-15:15 SaDT3.1  
**ENS-Unet: End-to-End Noise Suppression U-Net for Brain Tumor Segmentation**  
 Meng, Zhu (*Beijing Univ. of Posts and Telecommunications*); Fan, Zhongyue (*Beijing Univ. of Posts and Telecommunications*); Zhao, Zhicheng\* (*Beijing Univ. of Posts and Telecommunications*); Su, Fei (*Beijing Univ. of Posts and Telecommunications*)

15:15-15:30 SaDT3.2  
**Extraction of Aortic Knuckle Contour in Chest Radiographs using Deep Learning**  
 Xue, Zhiyun\* (*National Library of Medicine*); Long, L. Rodney (*National Library of Medicine*); Jaeger, Stefan (*National Institutes of Health*); Folio, Les (*National Institutes of Health Clinical Center*); Thoma, George (*National Library of Medicine, NIH*); Antani, Sameer (*National Library of Medicine*)

15:30-15:45 SaDT3.3  
**Deep Learning and Multi-Sensor Fusion for Glioma Classification using Multistream 2D Convolutional Networks**  
 Ge, Chenjie\* (*Chalmers University of Technology*); Gu, Irene Y.H. (*Chalmers University of Technology*); Jakola, Asgeir S. (*Sahlgrenska Academy / St. Olavs University Hospital*); Yang, Jie (*Shanghai Jiao Tong University*)

15:45-16:00 SaDT3.4  
**Automatic Delineation of the Clinical Target Volume in Rectal Cancer for Radiation Therapy using Three-Dimensional Fully Convolutional Neural Networks**  
 Larsson, Rasmus (*Shanghai Jiao Tong University*); Xiong, Junfeng (*Shanghai Jiao Tong University*); Song, Ying (*West China Hospital*); Fu, Ling (*Shanghai Jiao Tong University*); Chen, Yizhi (*Shanghai Jiao Tong University*); Xu, Xiaowei (*Shanghai Jiao Tong University*); Zhang, Puming (*Shanghai Jiao Tong University*); Zhao, Jun\* (*Shanghai Jiao Tong University*)

16:00-16:15 SaDT3.5  
**Hematoma Segmentation using Dilated Convolutional Neural Network**  
 Yao, Heming\* (*University of Michigan*); Williamson, Craig (*University of Michigan*); Soroushmehr, S.M.Reza (*University of Michigan, Ann Arbor*); Gryak, Jonathan (*University of Michigan*); Najarian, Kayvan (*University of Michigan - Ann Arbor*)

16:15-16:30 SaDT3.6  
**A Fully Convolutional Deep Neural Network for Lung Tumor Boundary Tracking in MRI**  
 Tahmasebi, Nazanin\* (*University of Alberta*); Boulanger, Pierre (*University of Alberta*); Noga, Michelle (*University of Alberta*); Punithakumar, Kumaradevan (*University of Alberta*)

SaDT4: 15:00-16:30 Meeting Room 315  
**Novel Methods of Physiological Monitoring (Theme 7)** (Oral Session)  
**Chair:** Jovanov, Emil (*University of Alabama in Huntsville*)

15:00-15:15 SaDT4.1  
**Electrode Placement for Calf Bioimpedance Measurements during Hemodialysis**  
 Delano, Maggie K.\* (*Swarthmore College*); Sodini, Charles G. (*Massachusetts Institute of Technology*)

15:15-15:30 SaDT4.2  
**AERO: An Objective Peripheral Edema Measurement Device**  
 Williams, Keith (*East Carolina University*); Han, Muhong (*East Carolina University*); Hardin, Sonya (*East Carolina University*); George, Stephanie (*East Carolina University*); Yao, Jianchu\* (*East Carolina University*)

15:30-15:45 SaDT4.3  
**The Importance of Posture and Skin-Site Selection on Remote Measurements of Neck Pulsations: An Ultrasonographic Study**  
 Moco, Andrea\* (*Eindhoven University of Technology*); Hamelmann, Paul (*Eindhoven University of Technology*); Stuijk, Sander (*TU Eindhoven*); de Haan, Gerard (*Philips Innovation Group, Philips Research, Eindhoven*)

15:45-16:00 SaDT4.4  
**Ambulatory Sensor for Circumference Monitoring of Lower Limbs**  
 Gehin, Claudine\* (*INSA Lyon*); Grenier, Etienne (*Sigvaris*); Chaigneau, Cyril (*Sigvaris*); Massot, Bertrand (*INSA Lyon*); Claude, Arthur (*INSA Lyon*); Montalibet, Amalric (*INL UMR-5270 - INSA Lyon*); McAdams, Eric (*INSA Lyon*)

16:00-16:15 SaDT4.5  
**Contactless Investigation of Dielectric Samples with a High-Q Millimeter-Wave Sensor**  
 Wessel, Jan (*IHP*); Schmalz, Klaus (*IHP*); Jamal, Farabi Ibne (*IHP*); Kissingner, Dietmar\* (*IHP*)

16:15-16:30 SaDT4.6  
**Vital Sign Monitoring using Capacitive Sensing**  
 Jovanov, Emil\* (*University of Alabama in Huntsville*)

SaDT5: 15:00-16:30 Meeting Room 316A  
**Ophthalmic and Retinal Imaging (II) (Theme 2)** (Oral Session)

15:00-15:15 SaDT5.1  
**DISCERN: Generative Framework for Vessel Segmentation using Convolutional Neural Network and Visual Codebook**  
 Chudzik, Piotr\* (*University of Lincoln*); Al-Diri, Bashir (*The University of Lincoln*); Caliva', Francesco (*University of Lincoln*); Hunter, Andrew (*University of Lincoln*)

15:15-15:30 SaDT5.2  
**Introducing a Novel Layer in Convolutional Neural Network for Automatic Identification of Diabetic Retinopathy**  
 Khojasteh, Parham\* (*RMIT University*); Aliahmad, Behzad (*RMIT University*); Poosapadi Arjunan, Sridhar (*SRM Institute of Science and Technology*); Kant Kumar, Dinesh (*RMIT University*)

15:30-15:45 SaDT5.3  
**A Unified Optic Nerve Head and Optic Cup Segmentation using Unsupervised Neural Networks for Glaucoma Screening**  
 Ghassabi, Zeinab\* (*Stein Eye Institute, Univ. of California Los Angeles (UCLA)*); Shanbehzadeh, Jamshid (*Dept. of Computer Engineering, Kharazmi Univ.*); Nouri Mahdavi, kouros (*Stein Eye Institute, Univ. of California Los Angeles (UCLA)*)

15:45-16:00 SaDT5.4  
**Real-Time Retinal Processing for High-Resolution Optogenetic Stimulation Device**  
 El Zarif, Nizar\* (*Polystim Neurotech Lab*); Montazeri, Leila (*Polystim Neurotech Lab*); Sawan, Mohamad (*Polytechnique Montreal*)

16:00-16:15 SaDT5.5  
**Automated Detection of Malarial Retinopathy in Retinal Fundus Images Obtained in Clinical Settings**  
 Joshi, Vinayak\* (*VisionQuest BioMedical LLC*); Wigdahl, Jeffrey (1982); Nemeth, Sheila (*Visionquest BioMedical LLC*); Manda, Chatonda (*University of Malawi*); Lewallen, Susan (*Kilimanjaro Centre for Community Ophthalmology*); Taylor, Terrie (*Michigan State University*); McCormick, Ian J (*The University of Edinburgh*); Harding, Simon (*University of Liverpool*); Soliz, Peter (*VisionQuest BioMedical LLC*)

16:15-16:30 SaDT5.6  
**Optic Disc Segmentation from Retinal Fundus Images via Deep Object Detection Networks**  
 Sun, Xu (*Guangzhou Shiyuan Electronics Co., Ltd. (CVTE)*); Xu, Yanwu\* (*Guangzhou Shiyuan Ltd. Co*); Zhao, Wei (*Guangzhou Shiyuan Electronics Co., Ltd.*); You, Tianyuan (*Guangzhou Shiyuan Electronics Co., Ltd.*); Liu, Jiang (*Ningbo Institute of Materials Technology and Engineering, CAS*)

SaDT6: 15:00-16:30 Meeting Room 316B  
**Neuromuscular Systems (IV) (Theme 6)** (Oral Session)  
**Chair:** Patton, James (*University Illinois at Chicago (UIC) & The Shirley Ryan AbilityLab (formerly RIC)*)

15:00-15:15 SaDT6.1  
**Development of a Clonus Management System: A Case Study of Sit-to-Stand Learning in a Stroke Patient**  
 Shiraiishi, Ryoichiro\* (*Cyberdyne, Inc.*); Kawamoto, Hiroaki (*University of Tsukuba*); Sankai, Yoshiyuki (*University of Tsukuba*)

15:15-15:30 SaDT6.2  
**Mechanisms of Bone-Conducted Ultrasonic Perception Assessed by Measurements of Acoustic Fields in the Outer Ear Canal and Vibrations of the Tympanic Membrane**  
 Nakagawa, Seiji\* (*Chiba University*); Ito, Kazuhito (*National Institute of Advanced Industrial Science and Technology (AIST)*)

15:30-15:45 SaDT6.3  
**Synergistic Recruitment of Multi-Scale Myoelectric Oscillations of Upper Limb during Infant Crawling**  
 Hou, Wensheng\* (*Bioengineering Inst of Chongqing University*); Gao, Zhixian (*Chongqing University*)

15:45-16:00 SaDT6.4  
**On the Impact of Muscle Shortening on Non-Negative Matrix Factorization of Dynamic Surface Electromyograms**  
 Šavc, Martin\* (*University of Maribor*); Holobar, Ales (*University of Maribor, Faculty of Electrical Engineering and Computer Science*); Glaser, Vojko (*University of Maribor, Faculty of Electrical Engineering and Computer Science*)

16:00-16:15 SaDT6.5  
**Characterizing Residual Muscle Properties in Lower Limb Amputees using High Density EMG Decomposition: A Pilot Study**  
 Fylstra, Bretta\* (*North Carolina State University and University of North Carolina - Chapel Hill*); Dai, Chenyun (*University of North Carolina at Chapel Hill*); Hu, Xiaogang (*University of North Carolina-Chapel Hill*); Huang, He (*North Carolina State University and University of North Carolina at Chapel Hill*)

16:15-16:30 SaDT6.6  
**Adjacent Features for High-Density EMG Pattern Recognition**  
 Donovan, Ian (*San Francisco State University*); Okada, Kazunori (*San Francisco State University*); Zhang, Xiaorong\* (*San Francisco State University*)

SaDT7: 15:00-16:30 Meeting Room 316C  
**Signal Processing for Atrial Fibrillation (Theme 1) (Oral Session)**

15:00-15:15 SaDT7.1  
**Atrial Fibrillation Detection in Short Single Lead ECG Recordings using Wavelet Transform and Artificial Neural Networks**  
Hernandez, Fabio (*UPB Bucaramanga*); Méndez Abad, Dilio José (*Universidad Pontificia Bolivariana*); Amado, Lusvin (*Centro Industrial de Mantenimiento Integral and Pontifical Bolivarian University*); Altuve, Miguel\* (*Pontifical Bolivarian University*)

15:15-15:30 SaDT7.2  
**Evaluation of Multiscale Frequency Approach for Visualizing Rotors in Patients with Atrial Fibrillation**  
Ravikumar, Vasanth (*Univ. of Minnesota*); Annoni, Elizabeth (*Univ. of Minnesota*); Mulpuru, Siva (*Mayo Clinic*); Roukoz, Henri (*Univ. of Minnesota*); Tolkacheva, Elena\* (*Univ. of Minnesota*)

15:30-15:45 SaDT7.3  
**Intrinsic Mode Function Complexity Index using Empirical Mode Decomposition Discriminates Normal Sinus Rhythm and Atrial Fibrillation on a Single Lead ECG**  
Shivaram, Suganti (*Mayo Clinic*); Siva Baala Sundaram, Divaakar (*Mayo Clinic*); Balasubramani, Rogith (*Velalar College of Engineering and Technology*); Muthyala, Anjani (*Mayo Clinic*); Poigai Arunachalam, Shivaram\* (*Mayo Clinic*)

15:45-16:00 SaDT7.4  
**Bispectrum and Histogram Features for the Identification of Atrial Fibrillation based on Electrocardiogram**  
Lin, Yu-Zhe (*National Chung Cheng University*); Yu, Sung-Nien\* (*National Chung Cheng University*)

16:00-16:15 SaDT7.5  
**Detection of Atrial Fibrillation from RR Intervals and PQRS Morphology using a Neural Network Ensemble**  
Khamis, Heba\* (*UNSW Sydney*); Chen, Jiayu (*Swiss Federal Institute of Technology Zürich*); Redmond, Stephen James (*Univ. of New South Wales*); Lovell, Nigel H. (*Univ. of New South Wales*)

SaDT9: 15:00-16:30 Meeting Room 318B  
**Artefact Removal for Biosignals (Theme 1) (Oral Session)**

15:00-15:15 SaDT9.1  
**Removal of Baseline Wander Noise in ECG Signal using Asymmetrical Frequency-Response Masking Bandpass Filters**  
Shang, Zhongxia\* (*York University*); Zhao, Yang (*York University*); Lian, Yong (*York University*)

15:15-15:30 SaDT9.2  
**Modelling and Synthesizing Motion Artifacts in Unobtrusive Multimodal Sensing using Copulas**  
Berief, Felix Balthasar (*RWTH Aachen University*); Leonhardt, Steffen (*RWTH Aachen University*); Hoog Antink, Christoph\* (*RWTH Aachen University, Aachen, Germany*)

15:30-15:45 SaDT9.3  
**A Blind Source-Based Method for Automated Artifact-Correction in Standard Sleep EEG**  
Waser, Markus\* (*AIT Austrian Institute of Technology GmbH*); Garn, Heinrich (*AIT Austrian Institute of Technology GmbH*); Jennum, Poul (*University of Copenhagen, Denmark*); Sorensen, Helge B D (*Technical University of Denmark*)

15:45-16:00 SaDT9.4  
**A Novel Algorithm for Removing Artifacts from EEG Data**  
Li, Yongcheng\* (*University of California, Irvine*); Wang, Po T. (*University of California Irvine*); Vaidya, Mukta (*University of Chicago*); Liu, Charles Y. (*Keck Hospital of the University of Southern California*); Slutsky, Marc (*Northwestern University*); Do, An H. (*University of California Irvine*)

16:00-16:15 SaDT9.5  
**Cochlear Implant Artifact Reduction on One Channel Mismatch Negativity Recordings based on Ensemble Empirical Mode Decomposition and Independent Component Analysis**  
Martinez-Camacho, Mauricio Arturo\* (*Universidad Autónoma Metropolitana-Iztapalapa*); Castaneda-Villa, Norma (*Universidad Autónoma Metropolitana-Iztapalapa*)

SaDT12: 15:00-16:30 Meeting Room 321A  
**Sleep Apnea Diagnosis and Therapy (Theme 5) (Oral Session)**  
**Chair:** Penzel, Thomas (*Charite Universitätsmedizin Berlin*)  
**Co-Chair:** de Chazal, Philip (*University of Sydney*)

15:00-15:15 SaDT12.1  
**On the Generalizability of ECG-Based Obstructive Sleep Apnea Monitoring: Merits and Limitations of the Apnea-ECG Database**  
Papini, Gabriele\* (*Eindhoven University of Technology*); Fonseca, Pedro (*Philips Research and Eindhoven University of Technology*); Margarito, Jenny (*Philips Research*); van Gilst, Merel (*Eindhoven University of Technology*); Overeem, Sebastiaan (*Kempenhaghe Foundation, Sleep Medicine Centre*); Bergmans, Johannes Wilhelmus Maria (*Eindhoven University of Technology*); Vullings, Rik (*Eindhoven University of Technology*)

15:15-15:30 SaDT12.2  
**Optimising the Apnoea Classification Performance of a Neural Network Classifier Processing ECG-Oximetry Signals**  
de Chazal, Philip\* (*Univ. of Sydney*); Naiwala Pathirannehelage, Madhuka (*Univ. of Sydney*); Sadr, Nadi (*Univ. of Sydney*)

15:30-15:45 SaDT12.3  
**A Sleep Apnea Therapy Device Uses No Added Pressure**  
Webster, John G\* (*University of Wisconsin-Madison*); Shokouinejad, Mehdi (*University of Wisconsin - Madison*); Wang, Fa (*University of Wisconsin-Madison*)

15:45-16:00 SaDT12.4  
**Apnea and Hypopnea Events Classification using Amplitude Spectrum Trend Feature of Snore**  
Sun, Jingpeng (*Univ. of Chinese Academy of Sciences*); Hu, Xiyuan\* (*Inst. of Automation, Chinese Academy of Sciences, Univ. of Chinese Academy of Sciences*); Zhao, Yingying (*South Campus of Guanganmen Hospital, China Academy of Chinese Medical*); Sun, Shuchen (*Guanganmen Hospital, China Academy of Chinese Medical*); Chen, Chen (*Chinese Academy of Sciences, Univ. of Chinese Academy of Sciences*); Peng, Silong (*Inst. of Automation, Chinese Academy of Sciences, Univ. of Chinese Academy of Sciences*)

16:00-16:15 SaDT12.5  
**Prediction of MAS Therapy Response in Obstructive Sleep Apnoea Patients using Clinical Data**  
Naiwala Pathirannehelage, Madhuka\* (*University of Sydney*); de Chazal, Philip (*University of Sydney*)

16:15-16:30 SaDT12.6  
**In-Home Sleep Apnea Severity Classification using Contact-Free Load Cells and an AdaBoosted Decision Tree Algorithm**  
Mosquera-Lopez, Clara\* (*Oregon Health & Science University*); Leitschuh, Joseph (*Oregon Health & Science University*); Condon, John (*Pro-tech*); Hagen, Chad (*Oregon Health & Science University*); Hanks, Cody (*Portland State University*); Jacobs, Peter G. (*Oregon Health & Science University*)

SaDT14: 15:00-16:30 Meeting Room 322AB  
**Therapeutic Ultrasound (II) (Theme 9) (Oral Session)**

15:00-15:15 SaDT14.1  
**Gas Embolization in a Rodent Model of Hepatocellular Carcinoma using Acoustic Droplet Vaporization**  
Harmon, Jonah (*Tulane Univ.*); Kabinejadian, Foad (*Tulane Univ.*); Seda, Robinson (*Univ. of Michigan*); Fabiilli, Mario (*Univ. of Michigan*); Kuruvilla, Sibin (*Stanford Univ.*); Greve, Joan (*Univ. of Michigan*); Fowlkes, Brian (*Univ. of Michigan*); Bull, Joseph\* (*Tulane Univ.*)

- 15:15-15:30 SaDT14.2  
**Design of a Novel Wearable LIPUS Treatment Device for Mental Health Treatment**  
 Qi, Shiang (*Univ. of Alberta*); Li, Yufeng (*Univ. of Alberta*); Zhang, Wei (*Univ. of Alberta*); Chen, Jie\* (*Univ. of Alberta*)
- 15:30-15:45 SaDT14.3  
**Transcranial Ultrasound Improves Behavioral Performance via Anti-Neuroinflammation**  
 Yang, Feng-Yi\* (*National Yang-Ming University*); Chen, Tao-Tao (*National Yang-Ming University*)
- 15:45-16:00 SaDT14.4  
**Ultrasound-Induced Insulin Release as a Potential Novel Treatment for Type 2 Diabetes Mellitus**  
 Singh, Tania\* (*George Washington Univ.*); Suarez Castellanos, Ivan (*George Washington Univ.*); Klimas, Aleks (*George Washington Univ.*); Entcheva, Emilia (*Stony Brook Univ.*); Cohen, Joshua (*GW Medical Faculty Associates*); Chatterjee Bhowmick, Diti (*George Washington Univ.*); Jeremic, Aleksandar (*George Washington Univ.*); Zderic, Vesna (*George Washington Univ.*)
- 16:00-16:15 SaDT14.5  
**Histotripsy for Non-Invasive Ablation of Hepatocellular Carcinoma (HCC) Tumor in a Subcutaneous Xenograft Murine Model**  
 Worlikar, Tejaswi\* (*University of Michigan*); Vlaisavljevich, Eli (*Virginia Tech*); Gerhardson, Tyler (*University of Michigan*); Greve, Joan (*University of Michigan*); Wan, Shanshan (*NYU Langone Health*); Kuruvilla, Siby (*Stanford University*); Lundt, Jonathan (*University of Michigan*); Ives, Kimberly (*University of Michigan*); Hall, Timothy (*University of Michigan*); Welling, Theodore (*NYU Langone Health*); Lee Jr., Fred T. (*University of Wisconsin-Madison*); Xu, Zhen (*University of Michigan*)
- 16:15-16:30 SaDT14.6  
**Real-Time Optical Imaging of Microbubble Destruction with an Acoustic Lens Attached Ultrasonic Diagnostic Probe in Microfluidic Capillary Models**  
 Oh, Min Tack (*Korea Institute of Science and Technology*); Kim, Hong Nam (*Korea Institute of Science and Technology*); Ko, Hanseok (*Korea Univ.*); Lee, Seunghyun (*Seoul National Univ. Hospital*); Kim, Jung Hoon (*Seoul National Univ. Hospital*); Lee, Byung Chul\* (*Korea Institute of Science and Technology*)
- SaDT15: 15:00-16:30 Meeting Room 323A  
**Micro and Nanotechnology (Theme 3)** (Oral Session)  
**Chair:** Abidian, Mohammad Reza (*University of Houston*)  
**Co-Chair:** Slaughter, Gymama (*Univ. of Maryland Baltimore County*)
- 15:00-15:15 SaDT15.1  
**A Portable Device Integrated with Aligned Carbon Nanotubes for Sensitive Virus Capture and Detection**  
 Yeh, Yin-Ting\* (*Pennsylvania State University*); Lu, Huaguang (*The Pennsylvania State University*); Zheng, Si-Yang (*Pennsylvania State University*); Terrones, Mauricio (*The Pennsylvania State University*)
- 15:15-15:30 SaDT15.2  
**A Fully-Papertronic Biosensing Array for High-Throughput Characterization of Microbial Electrogenicity**  
 Tahernia, Mehdi\* (*Binghamton University*); Mohammadifar, Maedeh (*State University of New York at Binghamton*); Hassett, Daniel J. (*University of Cincinnati College of Medicine*); Choi, Seokheun (*State University of New York at Binghamton*)
- 15:30-15:45 SaDT15.3  
**Aligned Conducting Polymer Nanotubes for Neural Prostheses**  
 Khorrami, Milad (*University of Houston*); Abidian, Mohammad Reza\* (*University of Houston*)
- 15:45-16:00 SaDT15.4  
**Fabrication and Testing of Multielectrode Matrix of Disordered Si Nanowires for Brain Tissue Sensing**  
 Quiroga-González, Enrique\* (*Benemérita Univ. Autónoma de Puebla*); Arzola Flores, Jesús Andrés (*Benemérita Univ. Autónoma de Puebla*); Soto Eguibar, Enrique (*Benemérita Univ. Autónoma de Puebla*); Ortega Ramírez, Audrey Magdalena (*Benemérita Univ. Autónoma de Puebla*); González Petlalcalco, Octavio (*Benemérita Univ. Autónoma de Puebla*)
- 16:00-16:15 SaDT15.5  
**Cross-Linked Electrospun Gelatin Nanofibers for Cell-Based Assays**  
 Ghassemi, Zahra (*UMBC*); Slaughter, Gymama\* (*University of Maryland Baltimore County*)
- SaDT16: 15:00-16:30 Meeting Room 323B  
**Health Informatics – Decision Support Methods and Systems (Theme 10)** (Oral Session)  
**Chair:** Shah, Syed Ahmar (*Postdoctoral Scientist, Univ. of Oxford*)
- 15:00-15:15 SaDT16.1  
**Physical Activity and Sleep Analysis of Heart Failure Patients using Multi-Sensor Patches**  
 O'Donnell, Johanna (*University of Oxford*); Velardo, Carmelo (*University of Oxford*); Shah, Syed Ahmar (*Postdoctoral Scientist, University of Oxford*); Khorshidi, Reza (*University of Oxford*); Salvi, Dario\* (*University of Oxford*); Rahimi, Kazem (*University of Oxford*); Tarassenko, Lionel (*University of Oxford*)
- 15:15-15:30 SaDT16.2  
**Applying Data Preprocessing Methods to Predict Premature Birth**  
 Esty, Alana\* (*Carleton Univ.*); Frize, Monique (*Carleton Univ.*); Gilchrist, Jeff (*Carleton Univ.*); Bariciak, Erika (*Univ. of Ottawa*)
- 15:30-15:45 SaDT16.3  
**Key Marker Selection for the Detection of Early Parkinson's Disease using Importance-Driven Models**  
 Xiao, Chun (*Univ. of Sydney*); Liu, Yingchao (*Dept. of Neurosurgery, Provincial Hospital Affiliated to Shandong Univ., China*); Feng, Dagan (*Univ. of Sydney*); Wang, Xiu Ying\* (*Univ. of Sydney*)
- 15:45-16:00 SaDT16.4  
**Onset Detection of Epileptic Seizures from Accelerometry Signal**  
 Kusmakar, Shitanshu\* (*Univ. of Melbourne*); Karmakar, Chandan (*Deakin Univ.*); Yan, Bernard (*The Royal Melbourne Hospital*); O'Brien, Terence (*The Royal Melbourne Hospital*); Muthuganapathy, Ramanathan (*Indian Institute of Technology Madras*); Palaniswami, Marimuthu (*Univ. of Melbourne*)
- 16:00-16:15 SaDT16.5  
**A Machine Learning Approach for the Prediction of the Progression of Cardiovascular Disease based on Clinical and Non-Invasive Imaging Data**  
 Kigka, Vassiliki (*Univ. of Ioannina*); Georga, Eleni I. (*Univ. of Ioannina*); Sakellarios, Antonis (*Unit of Medical Technology and Application Systems, Dept of Material Science, Univ. of Ioannina*); Tachos, Nikolaos (*Unit of Medical Technology and Intelligent Information Systems, Dept. of Materials Science and Engineering, Univ. of Ioannina*); Andrikos, Ioannis (*Univ. of Ioannina*); Tsompou, Panagiota (*Unit of Medical Technology and Intelligent Information Systems, Dept. of Materials Science and Engineering, Univ. of Ioannina*); Rocchiccioli, Silvia (*Institute of Clinical Physiology, National Research Council*); Pelosi, Gualtiero (*Institute of Clinical Physiology, National Research Council*); Parodi, Oberdan (*CNR Clinical Physiology Institute - Milan*); Michalis, Lampros (*Univ. of Ioannina*); Fotiadis, Dimitrios I.\* (*Univ. of Ioannina*)
- 16:15-16:30 SaDT16.6  
**Deploying Predictive Models in a Healthcare Environment – An Open Source Approach**  
 Murphree, Dennis\* (*Mayo Clinic*); Quest, Daniel (*Mayo Clinic*); Allen, Ryan (*Mayo Clinic*); Ngufor, Che (*Mayo Clinic*); Storie, Curtis (*Mayo Clinic*)

SaDT19: 15:00-16:30 Meeting Room 325A  
**Models of Neurons and Neural Tissues (Theme 4) (Oral Session)**

15:00-15:15 SaDT19.1  
**A Multi-Domain Continuum Model of Electrical Stimulation of Healthy and Degenerate Retina**  
 Alqahtani, Abdulrahman (*Univ. of New South Wales*); Al Abed, Amr (*Univ. of New South Wales*); Anderson, Emily Elizabeth\* (*Univ. of New South Wales*); Lovell, Nigel H. (*Univ. of New South Wales*); Dokos, Socrates (*Univ. of New South Wales*)

15:15-15:30 SaDT19.2  
**A Cerebellar Spiking Neural Model for Phase Reversal of Vestibulo-Ocular Reflex**  
 Zhou, Zhanhong (*City Univ. of Hong Kong*); Zhai, Xiaolong (*City Univ. of Hong Kong*); Tin, Chung\* (*City Univ. of Hong Kong*)

15:30-15:45 SaDT19.3  
**Clustering based Kernel Reinforcement Learning for Neural Adaptation in Brain-Machine Interfaces**  
 Zhang, Xiang\* (*The Hong Kong University of Science and Technology*); Principe, Jose (*University of Florida*); Wang, Yiwen (*Hong Kong University of Science and Technology*)

15:45-16:00 SaDT19.4  
**Modeling Nonlinear Synaptic Dynamics: A Laguerre-Volterra Network Framework for Improved Computational Efficiency in Large Scale Simulations**  
 Hu, Eric\* (*University of Southern California*); Yu, Gene (*University of Southern California*); Song, Dong (*University of Southern California*); Bouteiller, Jean-Marie Charles (*University of Southern California*); Berger, Theodore (*University of Southern California*)

16:00-16:15 SaDT19.5  
**A Tractography Analysis for Electroconvulsive Therapy**  
 Riel, Stefanie (*Technical Univ. of Munich*); Bashiri, Mohammad (*Technical Univ. of Munich*); Hemmert, Werner (*Technical Univ. of Munich*); Bai, Siwei\* (*Technical Univ. of Munich*)

16:15-16:30 SaDT19.6  
**Decoding Position to Analyze Spatial Information Encoding in a Large-Scale Neuronal Network Model of Rat Dentate Gyrus**  
 Yu, Gene\* (*University of Southern California*); Bouteiller, Jean-Marie Charles (*University of Southern California*); Song, Dong (*University of Southern California*); Berger, Theodore (*University of Southern California*)

SaDT20: 15:00-16:30 Meeting Room 325B  
**Models of Medical Devices, Therapies and Systems (Theme 4) (Oral Session)**  
**Chair:** Makarov, Sergey (*Electrical and Computer Engineering, Worcester Polytechnic Institute*)  
**Co-Chair:** Bomzon, Ze'ev (*Novocure Ltd.*)

15:00-15:15 SaDT20.1  
**Simulating the Outcome of Heart Allocation Policies using Deep Neural Networks**  
 Medved, Dennis\* (*Lund University*); Nugues, Pierre (*Lund University*); Nilsson, Johan (*Dept. Clinical Sciences Lund, CardioThoracic Surgery, Lund University, Lund*)

15:15-15:30 SaDT20.2  
**Influence of the Cochlear Implant Electrode Array Placement on the Current Spread in the Cochlea**  
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**Brachytherapy Absorbed Organ Dose Estimation using Monte Carlo Simulations of Realistic Patient Models**  
 Morató, Sergio (*Institute for Industrial, Radiophysical and Environmental Safety (ISIRYM)*); Juste, Belen\* (*Polytechnic Univ. of Valencia*); Peris, Sandra (*The Institute for Industrial, Radiophysical and Environmental Safety (ISIRYM) at the Universitat Politècnica de València*); Miró, Rafael (*Polytechnic Univ. of Valencia*); Verdú, Gumersindo (*Polytechnic Univ. of Valencia*); Ballester, Facundo (*Medical Physics Research Group UV - La Fe of the Universitat de València*); Vijande, Javier (*Medical Physics Research Group UV - La Fe of the Universitat de València*); Pérez, Jose (*Hospital Politècnic i Universitari La Fe de València*)

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 Baranoski, Gladimir Valerio Guimaraes\* (*University of Waterloo*); Chen, Tenn Francis (*University of Waterloo*); Van Leeuwen, Spencer Richard (*University of Waterloo*)

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**Molecular Dynamics Simulation Study of Electrokinetics Transport of Aqueous Solution through Functionalized Carbon Nanotubes: A New Membrane Model for Nanopours based Biosensors**  
 Panahi, Abbas (*York University, Toronto*); Ghafar-Zadeh, Ebrahim\* (*York University*); Magierowski, Sebastian (*York University*); Sabour, Mohammad H. (*University of Tehran*)

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 Suh, Seungbeum (*Korea Institute of Science & Technology*); Leaman, Eric (*Virginia Tech*); Zhan, Ying (*Virginia Tech*); Behkam, Bahareh\* (*Dept. of Mechanical Engineering*)



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Auffermann, William	ThAT15.2	43		ThPoS-22.29	72
Augustine, Cheryl	FrPoS-13.5	107		SaDT19.5	149
Augustine, Jonathan	FrAT13.5	86		SaDT20.2	149
Aumann, Herbert	SaBT4.1	135	Bai, Wenjia	WePoS-17.2	19
Avanzino, Laura	ThAT4.2	40		ThBT9.6	47
Avci, Recep	FrBT2.2	89	Baig, Mirza Mansoor	FrPoS-23.3	112
Averna, Alberto	ThPoS-25.11	79	Baik, Jinhwan	ThBT15.4	49
	FrBT8.2	91		FrPoS-26.1	113
Averta, Giuseppe	WePoS-02.8	12	Bailey, Alex Cameron	FrPoS-29.22	117
	FrBT7.4	91	Bailey, Jeannie	ThBT18.5	49
Avolio, Alberto P	WeAT14.1	4	Bailey, Stephanie	ThPoS-25.39	80
	ThAT14.3	42	Bailon, Raquel	WePoS-06.4	14
	FrAT12.2	85		SaBT13.1	137
	FrBT12.1	92	Baimyshev, Almaskhan	FrBT13.3	93
	FrCT12.4	99	Baird, Zachary	FrBT17.2	94
	FrBT12.1	C	Bajcsy, Ruzena	WePoS-28.2	34
Awai, Kazuo	ThPoS-23.22	74		ThBT18.5	49
Ayub, Suleman	SaAT12.3	131		ThCT12.5	55
Azam, Muhammad Awais	WePoS-08.4	15	Bajger, Mariusz	FrCT3.5	96
Azarbarzin, Ali	SaAT9.6	130	Bak, Seongjin	FrPoS-28.15	114
Azari, Bahar	WeBT2.6	7	Baker, Fiona	ThBT2.3	45
Azevedo, Robert G.	SaCT4.2	140	Baker, Mary	FrPoS-28.26	115
Azevedo-Coste, Christine	FrCT6.5	97	Baker, Zachary	FrAT8.1	84
	SaBT1.2	134	Bakir, Toufik	FrCT6.2	97
Azhar, Feraz	WePoS-04.6	13	Bakshi, Koushik	ThCT9.4	54
Azimi, Ehsan	FrPoS-10.5	106		ThPoS-09.23	63
Aziz, Omar	FrBT17.3	94	Bakst, Leah	ThPoS-23.9	73
	SaBT4.6	135	Balaban, Ertan	ThCT4.2	52
Azizi, Shahla	ThPoS-21.8	70	Balaguer, Angels de Luis	WePoS-20.4	21
	ThPoS-21.9	70	Balasingham, Ilango	FrCT18.2	101
Azocar, Alejandro	FrBT6.5	90		SaBT20.1	139
Azarin, Jose M.	WePoS-02.1	12	Balasubramani, Rogith	SaDT7.3	147
	ThPoS-14.2	65	Balasubramanian, Ravi	WePoS-29.6	37
	ThPoS-19.1	68	Balbinot, Alexandre	FrPoS-16.3	109
Azuma, Tetsushi	ThPoS-23.35	74		SaBT9.3	136
Azz, Mouad	SaBT13.2	137		SaCT9.3	142
			Balderas-López, José Abraham	ThPoS-22.10	71
			Baldoni, Andrea	FrPoS-31.24	122
			Baldwin, Alex	ThPoS-24.26	77
			Balkan, Baran	FrPoS-10.7	106
			Ball, Tonio	FrBT1.6	89
			Ballester, Facundo	SaDT20.3	149
			Ban, Hideyuki	WePoS-25.14	27
			Bandyopadhyay, Soma	WePoS-10.3	16
			Bang, Ji Won	SaCT3.1	140
			Bani-Hani, Muath	FrPoS-17.3	109
			Banuelos, Mario	ThCT5.3	52
			Bao, Peng	SaBT3.1	134
			Bao, Rui	FrAT14.5	86
			Bao, Shi-chun	WePoS-03.2	12

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Baba, Ryuzo	ThPoS-03.6	59
Babadi, Behtash	WeAT2.1	1
Babahosseini, Hesam	SaBT15.6	138
Babakhani, Aydin	FrCT4.2	96
Babazadeh, Sina	SaCT17.6	144
Babiloni, Fabio	SaAT2.5	127
Babu Rajendra Kurup, Nithin	ThPoS-13.3	64
Babyn, Paul	SaBT3.6	134
Baca, Vaclav	WePoS-24.14	24
	FrPoS-30.10	119

Bao, Shu-Di	FrCT18.5	101	Bazin, Pierre-Louis	WeAT20.1	6
Bao, Xueliang	ThPoS-23.26	74	Bazrafkan, Afsheen	FrAT15.4	87
Bao, Yong	FrCT8.5	98	Beach, Christopher	ThBT18.2	49
	SaBT6.6	135		FrPoS-01.6	102
Bär, Karl-Jürgen	WePoS-03.7	13	Beane Freeman, Laura	FrAT19.3	88
Baragli, Paolo	WePoS-10.7	16	Bearden, Carrie	ThPoS-25.16	79
	WePoS-11.5	16	Beaudry, Shaylene	FrPoS-28.6	114
Baragona, Marco	WePoS-27.27	33	Bebin, Martina	FrBT9.6	92
Baran, Agnes	FrAT3.1	82	Becher, Harald	WePoS-22.8	22
Baranoski, Gladimir Valerio Guimaraes	SaAT18.4	133		ThBT3.4	45
	SaDT20.4	149	Beck, Amanda M.	SaAT7.6	129
Barbé, Laurent	ThPoS-02.4	58	Becker, Ryan	FrPoS-28.11	114
Barbieri, Riccardo	WeAT2.1	C		FrPoS-32.5	124
	WeAT2.4	1		FrPoS-32.43	126
	WePoS-06.6	14	Beckert, Lutz	WeBT4.3	7
	ThAT8.3	41	Béhar, Nathalie	SaBT20.4	139
	FrAT12.6	86	Behbehani, Khosrow	FrAT9.1	C
	FrBT7.6	91		FrAT9.6	85
	SaCT7.1	C		FrPoS-29.21	117
	SaCT7.5	142	Behkam, Bahareh	SaDT20.6	149
Bardakjian, Berj Luther	ThPoS-10.3	63	Beitel-White, Natalie	FrPoS-13.6	107
Bardini, Roberta	ThPoS-22.28	71	Bekele, Amente	FrAT19.4	88
Bari, Vlasta	ThAT12.1	42	Bekmurzayeva, Aliya	FrPoS-18.2	109
	ThAT12.3	42	Belkin, Shimshon	ThAT9.5	41
	ThAT12.5	42	Bellotto, Nicola	SaAT19.4	133
	FrAT12.5	86	Ben Hmed, Abdennacer	FrCT6.2	97
	SaAT2.2	127	Ben Salem, Mouna	SaAT14.1	131
	SaAT13.2	131	Ben, Bonnie Louis	FrPoS-29.39	118
Bariciak, Erika	SaDT16.2	148	Benda, Mihaly	ThPoS-09.2	62
Barik, Anwesha	WeBT12.1	9	Bendell, Jessica	FrPoS-04.5	103
Barin, Edward	FrAT12.2	85	Bengtsson, Henrik	ThPoS-17.2	67
Barkana, Buket	ThPoS-14.8	65	Benitez, Raul	FrPoS-29.7	117
Barlow, Jesse	WePoS-22.6	22	Benninger, David	SaAT14.5	131
Barnestein-Fonseca, Pilar	WePoS-24.12	24	Benony, Betty	FrPoS-06.8	104
Barnett, Michael	ThPoS-25.12	79	Bensalem-Owen, Meriem	ThPoS-19.7	68
Baro, Cecilio	ThBT13.2	48	Benso, Alfredo	ThPoS-22.28	71
Barr, Roger	SaBT16.5	138	Bent, Brinnae	SaAT1.4	127
	SaBT20.1	C		SaBT1.3	134
	SaBT20.6	139	Bentler, Christian	FrBT1.6	89
Barra, Beatrice	ThCT10.1	54	Bentsen, Bo	ThPoS-21.5	69
	ThCT10.3	54	Benzaquen, Oshra	FrAT3.4	82
Barrance, Peter	FrAT13.5	86	Beppler, Eric	FrAT17.5	87
Barreira, Cauê	ThCT12.2	55		FrAT17.6	87
Barresi, Giacinto	ThPoS-05.4	60		FrPoS-19.8	110
Barriga-Rivera, Alejandro	ThBT6.6	46	Bera, Sutanu	SaBT2.3	134
	ThCT1.6	51		SaBT2.4	134
	SaAT14.6	131	Berg, Philipp	ThCT6.1	52
Barroso Carmona, Jorge	FrPoS-32.35	126	Berger, Daniel	FrPoS-05.6	104
Barroso-García, Verónica	WeBT13.2	9	Berger, Theodore	ThAT6.1	40
	WeBT13.4	10		ThCT8.2	53
Barry, Alexander	WePoS-28.21	35		ThCT8.4	53
	ThBT7.2	46		ThCT8.6	53
Bartolome-Molina, Pablo	FrAT4.1	83		ThPoS-24.12	76
Bartscherer, Marko	ThCT15.5	56		SaAT1.6	127
Barz, Falk	WePoS-29.19	38		SaCT20.4	145
Basava, Vijay Sunil	FrPoS-29.21	117		SaDT19.4	149
Baselice, Fabio	SaCT5.4	141		SaDT19.6	149
Basham, Eric	ThPoS-04.2	59	Bergman, Eir	WePoS-24.15	24
Basharat, Amna	FrAT19.4	88	Bergmann, Jeroen	ThAT13.3	42
Bashiri, Mohammad	SaDT19.5	149	Bergmans, Johannes Wilhelmus Maria	SaDT12.1	147
Bashirullah, Rizwan	SaCT1.6	140	Bergsland, Jacob	SaBT20.1	139
Basit, Mujeeb	WePoS-28.31	36	Berief, Felix Balthasar	SaDT9.2	147
Baskaran, Lohendran	WePoS-26.20	30	Berke, Joshua	WeAT17.5	5
	WePoS-26.21	30	Bernabeu, Miguel O.	FrPoS-27.2	113
	WePoS-26.42	31	Bernal, Marisol	WePoS-28.8	35
Bassir Kazeruni, Neda, Mélanie	ThCT19.1	57	Bernard, Christophe	SaAT8.5	129
Batchelor, John	ThCT4.2	52	Bernardini, Silvia	FrAT19.1	88
Bates, Russell	ThBT5.2	46	Bernardinis, Matthew	FrAT11.3	85
Batkin, Izmail	FrPoS-01.5	102	Bernardo, Danilo	FrBT9.6	92
Batti, Laura	ThPoS-25.38	80	Berntsen, Helene	FrPoS-02.5	102
Baumert, Mathias	ThAT12.6	42	Berrum, Ernesto	WePoS-29.8	37
Baumgartner, Christian Frederik	WePoS-17.2	19	Berry, Jasmine	ThPoS-11.6	63
	ThBT9.6	47	Bertolucci, Federica	FrPoS-31.24	122
Baumgartner, Werner	ThPoS-22.5	70	Bertos, Georgios	ThPoS-03.7	59
Bausells, Joan	FrPoS-04.2	103		ThPoS-03.8	59
Bayet, Laurie	WePoS-04.5	13			

Bertrand, Alexander	WeBT1.2	6	Biswal, Dibyajyoti	ThPoS-19.2	68
	ThBT8.3	47		FrAT12.4	86
Bertschi, Mattia	WeAT14.3	4	Biswas, Abhishek	FrCT8.2	98
Besio, W. G.	ThAT1.4	39	Bitikofer, Christopher	SaAT15.6	132
	ThPoS-08.9	61	Black, Melissa H	FrAT11.4	85
	ThPoS-25.41	80	Blackford, Ethan Brian	ThAT8.1	C
Bessho, Yusuke	ThPoS-26.1	81		ThAT8.1	41
	FrPoS-31.19	122		ThAT8.5	41
Betta, Isabella Dalla	WePoS-17.6	20	Blackmore, Conner	WeAT14.1	4
Betti, Stefano	FrCT18.3	101		FrAT12.2	85
Betti, Viviana	SaAT2.5	127		FrCT12.4	99
Bettiga, Debora	SaAT2.4	127		FrAT20.1	88
Beuing, Oliver	ThCT6.1	52		SaAT7.5	129
Beyette, Fred R	FrBT9.3	91		FrBT7.5	91
Bezerianos, Anastasios	WeBT2.2	7	Blaise, J. Harry	FrPoS-13.5	107
	WePoS-03.8	13	Blanchard, Romane	SaCT14.1	143
Bhagat, Yusuf	FrCT12.3	99	Blanco, Roberto	WeAT4.3	2
Bhamborae, Mayur J	FrCT10.3	99	Blanco-Almazán, Dolores	WePoS-04.5	13
Bhandari, Subash	FrPoS-28.11	114	Blankertz, Benjamin	ThPoS-23.27	74
	FrPoS-32.5	124	Blau, Sarah	WePoS-21.5	21
Bhandarkar, Varun	WePoS-24.37	25	Blazek, Vladimir	FrBT4.2	89
Bhattacharjee, Tanuka	FrCT9.6	98	Bleck, Lena	ThBT8.2	47
	SaCT16.3	143	Bleichner, Martin G.	FrPoS-28.5	114
Bhatti, Pamela	ThAT15.2	43	Blinov, Michael	ThCT10.1	54
Bhonsle, Suyashree	FrPoS-13.6	107	Bloch, Jocelyne	ThCT10.3	54
Bhuiyan, Alauddin	WePoS-16.13	19	Block, Robert	FrPoS-31.30	123
	WePoS-21.11	22	Blum, Sarah	FrPoS-30.22	119
Bhuiyan, Md. Shoaib	FrAT16.6	87	Bo, Bin	WeAT1.6	1
Bhuiyan, Tanveer A.	ThPoS-23.13	73	Bo, Chunjuan	FrAT3.2	82
Bi, Jinbo	WeBT15.3	10	Boasen, Jared	ThPoS-24.22	76
Bi, Lei	FrAT3.5	83	Boatman-Reich, Dana	WePoS-03.4	12
Bi, Zuyue	FrPoS-28.18	114	Bobić, Vladislava	ThPoS-15.8	66
	FrPoS-28.21	115	Bocan, Kara	SaAT20.3	133
Bialek, Hayden	SaBT17.4	138	Bocchino, Andrea	FrPoS-19.6	110
Bian, Gui-Bin	WePoS-25.31	28	Bockbrader, Marcia	WeAT6.3	2
	ThPoS-23.28	74		WeAT6.6	2
Bian, Ruihao	ThPoS-24.4	75	Boedecker, Joschka	ThPoS-15.4	66
Bian, Yu	WePoS-17.4	19	Boehler, Christian	WePoS-27.14	32
Bianchi, Anna Maria	WeBT2.1	C		ThPoS-14.10	65
	WeBT2.4	7	Boehm, Manfred	FrPoS-32.44	126
	FrBT16.4	94	Boehring, Stephan	SaCT15.2	143
	SaAT2.1	CC	Boeira, Jane	WePoS-15.5	18
	SaAT2.4	127	Boese, Axel	WePoS-25.47	28
	SaAT9.6	130		FrPoS-28.32	115
	SaCT18.2	144	Bogacz, Rafal	FrCT20.1	101
Bianchi, Matteo	WePoS-02.8	12	Bogdanov, Gene	ThAT20.2	44
	FrBT7.4	91	Bogie, Kath	FrBT4.4	90
	FrPoS-30.6	118		FrPoS-20.5	110
Bianconi, Fortunato	ThPoS-17.3	68	Böhnke, Frank	SaDT20.2	149
Bicalho Saturnino, Guilherme	WeAT20.5	6	Bohrer, Roberta	ThPoS-23.30	74
	ThBT20.1	50	Boiroux, Dimitri	ThPoS-17.2	67
Bicchi, Antonio	WePoS-02.8	12	Boisselier, Elodie	ThAT17.5	43
	FrBT7.4	91		FrPoS-02.8	102
	FrPoS-30.6	118	Bojorges-Valdez, Erik Rene	ThPoS-11.11	64
Bidelman, Gavin M.	WePoS-29.4	37	Bolaños, José Daniel	ThAT12.2	42
Bidias à Mougoufan, Bertin	FrPoS-30.7	119	Bolic, Miodrag	FrBT17.2	94
Bielmann, Mathieu	WePoS-02.10	12		FrPoS-01.5	102
Bieritz, Shelby	FrPoS-25.3	112	Bolick, Ryan	SaAT1.4	127
	FrPoS-25.6	113	Bollheimer, Cornelius	WePoS-21.5	21
Biffi, Carlo	WePoS-22.4	22	Bologna, Marco	WePoS-19.5	20
	ThBT9.2	47	Bölte, Sven	FrAT11.4	85
Bighamian, Ramin	FrAT6.5	83	Bolus, Nicholas	ThCT18.4	57
Bihorac, Azra	FrPoS-11.7	106	Bomzon, Ze'ev	ThCT15.1	CC
	FrPoS-32.46	126		ThCT20.5	58
Bikson, Marom	FrBT8.1	91		ThCT20.6	58
Billings, Seth	WeBT17.1	11		FrAT20.4	88
Bimbo, Joao	FrPoS-18.7	110		SaDT20.1	CC
Binczak, Stéphane	WePoS-25.5	26	Bonassi, Gaia	ThAT4.2	40
	FrCT6.2	97	Bonato, Paolo	FrPoS-22.6	111
	FrPoS-30.27	120	Boninger, Michael	WeAT6.1	2
Bingham, Adrian	ThPoS-16.7	67		ThAT5.2	40
Bingham, Clayton	ThCT8.2	53	Bonizzi, Pietro	SaBT13.6	137
Birbaumer, Niels	ThPoS-09.17	62	Bonnetblanc, François	ThPoS-14.12	65
Birch, Nigel	WePoS-28.16	35	Boo, Hankil	FrPoS-29.23	117
Birjiniuk, Jonathan	FrBT20.5	95	Boonstra, Tjeerd W.	FrCT14.1	100
Bishop, Lauri	FrBT11.5	92	Boopathy Jegathambal, Sethu Kovendhan	WePoS-19.10	21

Booth, Brandon	WePoS-04.8	13	Braoudaki, Maria	SaCT19.5	144
Bopardikar, Ajit	SaAT18.2	133	Brar, Harleen	FrBT11.3	92
	SaBT18.1	138	Brat, Daniel	FrCT3.2	96
Bore, Joyce Chelangat	WePoS-28.23	36		SaAT3.5	128
Borghini, Gianluca	SaAT2.5	127	Brattain, Laura	WePoS-13.10	17
Borgström, Dennis	ThAT7.6	41		FrCT5.5	97
Boric-Lubecke, Olga	ThCT2.1	C	Braun, Fabian	WeAT14.3	4
	ThCT2.2	51		WePoS-25.8	26
	FrPoS-22.3	111	Brave, Michael	ThPoS-14.18	66
	FrPoS-29.39	118	Bray, Aaron	WePoS-26.12	29
	FrPoS-30.25	119	Breton, Marc D.	FrPoS-05.4	103
	SaAT9.1	C	Brian, Makenzie	SaBT17.4	138
Bories, Cyril	ThCT17.6	57	Bridgeman, Jay	FrPoS-04.1	103
Bornat, Yannick	WeBT16.4	10	Brieva, Jorge	FrAT3.6	83
	ThPoS-25.11	79	Briggs, Tokini	WePoS-24.4	23
Borowsky, Alexander	WePoS-15.1	18	Brinton, Mark	FrCT20.5	102
Borton, David	ThPoS-09.3	62	Britz, Gavin	ThPoS-24.19	76
Bosco, Gianfranco	WePoS-13.11	17	Brodnick, Sarah	SaAT8.4	129
Bose, Pritam	FrCT18.1	C	Brogan, David M.	FrPoS-04.1	103
	FrCT18.2	101	Brostek, Lukas	FrPoS-31.17	122
Boser, Bernhard	ThCT17.1	56	Brown, David	ThBT7.3	47
	FrBT5.2	90	Brown, Eli	WePoS-27.23	33
Bossi, Paolo	WePoS-19.5	20	Brown, Emery N.	WeAT2.3	1
Bottomley, Summer	ThAT16.5	43		WeAT2.4	1
Böttlich, Marcel	SaDT2.3	145		WePoS-17.6	20
Bouazizi, Hala	WePoS-28.46	37	Brown, James	WeAT20.3	6
	FrAT10.2	85		FrPoS-03.3	103
Boudrias, Marie-Helene	ThAT2.6	39	Brown, Justin	WeBT20.2	11
Bouganis, Christos-Savvas	FrAT1.6	82	Brown, Karen	SaAT16.6	132
Boukadoum, Mounir	ThAT17.1	43	Brown, Lisa	WePoS-23.5	23
	ThAT17.5	43	Brown, Mariah	ThCT19.4	57
	FrPoS-02.8	102	Brown, Peter	ThCT8.3	53
Boulanger, Pierre	WePoS-22.8	22		ThPoS-16.6	67
	ThBT3.4	45		FrCT20.1	101
	SaDT3.6	145	Bruder, Ralf	WePoS-22.3	22
Boulos, Mark I.	FrPoS-22.5	111	Brun, Francesco	SaBT10.2	136
Bounyong, Souksakhone	ThBT14.1	48	Brunette, Isabelle	WePoS-28.46	37
Bourbeau, Dennis	ThCT17.2	56		ThPoS-23.17	73
	FrBT4.6	90		FrAT10.2	85
Bourgeois, Brianna	WeAT10.3	3	Bruns, Tim M.	WeBT5.6	8
Boushey, Carol	WeAT12.2	4	Brunschwiler, Thomas	FrPoS-32.35	126
Bouteiller, Jean-Marie Charles	ThCT8.2	53	Brunton, Emma Kate	ThCT1.3	51
	ThCT8.6	53		ThPoS-20.1	69
	SaDT19.4	149		ThPoS-20.3	69
	SaDT19.6	149		FrAT8.2	84
Bouton, Chad	WeBT16.1	CC	Bryant, Jennifer	ThBT3.3	45
	WeBT16.5	10	Brynes, Jamieson	FrPoS-22.2	111
	ThAT5.1	C	Bu, Nan	FrBT2.5	89
	ThAT5.1	40		SaCT9.1	142
Bouyer, Laurent	WePoS-02.10	12	Buccelli, Stefano	ThPoS-25.11	79
Bovio, Dario	SaBT14.1	137	Buccino, Alessio Paolo	ThAT1.6	39
Bowles, Heather	FrAT19.3	88		FrAT6.3	83
Boyden, Edward	WePoS-17.6	20	Buckley, Erin	FrPoS-29.20	117
Boyer, Anthony	ThPoS-14.12	65	Buckley, Russell	WeBT4.3	7
Boylan, Geraldine	WePoS-04.2	13	Buckner, Eli	WePoS-20.4	21
	FrPoS-19.6	110	Bui, Alex	FrPoS-19.4	110
	SaAT14.4	131	Bui, Kevin	FrCT11.5	99
	SaCT7.2	141	Buitenweg, Jan Reinoud	FrBT7.1	91
	SaDT2.1	145	Bujnowski, Adam	SaCT19.2	144
	SaDT2.6	145	Bulea, Thomas C.	FrAT13.4	86
Boyle, Noel G.	FrCT16.5	101	Bull, David Roger	FrPoS-31.45	123
Bozkurt, Alper	FrAT17.5	87	Bull, Joseph	SaDT14.1	147
	FrAT17.6	87	Buniu, Michiyoshi	FrPoS-28.42	116
	FrPoS-19.8	110	Buono, Michael	FrPoS-29.22	117
Bracio, Boris Romanus	ThPoS-24.24	76	Burai, Peter	WeAT3.1	1
Bradford, J. Cortney	ThAT16.5	43	Burattini, Laura	WePoS-10.1	16
	ThPoS-22.46	72		SaAT13.3	131
	SaAT17.4	132		SaCT12.2	142
Brady, Michael	ThBT5.2	46	Burattini, Luca	WePoS-10.1	16
Braig, David	ThPoS-24.27	77		SaAT13.3	131
Brain, Keith L.	SaCT20.1	145	Burdick, Joel W.	FrAT6.2	83
Brakenridge, Scott C.	FrPoS-32.46	126	Burgoni, Cameron	FrPoS-29.22	117
Brambilla, Riccardo	WePoS-06.6	14	Buriro, Abdul Baseer	FrBT6.3	90
Brandli, Alice	ThCT1.5	51	Burke, Benjamin	SaAT17.4	132
Bränemark, Rickard	ThPoS-22.3	70	Burkhart, Ian	WeAT6.2	2
	SaBT6.3	135	Burkitt, Anthony Neville	SaAT7.3	129

Burkland, David	FrCT4.2	96	Campbell, Thomas	SaAT15.5	132
Burns, Devin	ThPoS-23.37	74	Campbell-Thompson, Martha	WeBT16.1	10
Burns, Martin	SaAT11.2	130	Campeau-Lecours, Alexandre	FrAT7.4	84
Burton, Michael	WePoS-28.31	36		FrPoS-28.31	115
Busacca, Alessandro	SaCT7.1	141	Campos, Mariane	FrPoS-04.4	103
Busch, Andrew	FrCT4.1	96	Candemir, Sema	WePoS-17.3	19
BuSha, Brett	ThPoS-07.3	61	Candler, Robert	WePoS-27.25	33
	FrPoS-26.4	113	Cano, Mónica	WePoS-03.6	12
Bussa, Nagaraju	FrPoS-10.2	106	Cao, Chunyan	ThPoS-15.11	67
Butera, Robert	WeBT16.1	C	Cao, Guohua	ThPoS-25.40	80
	WeBT16.2	10	Cao, Qingjiu	SaAT3.2	127
	WeBT16.3	10	Cao, Tingting	ThBT3.1	45
	ThCT8.1	C	Cao, Yafei	FrBT17.5	94
	SaBT1.1	C	Cao, Yihui	WePoS-14.4	18
Butlin, Mark	WeAT14.1	4	Cao, Yizhou	SaAT11.3	130
	ThAT14.3	42	Caon, Maurizio	ThCT16.1	C
	FrAT12.2	85		ThCT16.3	56
	FrBT12.1	92	Capogrosso, Marco	ThCT10.1	54
	FrCT12.4	99		ThCT10.3	54
Butner, Joseph	SaCT20.2	145	Caponero, Michele Arturo	ThCT18.2	57
Byrnes-Preston, Philip	SaCT1.2	139	Cappon, Giacomo	WePoS-05.5	14
Byun, Ohsung	FrPoS-32.14	125	Caprio, Alexandre	WePoS-27.31	33
Byun, Sangwon	ThPoS-22.35	72	Caras, John	FrAT4.5	83

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C. Proulx, Christophe	ThCT17.6	57	Cardoso, Jaime S.	FrCT7.2	98
C. Telea, Alexandru	SaAT2.5	127	Carek, Andrew	WeAT14.5	4
Caballero, Meghan	FrAT14.1	86		WePoS-26.11	29
Cabrera-Umpierrez, Maria Fernanda	WePoS-24.22	24		FrPoS-31.30	123
	WePoS-24.23	24	Carella, Tommaso	WePoS-02.6	12
	FrPoS-10.6	106	Carevic, Anita	WePoS-22.6	22
	FrPoS-31.4	121	Carey, Carole C.	ThAT14.1	C
Cafarelli, Andrea	SaCT14.2	143	Carey, Stephanie	WePoS-23.6	23
	SaCT14.4	143		ThPoS-13.4	64
Cai, Chuangjian	WeAT13.3	4	Carichner, Karla	FrPoS-32.3	124
Cai, Dawen	WeAT17.5	5	Carignano, Alberto	SaAT20.4	133
Cai, Lihui	FrBT9.2	91	Carli, Stefano	FrPoS-24.1	112
Cai, Weixing	FrPoS-30.38	120	Carlos, Luis	ThPoS-17.5	68
Cai, Xinxia	FrAT18.5	88	Carlson, Charles	WePoS-10.8	16
	FrCT4.3	96		ThCT19.4	57
	FrPoS-18.1	109		FrPoS-19.7	110
	SaAT1.2	127	Carlson, Kris	ThAT10.1	41
Cai, Yan	WePoS-16.1	18		ThAT10.3	41
	SaBT18.4	138		ThAT10.5	41
	SaBT18.6	139		ThCT20.6	58
Cai, Yun-Peng	FrPoS-11.6	106	Carmelo, Chisari	FrPoS-31.24	122
Cai, Zhengdong	WePoS-16.10	19	Carmena, Jose M.	WePoS-28.49	37
Cairo, Beatrice	ThAT12.1	42		ThPoS-25.10	79
	FrAT12.5	86	Carnicelli, Amalia	WePoS-10.1	16
	SaAT13.2	131	Caroline, Dina	SaAT18.1	133
Calareso, Giuseppina	WePoS-19.5	20	Carpaneto, Jacopo	FrPoS-31.24	122
Caldwell, Bryan	WePoS-14.7	18	Carpenter III, George W.	FrPoS-28.34	115
Caldwell, Ciara	WeAT17.5	5	Carpenter, Dawn	WePoS-24.31	25
Caldwell, Darwin G.	ThPoS-06.7	60	Carr, Oliver	WeAT8.3	3
Caleo, Matteo	FrPoS-31.24	122		FrPoS-32.45	126
Calhoun, Vince	WePoS-13.4	17	Carra, Giorgia	SaCT7.2	141
	ThAT2.3	39	Carrara, Sandro	FrPoS-02.1	102
	FrPoS-12.3	107	Carrino, Stefano	ThCT16.3	56
	SaAT3.2	127	Carroll, Camille	FrPoS-08.6	105
Caliva', Francesco	WePoS-19.2	20	Carrozzi, Marco	ThCT11.4	54
	SaDT5.1	146	Carson, Matthew D.	FrCT17.4	101
Callahan, Sean	WeBT8.4	8	Caruso, Maria Vittoria	FrBT12.5	93
	ThCT7.6	53	Casadio, Maura	ThAT4.4	40
Calleja-Agius, Jean	SaCT10.2	142	Casas, Rafael	ThPoS-26.6	81
	SaCT10.3	142	Casasus, Maria Alonso	FrPoS-10.6	106
Calvo, Mireia	SaBT20.4	139	Caselli, Richard	SaAT3.1	127
Camargo, Jonathan	ThPoS-24.28	77	Cash, Sydney	ThPoS-14.17	66
	ThPoS-24.29	77		ThPoS-17.5	68
Camargo-Junior, Franklin	ThCT12.2	55		FrBT11.2	92
Camassa, Alessandra	SaAT9.6	130	Caso, Brand	FrPoS-21.4	111
Camci-Unal, Gulden	ThBT16.1	49	Caspi, Avi	WeBT17.1	C
Camilleri, Kenneth Patrick	SaCT10.2	142		WeBT17.3	11
	SaCT10.3	142			
Campagne, Aurélie	ThBT2.2	45			



Casson, Alexander James	ThAT16.1	C	Chalacheva, Patjanaporn	WePoS-26.32	31
	ThAT16.4	43	Chamanzar, Maysamreza	ThAT6.1	CC
	ThBT18.2	49	Chan, Evan (Chi-Pang)	ThAT4.5	40
	ThCT4.2	52	Chan, Genevieve C Y	WePoS-16.5	19
	FrPoS-01.6	102		FrAT10.1	85
	FrPoS-21.1	111	Chan, Hui-Ling	ThPoS-25.13	79
Castañeda, Benjamín	FrCT5.1	97	Chan, Kevin C.	FrAT10.1	C
Castaneda-Villa, Norma	SaDT9.5	147		SaCT3.1	C
Castillo, Yolanda	WeAT4.3	2		SaCT3.1	140
Castro, Emanuela	FrCT18.3	101		SaCT3.4	140
Castro, Marcos	ThPoS-23.20	74	Chan, Leanne LH	ThBT6.1	CC
Catalano, Manuel Giuseppe	FrPoS-30.6	118	Chan, Maria	FrPoS-30.38	120
Catcheside, Peter	FrPoS-30.5	118	Chan, Piu	FrCT4.3	96
Catrambone, Vincenzo	WePoS-02.8	12	Chan, Rachel S. L.	FrAT14.3	86
	FrBT7.4	91	Chan, Rosa H. M.	ThPoS-19.5	68
	FrBT7.6	91	Chan, Russell W.	SaCT3.3	140
	SaAT2.3	127	Chan, Shing-Chow	WePoS-25.43	28
Cauwenberghs, Gert	ThAT1.6	39	Chan, Wen-Hsuan	ThPoS-09.10	62
	FrAT6.3	83	Chan, Yee Ling	WeAT1.5	1
Cavallo, Filippo	FrCT18.3	101	Chandra, Sourav	SaAT6.1	128
Cavallo, Gaia	WeBT10.3	9	Chandrakasan, Anantha P.	FrAT7.3	84
Cavero Barca, Carlos	ThAT7.4	41	Chandrasekhar, Anand	WeBT14.1	10
Cazzato, Roberto Luigi	ThPoS-02.4	58	Chanel, Laure-Anaïs	SaCT14.4	143
Cecotti, Hubert	WeAT1.3	1	Chang, Chi-Yuan	WeBT2.3	7
	WeBT2.5	7		ThCT2.4	51
	FrBT19.5	95	Chang, Hyuk-Jae	WePoS-28.35	36
	FrBT19.6	95		WePoS-29.20	38
	SaBT2.6	134		FrPoS-29.35	118
Cegielny, Tomek	FrCT7.1	97	Chang, Isaac Sungjae	FrBT19.4	95
Celanire, Sylvain	ThCT1.2	51	Chang, Jer-Hao	ThPoS-16.8	67
Celenk, Mehmet	WePoS-15.2	18	Chang, Jin Woo	ThPoS-24.34	77
Celik, Ugur	WePoS-24.31	25	Chang, Joseph	WePoS-28.13	35
Celinskis, Dmitrijs	WePoS-28.48	37	Chang, Joshua	WeAT2.6	1
Celler, Branko George	ThCT16.4	56		ThPoS-14.16	66
Cen, Ling	FrPoS-08.2	104	Chang, Ming	WePoS-26.24	30
Cene, Vinicius H.	SaBT9.3	136	Chang, Rae Kyu	FrPoS-29.23	117
Ceresa, Mario	FrAT5.1	83	Chang, Shih-Yin	ThCT10.5	54
Cerina, Luca	ThAT8.3	41	Chang, Ting Chia	FrBT4.3	90
Cerrolaza, Juan J.	WePoS-17.2	19	Chang, Wei	FrBT14.3	93
	WePoS-22.4	22	Chang, Yao-Chuan	ThBT6.4	46
	ThBT9.2	47	Chang, Yeun-Chung	WePoS-28.29	36
	ThBT9.6	47	Chang, Yuchou	WePoS-18.1	20
	FrBT10.5	92	Chang-Hyung, Lee	WePoS-27.50	34
	FrCT5.1	C	Chao, Lingya	ThPoS-17.5	68
Cerruti, Giulio	ThAT4.1	40	Chaparro, Valentina	WePoS-12.1	16
Cerutti, Sergio	SaAT2.4	127	Chappell, Jacob	ThCT19.4	57
Cesari, Matteo	WeBT13.1	9	Charbonnier, Sylvie	ThBT2.2	45
	SaAT16.1	132	Charleston-Villalobos, Sonia	ThCT18.3	57
Cesonis, Justinas	SaBT6.1	135		FrBT2.1	89
	SaBT6.2	135	Charlier, Pierre	SaCT4.1	140
Cetinkaya, Esma	SaBT1.6	134	Charthad, Jayant	FrBT4.3	90
Cevdanes, Lucia	ThBT9.1	47	Charupanit, Krit	FrBT9.6	92
Cha, Ho-Seung	WePoS-25.41	28	Chaspari, Theodora	WePoS-01.2	11
Cha, SeungNam	WePoS-26.44	31	Chatterjee Bhowmick, Diti	SaDT14.4	148
Cha, Yoon-Hee	WePoS-26.26	30	Chatterjee, Baibhab	FrCT18.4	101
	ThPoS-08.9	61		SaBT17.6	138
Chae, Seonah	WePoS-26.27	30	Chatterjee, Debatri	FrPoS-09.1	105
	ThPoS-23.32	74	Chatterjee, Jyotirmoy	FrPoS-28.49	116
	FrPoS-32.11	124		FrPoS-29.16	117
Chae, Uikyu	WeBT19.2	11		FrPoS-29.17	117
Chae, Youngcheol	FrBT20.1	95	Chattopadhyay, Bhabani Prasad	FrPoS-16.1	108
Chae, Younsoo	WePoS-25.27	27	Chau, Juan M.	ThPoS-09.22	63
Chagnon, Grégory	FrPoS-17.4	109	Chau, Tom	FrCT10.6	99
Chahid, Abderazak	SaCT5.3	141	Chaudri, Jamil	FrCT16.6	101
Chai, Guohong	ThPoS-15.5	66	Chavarriaga, Ricardo	ThPoS-09.6	62
Chai, Rifai	SaBT9.5	136	Chavez-Sandoval, Blanca Estela	ThPoS-22.10	71
Chai, Young Jun	ThPoS-25.8	78	Chayama, Yusuke	SaBT5.4	135
Chaichaowarat, Ronnapree	FrBT13.5	93	Chbat, Nicolas W.	FrBT20.1	C
Chaigneau, Cyril	SaDT4.4	146	Cheang, U Kei	ThPoS-06.2	60
Chairez Oria, Isaac	FrPoS-30.23	119	Cheema, Faisal H.	FrPoS-25.4	112
Chakraborty, Debsubhra	WePoS-27.36	34	Cheema, Maninderpal Singh	SaAT5.5	128
Chakravarty, Kingshuk	FrPoS-09.1	105	Cheikh Latyr, Fall	WePoS-02.10	12
	FrPoS-09.2	105		FrAT7.4	84
Chakravarty, Sourish	WeAT2.3	1		FrPoS-28.31	115
Chakravarty, Sumit	ThPoS-22.14	71	Chembrammal, Pramod	WePoS-29.17	38
Chakravorty, Nishant	WeBT12.1	9	Chen, Bai	ThPoS-13.2	64

Chen, Bo-Wei	WePoS-28.13	35	Chen, Tenn Francis	SaAT18.4	133
	ThPoS-24.42	78		SaDT20.4	149
	ThPoS-25.35	80	Chen, Wei	ThCT4.6	52
Chen, Chen	ThCT4.6	52		FrAT16.5	87
	FrPoS-25.4	112		FrCT2.1	96
	SaDT12.4	147		SaAT1.1	127
Chen, Cheng-fu	FrAT18.2	88		SaBT2.1	134
Chen, Chen-Huan	WePoS-26.10	29		SaCT4.4	141
Chen, Chien	WePoS-06.2	14	Chen, Wei-Ling	FrPoS-27.1	113
Chen, Chien-Hsi	WePoS-25.47	28		SaBT15.3	137
Chen, Chihchen	ThPoS-22.33	72	Chen, Weixuan	WeAT12.4	4
Chen, Chiung-Chu	ThPoS-16.6	67		ThBT17.5	49
Chen, Chung-Ming	WePoS-28.13	35	Chen, Weiyl	WePoS-25.50	29
	WePoS-28.29	36	Chen, Wenxi	WePoS-05.4	14
	ThPoS-24.42	78		FrAT9.3	84
Chen, Danyan	ThPoS-10.1	63	Chen, Xi	FrAT3.3	82
Chen, Fei	ThPoS-14.3	65	Chen, Xiang	ThPoS-25.20	79
	ThPoS-20.4	69		FrPoS-29.5	116
	ThPoS-20.5	69	Chen, Xiaodong	SaAT4.5	128
	FrCT12.6	100	Chen, Xiaogang	FrAT1.2	82
	SaBT14.4	137		FrPoS-31.32	123
Chen, Guan-Yu	ThPoS-22.13	71	Chen, Xin	WePoS-25.43	28
Chen, Hanwei	WeBT6.6	8		ThPoS-24.36	77
Chen, Hongda	WePoS-08.3	15	Chen, Yafen	ThPoS-08.9	61
	ThCT4.5	52	Chen, Yangsheng	ThCT13.5	55
	ThPoS-09.12	62	Chen, Yen-Ting	WePoS-28.22	36
Chen, Hongyu	FrCT2.1	96		WePoS-28.30	36
Chen, Hwann-Tzong	WePoS-16.11	19	Chen, Yi	FrAT5.5	83
Chen, Jiahai	FrCT18.5	101	Chen, Yifan	ThPoS-06.2	60
Chen, Jiande	ThPoS-18.1	68	Chen, Ying	WePoS-05.4	14
Chen, Jiangang	ThCT4.1	52		ThAT19.5	44
Chen, Jiayu	FrPoS-12.3	107		FrAT9.3	84
	SaDT7.5	147	Chen, Yingying	FrPoS-01.4	102
Chen, Jie	ThAT17.2	43	Chen, Yiran	FrAT2.5	82
	SaDT14.2	148	Chen, Yixin	WePoS-05.6	14
Chen, Jingjing	WePoS-24.41	25	Chen, Yizhi	WePoS-16.7	19
Chen, Jinying	SaAT17.6	132		WePoS-18.5	20
Chen, Jun	ThBT3.5	45		SaDT3.4	145
Chen, Jyh-Horng	ThPoS-24.47	78	Chen, Yong-Sheng	ThPoS-25.13	79
	FrPoS-28.27	115	Chen, You-Yin	WePoS-27.44	34
Chen, Kai-Yuan	ThPoS-18.1	68		ThPoS-25.35	80
	ThPoS-18.2	68		FrAT1.4	82
Chen, Kewei	SaAT3.1	127	Chen, Yundai	WePoS-14.4	18
Chen, Ko-Chiang	ThPoS-25.35	80	Chen, Yuping	SaCT17.1	143
Chen, Leng-Jung	WePoS-28.13	35	Chen, Zaozao	WeBT11.1	9
Chen, Li Wei	WePoS-28.13	35		WeBT11.2	9
Chen, Li-Fen	ThPoS-25.13	79		WePoS-29.5	37
Chen, Lin	WePoS-27.21	33	Chen, Zeqi	FrCT18.5	101
	ThPoS-25.31	80	Chen, Zhenxin	SaAT4.5	128
Chen, Long	FrAT1.1	82	Chen, Zhimin	FrPoS-03.1	103
Chen, Louis	ThAT20.3	44	Cheng, Andrew	WeBT8.1	8
Chen, Melinda	FrBT10.3	92	Cheng, Cheng	ThCT4.1	52
Chen, Meng	FrCT18.5	101	Cheng, Hao-min	WePoS-26.10	29
Chen, Ming	FrAT2.2	82	Cheng, Ji-Yen	ThAT9.5	41
	FrAT2.3	82	Cheng, Jun	WePoS-21.9	22
	FrAT9.1	84		ThAT19.2	44
Chen, Mingli	WeBT6.1	8		FrAT10.3	85
Chen, Mu-Hong	WePoS-25.15	27	Cheng, Kenneth Chik-Chi	ThPoS-16.12	67
Chen, Nigel T	FrAT11.4	85	Cheng, Li-Shun	WePoS-28.22	36
Chén, Oliver	WePoS-09.2	15	Cheng, Po-Wei	ThPoS-24.47	78
	ThCT11.3	54	Cheng, Richard	FrAT6.2	83
Chen, Qi	ThPoS-11.7	63	Cheng, Shuna	FrBT5.3	90
Chen, Richard	SaCT19.3	144	Cheng, Wayne	ThPoS-22.32	72
Chen, Runge	FrPoS-11.8	106	Cheng, Xiaoman	ThPoS-08.3	61
	SaBT16.4	138	Cheng, Xiaoran	WePoS-25.31	28
Chen, Sai	ThPoS-16.10	67	Cheng, Yi-Shing	FrBT5.3	90
	ThPoS-21.13	70	Cheng, Yuhsen	FrAT6.6	84
Chen, Sheng	WePoS-25.31	28	Chen-Yoshikawa, Toyofumi	ThPoS-24.5	75
Chen, Shixiong	ThPoS-20.7	69	Cheriet, Farida	WePoS-16.3	19
	FrCT7.3	98	Chern, Jen-Suh	ThPoS-16.8	67
	FrPoS-18.6	110	Cherry, Elizabeth	WePoS-26.7	29
	SaAT4.5	128	Chestek, Cynthia	WeAT17.5	5
Chen, Shugeng	ThPoS-15.5	66	Cheung, Jason Pui Yin	ThPoS-22.29	72
Chen, Shuhang	WePoS-01.3	12	Cheung, Kai Ho Edgar	WeBT17.4	11
Chen, Siping	FrPoS-28.18	114		ThPoS-24.18	76
Chen, Tao-Tao	SaDT14.3	148	Chew, Daniel	SaCT1.2	139

Chew, Effie	FrCT11.3	99	Choi, Jaeyoung	FrPoS-32.18	125
Chew, Sing Yan	FrPoS-15.5	108		FrPoS-32.19	125
Chi, Yanling	WePoS-14.5	18	Choi, Jin-Woo	ThCT13.2	55
Chi, Yucong	FrAT3.5	83	Choi, Jinyoung	WePoS-09.6	15
Chi, Zhenyu	SaBT14.4	137	Choi, Ji-Woong	ThPoS-26.7	81
Chiang, An-Ti	ThPoS-11.7	63	Choi, John	FrBT5.4	90
Chiang, Ken Chia-Han	SaAT1.4	127		FrCT1.1	95
	SaBT1.3	134	Choi, Jongbong	ThPoS-25.48	81
Chiang, Kuan-Jung	ThPoS-09.10	62	Choi, Jongdoo	WePoS-24.33	25
Chiappalone, Michela	ThAT4.1	40	Choi, JongKwan	ThPoS-25.43	80
	ThAT4.2	40	Choi, JongSuk	FrBT19.2	95
	ThPoS-25.11	79	Choi, Junho	ThPoS-21.3	69
	FrBT8.2	91		FrCT11.4	99
Chiba, Ryosuke	ThPoS-03.2	59	Choi, Kup-Sze	FrPoS-08.1	104
Chien, Daniel	SaBT18.6	139	Choi, Min Hyuk	FrPoS-32.24	125
Chiew, Calvin	FrPoS-30.15	119	Choi, Sang Ho	WePoS-24.30	25
Chihara, Yuma	FrPoS-29.26	118		FrPoS-28.39	116
Chikaki, Shinichi	WePoS-26.50	32	Choi, Seokheun	SaBT15.1	137
	WePoS-28.17	35		SaDT15.2	148
Chiles, Bryan	ThPoS-14.18	66	Choi, SeongJun	WePoS-25.41	28
Chin, Chee Tang	WePoS-26.20	30	Choi, Seoyoung	ThPoS-24.45	78
	WePoS-26.21	30	Choi, Sunghee	FrPoS-12.2	107
	WePoS-26.42	31	Choi, Sung-Phyo	FrPoS-29.8	117
Chin, Chee Yang	WePoS-26.20	30	Choi, Taejin	ThPoS-16.3	67
	WePoS-26.21	30	Choi, Wiha	ThPoS-07.8	61
	WePoS-26.42	31	Choi, Wonseok	ThPoS-22.48	72
Chin, Jiah Shin	FrPoS-15.5	108		FrPoS-30.37	120
Chin, Zheng Yang	ThPoS-09.13	62	Choi, Woo Jung	ThCT4.4	52
Chitose, Ryota	WeAT1.2	1	Choi, Yeon Shik	FrPoS-32.4	124
Chiueh, Tzi-Dar	ThPoS-24.47	78	Choimaa, Lodoiravsal	SaBT14.3	137
Cho, Byungchul	WePoS-26.44	31	Chokshi, Falgun	FrBT16.5	94
Cho, Dong-Ho	WePoS-25.13	27		FrPoS-10.4	106
	ThCT5.5	52	Chon, Ki	ThCT4.4	52
Cho, Il-Joo	WeBT19.2	11	Chong, Hao	FrBT4.4	90
Cho, Ki-Hyun	WePoS-23.3	23	Choong, Peter	ThPoS-12.5	64
Cho, Sangeun	WePoS-26.44	31		FrBT13.2	93
Cho, Seung Yeon	ThPoS-26.14	81		FrPoS-29.30	118
Cho, Sue Min	FrPoS-06.3	104	Chopra, Nikita	SaAT3.4	128
Cho, Sung Woo	ThCT13.2	55	Choromanska, Anna	ThCT3.4	51
Cho, Won-Sang	WePoS-27.46	34	Chou, Chen-Wei	WePoS-06.2	14
Cho, Woo-Hyun	ThPoS-23.43	75	Chou, Chin	FrAT1.4	82
Cho, Yoon Kyung	WePoS-28.15	35	Chou, Tzu-Chieh	FrPoS-30.40	120
	ThPoS-23.43	75	Chou, Yi-Ting	WePoS-27.44	34
	ThPoS-23.47	75	Chou, Zane	SaCT20.4	145
	ThPoS-23.50	75	Choudhury, Indraneil	WeBT12.1	9
	ThPoS-24.34	77	Chouliaras, Vassilios	FrPoS-06.6	104
	ThPoS-24.50	78	Choupina, Hugo Miguel Pereira	ThCT15.2	56
Choe, Soyeon	FrPoS-31.11	122	Chow, King Lau	FrPoS-19.1	110
Choe, Yoonsuck	WeBT3.6	7	Chow, Robert	ThBT6.4	46
	WePoS-13.7	17	Chowdhury, Ananda	FrPoS-09.4	105
	SaBT5.2	135	Chowdhury, Nahian F.	ThPoS-25.18	79
Choi, Anthony	FrPoS-15.1	108		ThPoS-25.19	79
	FrPoS-15.2	108		ThBT3.2	45
	SaCT15.1	143	Chowdhury, Onik	FrAT16.1	87
Choi, Bernard	FrAT15.1	C	Chowdhury, Tahsin Ahmed	FrPoS-28.3	114
	FrAT15.4	87	Choy, Chiu Sing	WePoS-22.8	22
Choi, Byungjune	FrPoS-30.26	120	Choy, Marina	ThCT8.1	53
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Choi, Dageyoung	WePoS-26.27	30	Christiaensen, Glenn	WeAT2.5	1
	ThPoS-23.32	74	Christinaki, Eirini	ThPoS-13.6	65
	FrPoS-32.11	124	Chu, Fu-Jen	ThPoS-25.1	78
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Choi, Eunpyo	ThCT13.1	55	Chu, Peng	FrAT3.2	82
Choi, Gwang Jin	ThPoS-07.2	61	Chu, Shu-Hsien	ThBT13.6	48
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Choi, Ho Seon	FrPoS-32.23	125		SaAT9.4	130
Choi, Ho Soon	ThPoS-22.16	71	Chu, Winnie Chiu-wing	ThAT3.3	39
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Choi, Hyun Do	FrPoS-32.9	124		WePoS-16.14	19
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Choi, Jaesoon	WePoS-19.3	20		WePoS-26.21	30
Choi, Jaewon	FrPoS-28.39	116		WePoS-26.42	31

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Chung, Euiheon	WePoS-25.3	26		FrPoS-25.6	113
Chung, Hung Li	SaCT18.6	144	Connelly, Cynthia	FrPoS-21.4	111
Chung, Kwang Hyo	WePoS-28.9	35	Connolly, Mark	FrAT8.5	84
	FrPoS-30.31	120	Conroy, Joseph K.	FrBT18.2	94
Chung, Moo K.	WePoS-13.3	17	Constantinou, Timothy	FrAT1.6	82
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Chung, Sohae	ThCT3.4	51		FrPoS-02.7	102
Chung, Taek Dong	ThPoS-24.34	77	Contreras Alejo, Diana Alejandra	WePoS-28.43	37
Chung, Yooree	ThPoS-24.18	76	Conway, Bernard A.	WePoS-02.9	12
Church, Paige	FrCT10.6	99	Conway, Claire	FrPoS-27.6	113
Cianfrocca, Claudia	FrAT19.1	88	Cooray, Navin	WeBT13.3	9
Ciantar, Annelie	SaCT10.2	142		WePoS-09.2	15
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Ciaramidaro, Angela	WePoS-29.11	38		ThCT11.5	54
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Cincotti, Febo	FrPoS-29.25	117	Corkidi, Gabriel	WePoS-26.1	29
Cinelli, Ilaria	WePoS-23.5	23	Corletti, Luigi	SaCT18.1	144
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Clark, Gregory	FrCT20.5	102		FrPoS-29.33	118
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Clarkson, Tessa	WePoS-05.10	14	Coscia, Martina	ThPoS-25.29	80
Claude, Arthur	SaDT4.4	146	Cosentini, Claudia	WeBT2.4	7
Cleveland, Robin	SaCT14.3	143	Cosentino, Sarah	ThCT15.4	56
Clifford, Bryan	WeAT9.3	3	Costa Filho, Cicero F. F.	WePoS-14.3	18
Clifton, David	ThAT13.1	42	Costa, Alexandre	WePoS-19.6	21
	ThAT13.2	42	Costa, Eva	FrCT10.2	99
Clifton, Lei	ThAT13.1	42	Costa, Joao Pedro	WePoS-14.3	18
Clipp, Rachel	SaCT18.3	144	Costa, Marly G. F.	WePoS-14.3	18
Cluff, Kim	FrPoS-28.11	114	Costacurta, Julia	ThPoS-16.5	67
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Cohen, Bruce E.	FrBT5.2	90	Coussios, Constantin-C	SaCT14.3	143
Cohen, Joshua	SaDT14.4	148	Cowan, Noah	ThPoS-15.6	66
Cohn, William E.	FrPoS-25.3	112	Cowin, Gary	ThPoS-20.9	69
	FrPoS-25.6	113	Cox, Brian	FrPoS-21.4	111
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	FrCT3.1	96	Cox, Edward	FrBT19.1	94
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Colbrunn, Robb	WePoS-23.3	23	Crespo, Andrea	WeBT13.2	9
Colella, Angela	ThAT8.3	41		WeBT13.4	10
Coleman, Patrick	FrBT5.5	90	Criscuolo, Francesca	FrPoS-02.1	102
Colgan, Evan	WePoS-24.42	25	Cristina Schmitz, Heidi Ramona	FrBT1.6	89
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Collinger, Jennifer	WeAT6.1	2	Cristini, Vittorio	SaCT20.2	145
	ThAT5.2	40	Crocher, Vincent	ThPoS-21.2	69
Colombi, Ilaria	ThPoS-25.11	79	Croner, Roland	WePoS-25.47	28
Colopy, Glen Wright	ThAT13.1	C	Crouzet, Christian	FrAT15.4	87
	ThAT13.1	42	Crowell, Andrea	SaCT16.5	143
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Comaniciu, Alexandra	ThPoS-25.34	80	Cubria, Maria	WeBT20.5	11
Comas, Olivier	FrPoS-12.1	107	Cuenca, Rodrigo	FrBT5.3	90
Combortaldi, Selina	FrAT17.1	87	Cui, Chengkun	WePoS-25.31	28
Comoretto, Luca	FrBT11.2	92	Cui, Haitao	FrPoS-32.44	126
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Cui, Jianjiang	FrPoS-31.3	121
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	FrPoS-30.1	118
Cullen, Kathryn R.	ThBT13.6	48
	FrAT11.1	85
	SaAT9.4	130
Cummins, Nicholas	WePoS-07.3	15
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Cumpanasoiu, Catalina	SaCT16.1	143
Cunha, Joao Paulo Silva	ThCT15.2	56
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Cunningham, James	WePoS-22.5	22
Cuppone, Anna Vera	ThAT4.3	40
Currie, Tammy	FrPoS-28.12	114
Currlin, Seth	FrCT1.3	95
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Curtze, Carolin	FrBT6.4	90
Cutajar, Lucianne	FrPoS-07.2	104
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Dali, Melissa	SaCT1.4	139
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Dan, Wang	FrBT10.2	92
Daneault, Jean-Francois	ThPoS-21.1	69
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Darszon, Alberto	WePoS-26.1	29
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Datta, Shreyasi	FrCT9.6	98
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	FrCT2.3	96
Davalos, Rafael	FrPoS-13.6	107
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Davenport, Mark A.	WeBT3.4	7
David Pur, Moshe	ThBT8.4	47
David, Eager	FrAT17.3	87
	FrBT6.2	90
Davidson, Bradley	ThPoS-03.1	59
Davidson, Brian	FrBT5.1	90
Davidson, Richard J.	WePoS-13.3	17
Davis, Catherine	ThPoS-03.9	59
Davoudi, Anis	FrPoS-11.7	106
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	FrPoS-09.5	105
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Deeba, Farah	FrCT5.1	CC	Di Bartolo, Francesco	SaCT14.4	143
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Dellazizzo Toth, Tristan	FrBT5.5	90		ThAT7.2	40
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Delogu, Pasquale	SaBT10.2	136	Diaz-Paz, Jean Pierre	ThPoS-05.5	60
Delopoulos, Anastasios	SaAT9.1	130	DiBella, Edward V.R	WeAT9.2	3
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Delp, Scott	WeBT15.4	10	Dieffenderfer, James	FrAT17.5	87
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Demanuele, Charmaine	WePoS-27.34	33		FrPoS-19.8	110
Dementyev, Artem	SaBT4.3	135	Diekman, Casey	SaBT12.5	136
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Dempsey, Eugene	SaCT7.2	141	Dighade, Susheelkumar	WePoS-18.3	20
	SaDT2.6	145	Dijk, Derk-Jan	ThBT8.6	47
den Brinker, Bert	WePoS-05.2	13		FrCT6.6	97
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Deng, Hao	SaBT3.3	134	DiMaio, J. Michael	WePoS-16.12	19
Deng, Kexin	WeAT13.3	4		WePoS-17.5	20
Deng, Yang-Yang	WePoS-21.2	21	Dimitrov, Tanya	ThCT4.4	52
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Dereymaeker, Anneleen	WeAT1.1	1	Ding, Keya	WePoS-13.1	17
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Diot, Bruno	SaCT6.1	141	Drakulic, Budimir	WePoS-24.36	25
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Dirr, Elliott	WeBT16.1	10	Dreossi, Diego	SaBT10.2	136
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Dixon, Anna Marie Rogers	FrBT18.2	94	Du, Dongping	FrAT9.4	84
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Djalilian, Hamid	ThPoS-14.11	65		SaCT19.4	144
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	ThPoS-19.8	68	Du, Xin	FrAT5.5	83
	ThPoS-24.46	78	Du, Yiping	WeAT9.1	C
	FrCT11.6	99		WeAT9.3	3
	SaAT8.2	129		ThCT3.1	CC
	SaDT9.4	147	Du, Yong	WePoS-21.1	21
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	FrCT16.5	101	Du, Yuncheng	SaBT20.2	139
Do, Nhue	FrPoS-08.7	105		SaCT19.4	144
Do, Quan	FrCT16.6	101	Dua, Aditya	SaCT4.2	140
Dobkin, Bruce	ThPoS-02.3	58	Duan, Lixin	WePoS-21.9	22
Dobrovolskaia, Irina	SaBT18.5	138	Duan, Tingyang	SaAT10.1	130
Dockree, Paul	ThPoS-08.6	61		SaAT10.2	130
Dodd, Joanna R	WePoS-28.16	35		SaAT10.4	130
Doessel, Olaf	WePoS-10.5	16		SaAT10.5	130
Dohi, Tetsuji	FrCT12.5	100	Duan, Xiaohui	SaAT3.3	127
Dohlman, Anders	SaAT20.1	133	Duan, Yu	FrBT10.3	92
Doig, Alexa	FrCT16.6	101	Duarte, Leonardo	ThCT2.1	51
Dokos, Socrates	ThAT10.1	C	Dubey, Rajiv	WePoS-23.6	23
	ThAT10.2	41	Dubin, Marc	ThBT20.6	50
	ThBT6.3	46	Duchi, Serena	FrPoS-13.5	107
	ThBT6.6	46	Duckworth, Dexter	WeBT17.1	11
	ThBT20.4	50	Duff, Susan	FrBT11.5	92
	ThCT20.6	58	Duggento, Andrea	ThCT3.5	51
	ThPoS-14.21	66		SaCT3.5	140
	ThPoS-22.23	71	Duggirala, Mayuri	FrPoS-16.4	109
	SaAT15.1	C	Duke, Tyler	ThPoS-22.9	70
	SaBT20.1	CC		FrPoS-30.16	119
	SaDT19.1	149	Dumond, Patrick	ThPoS-06.5	60
Dollaghan, Christine	SaAT15.5	132		ThPoS-06.6	60
Doman, Keisuke	ThBT19.7	50	Dumont, Erik	SaCT14.4	143
Domingos, Joao	ThBT3.6	45	Dumont, Guy	WeAT4.4	2
	FrBT10.6	92		WeBT13.5	10
Donahue, Henry	ThPoS-03.5	59		FrPoS-28.6	114
Dong, Celia M.	SaCT3.3	140	Dümpelmann, Matthias	ThPoS-15.4	66
	SaCT3.4	140	Duncan, Christopher	FrCT20.5	102
Dong, Di	WeBT3.5	7	Dunham, Simon	WePoS-27.31	33
	FrAT3.3	82	Dunn, Andrew	FrAT15.3	87
	FrPoS-12.4	107	Dunne-Willows, Michael	FrPoS-32.39	126
Dong, Fengquan	SaAT9.3	130	Dunsmuir, Dustin	WeBT13.5	10
Dong, Guoya	ThPoS-09.12	62	Duong Van, Thuy	ThPoS-23.45	75
Dong, Huaipeng	WePoS-22.1	22		ThPoS-26.10	81
Dong, Suh-Yeon	SaBT13.3	137		FrPoS-15.3	108
Dong, Tao	FrAT18.6	88		FrPoS-28.28	115
	FrPoS-02.2	102	Dupont, Laurent	FrAT14.2	86
	FrPoS-02.3	102	Duran, Elvis	FrBT5.3	90
	FrPoS-02.5	102	Durand, Dominique	WeAT17.2	5
	FrPoS-15.6	108		WeBT18.1	CC
Dong, Xu	ThPoS-25.40	80		WeBT18.3	11
Dong, Yudi	FrPoS-01.4	102		WePoS-26.39	31
Dong, Yun	WeAT3.4	2	Duret, Guillaume	WePoS-20.6	21
	WePoS-13.8	17	Durga, P	FrBT16.6	94
	FrBT10.4	92	Dutson, Erik P.	WePoS-27.25	33
Donk, Felix	FrCT5.3	97	Dutta Choudhury, Anirban	FrCT9.6	98
Donnelly, Cyril	ThPoS-01.5	58		FrPoS-09.4	105
Donovan, Ian	SaDT6.6	146		SaCT16.3	143
Donovan, Michael	WePoS-21.3	21	Dutta, Anirban	SaAT5.5	128
Dorantes Méndez, Guadalupe	ThCT18.3	57		SaAT8.6	129
dos Santos, Vitor Sotero	FrAT14.4	86	Dutta, Rabijit	ThBT17.2	49
Doswell, Jayfus	FrPoS-10.5	106	Dutta, Tilak	ThPoS-22.32	72
Doty, Steven	ThPoS-23.36	74	Duvey, Guillaume	ThCT1.2	51
Doudican, Benjamin	ThPoS-08.9	61	Duysens, Jacques	WeBT9.2	9



Dwivedi, Anany	ThPoS-01.4	58
Dyer, Eva L.	WeBT3.4	7
Dyson, Matthew	ThPoS-12.3	64
	FrCT20.2	101
Dzupa, Valer	FrPoS-30.9	119
	FrPoS-30.10	119

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Eager, David	SaBT9.5	136
Eaton, Gerry	ThAT20.3	44
Eaton-Robb, Caitlin	ThCT4.4	52
Ebejer, Neil	WePoS-28.40	37
Eberle, Claudia	SaCT19.1	144
Ebrahim, Senan	FrCT2.3	96
Ebrahimi, Ali	FrCT13.1	100
Ecker, Paul	WePoS-26.9	29
Eckerman, Brandon	FrPoS-32.43	126
Eda, Shigetoshi	WePoS-26.22	30
Edelman, Elazer	FrPoS-27.6	113
Eden, Uri	ThPoS-17.4	68
	SaAT7.4	129
Edgardo Manuel Felipe, Riverón	WeAT3.1	1
Edgerton, V Reggie	WePoS-21.4	21
Edin, Joakim	SaAT16.1	132
Edmunds, Jordan	ThPoS-24.46	78
Edwards, Bradley Allan	ThAT18.2	44
Edwin, Bjørn	ThPoS-06.4	60
Egan, Jonathan	WeBT20.5	11
Egert, Daniel	WeAT17.5	5
egger, Jan	WePoS-16.2	18
Egland, Ian	WePoS-27.13	32
Eguchi, Kana	FrPoS-31.29	123
	SaCT12.4	142
	SaCT12.5	142
Ehrenberg, Naphtaly	FrAT13.6	86
Ehrens, Daniel	ThPoS-15.6	66
Ehrlich, Hanna	WePoS-26.1	29
Eickenscheidt, Max	SaAT1.3	127
Eigenmann, Andrej	SaCT15.3	143
Einevoll, Gaute	ThAT1.6	39
	FrAT6.3	83
Eipel, Kaitlin	WeAT6.6	2
Eixarch, Elisenda	FrAT5.1	83
Eke, Chima Stanley	FrPoS-08.6	105
Ekinci, Ali	FrPoS-24.7	112
Eklund, Jörgen	ThAT7.5	41
El Zarif, Nizar	SaDT5.4	146
Elangovan, Naveen	ThAT4.3	40
Elazab, Ahmed	WePoS-18.7	20
	ThCT3.1	51
Eldeeb, Ghaidaa W.	WeAT3.3	1
Eleonora, Centanini	ThAT8.3	41
El-Gohary, Mahmoud	FrBT6.4	90
Elhamifar, Ehsan	WeBT20.5	11
Elias, Saba	ThPoS-24.19	76
Elizabeth, Bamgbose	FrPoS-21.4	111
Elle, Ole Jacob	ThPoS-06.4	60
Ellis, Michael	ThCT10.1	C
	ThPoS-16.4	67
	FrBT6.1	CC
	SaAT6.1	C
El-Sayed, Ahmed	SaBT18.2	138
El-sharkawy, Ahmed	ThPoS-01.1	58
Elyahoodayan, Sahar	ThCT8.4	53
Emami, Ali	SaBT5.3	135
Emami, Azita	FrCT14.5	100
Emanetoglu, Nuri	SaBT4.1	135
Emilio, Trigili	FrPoS-31.24	122
Emter, Craig	ThPoS-17.1	67
Enayati, Moein	WePoS-09.4	15
Enayati, Nima	ThPoS-13.7	65
Englehart, Kevin	SaCT9.2	142
Enke, Jörg	SaDT20.2	149

Enquobahrie, Andinet	ThBT9.1	47
	ThBT9.3	47
	SaCT18.3	144
Entcheva, Emilia	SaDT14.4	148
Eom, Gayoung	WePoS-26.28	30
	FrAT18.4	88
Eom, Kyu shik	FrPoS-14.4	108
Epp, Stephanie	ThCT1.5	51
Epps, Julien	WeAT8.1	3
Epstein, Leonard	FrPoS-05.5	104
Er, Tow Peh	FrPoS-15.5	108
Erb, Kelley	WePoS-27.34	33
Erb, Patrick	FrPoS-19.8	110
Erdemir, Ahmet	WePoS-23.3	23
Erdogmus, Deniz	WeBT2.6	7
	WePoS-27.48	34
	ThPoS-09.8	62
	SaCT16.1	143
Eresen, Aydin	WePoS-15.8	18
Erickson, David	FrPoS-05.3	103
Ernes, Miikka	SaCT16.2	143
Ernst, Floris	WePoS-22.3	22
Ershad, Marzieh	ThPoS-05.8	60
Escalona-Vargas, Diana Irazú	FrBT2.2	89
	SaDT2.5	145
Eskofier, Bjoern M	WeBT15.1	10
	FrCT7.1	97
	SaAT17.3	132
	SaBT19.2	139
	SaCT2.1	140
Eslamian, Mohammadjavad	FrPoS-24.3	112
Eslampanah Sendi, Mohammad Sadegh	FrPoS-08.9	105
Esmailbeigi, Hananeh	WePoS-02.6	12
	WePoS-28.45	37
	FrPoS-28.40	116
Espinosa, Fernando	SaCT18.4	144
Espinoza Valverde, Vilma	ThPoS-09.25	63
Esposito, Dario	FrCT18.3	101
Essay, Patrick	FrPoS-10.7	106
Estepp, Justin Ronald	ThAT8.1	41
	ThAT8.5	41
Estévez-Piorno, Josep	FrBT20.4	95
Estrada, Luis	WeAT4.3	2
	FrBT20.4	95
Esty, Alana	SaDT16.2	148
Eswaran, Hari	FrBT2.2	89
	SaDT2.5	145
Esworthy, Timothy	WePoS-27.22	33
Etemad, S. Ali	SaCT9.4	142
Etemadi, Mozziyar	ThAT15.5	43
Ethridge, Lauren	WePoS-27.16	32
	ThPoS-08.5	61
Etienne, Arnelle	FrPoS-28.14	114
Eva, Costa	FrBT10.1	92
Evans, Joyce	ThPoS-19.2	68
	FrAT12.4	86
Evans, Katie	FrPoS-28.34	115
Evans, Robin John	WePoS-19.1	20
Evans, Thomas	FrPoS-19.8	110
Evans, William	SaBT4.5	135
Even-Chen, Nir	WePoS-25.24	27
Everette, Kristy	FrPoS-19.8	110
Ewen, Joshua	FrBT16.1	93
Ewis, Mohamed	ThPoS-03.3	59
Exarchos, Ioannis	FrBT11.3	92
Exarchos, Themis P.	FrPoS-11.3	106
Eyebe Fouda, Jean Sire Armand	FrPoS-30.7	119
Ezaki, Takayuki	WePoS-26.16	30
Eze, Peter	WePoS-19.1	20

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F Rafferty, Gerrard	FrBT20.2	95
F., Corvino	SaCT18.1	144
Fabiilli, Mario	SaDT14.1	147

Fabio, Stroppa	FrPoS-31.24	122	Fauchère, Jean-Claude	ThCT13.3	55
Facchinetti, Andrea	WeAT2.2	1	Favre-Félix, Antoine	ThPoS-23.13	73
	WePoS-05.5	14	Fazan Jr, Rubens	ThAT12.3	42
	FrCT12.2	99	Fazeli, Shayan	FrPoS-19.4	110
	SaBT16.2	138	Fedder, Gary K.	FrCT1.4	95
Faccioli, Simone	FrPoS-05.4	103	Fediuk, Melanie	WePoS-05.9	14
Fadiga, Luciano	FrPoS-24.1	112	Fedor, Szymon	ThBT17.5	49
Faes, Luca	ThAT12.1	C	Fekri, Faramarz	ThPoS-04.3	59
	ThAT12.4	42	Felton, Christopher	FrPoS-20.8	111
	ThAT12.5	42	Feng, Chen	FrPoS-29.3	116
	ThAT12.6	42	Feng, Dagan	WePoS-15.7	18
	SaAT2.1	C		WePoS-17.4	19
	SaAT2.2	127		FrAT3.5	83
	SaCT7.1	141		SaDT16.3	148
Faezipour, Miad	WePoS-27.45	34	Feng, Yanqiu	ThCT7.1	53
	ThPoS-14.8	65		SaCT3.3	140
	SaBT18.2	138	Feng, Zhe	ThCT9.3	54
Faghih, Rose T.	FrCT9.4	98	Feng, Zhouyan	WePoS-25.40	28
Fahmy, Ahmed S.	SaCT1.6	140		ThPoS-14.4	65
Fahoum, Firas	ThBT8.4	47		ThPoS-14.5	65
Fajardo, Laurie	ThPoS-23.23	74	Feris, Rogerio	FrCT3.3	96
Fakhar, Sina	WePoS-24.36	25	Fernandez, Gerardo	WePoS-21.3	21
Fales, Roger	FrBT20.3	95	Fernandez-del-Palacio, Encarnación	FrPoS-10.6	106
	FrBT20.6	95	Fernandez-Llatas, Carlos	SaCT18.2	144
Fallahi, Hojjatollah	ThCT19.4	57	Ferraioli, Giampaolo	SaCT5.4	141
	FrBT14.6	93	Ferrario, Damien	ThCT13.3	55
Fallegger, Florian	ThCT10.3	54	Ferreira, Ana	SaAT2.5	127
Fallon, James	ThCT1.5	51	Ferreira, Manuel Joao	FrBT10.1	92
Faltys, Michael	FrCT14.4	100		FrCT3.1	96
Falzon, Owen	FrPoS-07.2	104		FrCT10.2	99
	SaCT10.2	142	Ferrer Lluís, Ignasi	WeAT4.3	2
	SaCT10.3	142	Ferris, Daniel	ThAT11.6	42
Fam, Jiang Ming	WePoS-26.20	30		ThAT16.2	43
	WePoS-26.21	30		ThPoS-25.33	80
	WePoS-26.42	31		ThPoS-25.46	80
Fan, Haiyan	FrPoS-15.4	108	Ferro, Tyler	WePoS-27.37	34
Fan, Joanna	ThAT15.5	43	Fessell, David	WeAT3.2	1
Fan, Qing	ThBT13.4	48		FrCT3.4	96
Fan, Xiangyu	ThPoS-23.15	73	Fetzner, John	FrBT18.5	94
Fan, Yubo	WePoS-24.2	23	Feuvrier, Francois	FrCT6.5	97
Fan, Zhining	FrPoS-31.44	123	Fey, Nicholas	ThBT18.6	50
Fan, Zhongyue	SaDT3.1	145		ThPoS-07.5	61
Fang, Chris	ThPoS-22.29	72	Fico, Giuseppe	ThPoS-25.5	78
Fang, Peng	ThPoS-20.7	69		FrPoS-10.6	106
	FrCT7.3	98	Fiebig, Norbert	FrBT4.5	90
	FrCT20.6	102	Fieremans, Els	ThCT3.4	51
	SaAT4.5	128	Fietze, Ingo	WeBT4.1	7
Fang, Shih-Hau	WePoS-07.1	15		WeBT4.4	7
Fang, Yuan	WePoS-18.6	20	Fifer, William P.	SaDT2.4	145
Fang, Yuqi	ThAT3.3	39	Filipiak, Patryk	ThPoS-25.9	78
	ThPoS-16.10	67	Filipovic, Nenad	FrPoS-27.3	113
	ThPoS-21.13	70	Fillion-Robin, Jean-Christophe	ThBT9.1	47
Faqeeh, Akram	FrBT20.3	95	Finedore, Mary	WePoS-02.6	12
	FrBT20.6	95	Finke, Andrea	ThPoS-08.8	61
Faragasso, Angela	FrPoS-18.7	110	Finkelstein, Julia	FrPoS-05.3	103
Farahmand, Sina	ThPoS-15.3	66	Finn, J. Paul	WeBT8.3	8
	ThPoS-19.3	68	Finnilä, Mikko	ThPoS-24.20	76
Farajidavar, Aydin	FrAT14.1	CC	Fioretti, Sandro	WePoS-10.1	16
	FrAT14.5	86		SaAT13.3	131
	FrPoS-14.2	108		SaCT12.2	142
Farias, Mylène	SaCT5.2	141	Fiorio, Christophe	FrPoS-12.1	107
Faridi, Pegah	FrBT14.6	93	Firmin, David	ThBT3.5	45
Farivar, Masoud	FrCT14.5	100	Fischer, Georg	FrCT4.5	97
Farnia, Parastoo	WePoS-19.8	21	Fischer, Gunter	FrBT4.5	90
Farris, Alton	WePoS-20.2	21	Fischer, Petra	ThCT8.3	53
Farris, Chad	WePoS-13.10	17	Fischi Sommer, Leonardo	ThCT12.2	55
Farris, Ryan	FrAT13.1	86	Fiser, Ondrej	SaBT17.3	138
Farro, Ignacio	FrPoS-26.3	113	Fishbaugh, James	ThBT9.1	47
	FrPoS-27.5	113	Fitzgerald, Kate	FrPoS-08.4	105
Farshchiansadegh, Ali	ThAT4.4	40	Flanagan, Steven	ThCT3.4	51
Farsiu, Sina	ThPoS-23.27	74	Fleming, Aaron	ThPoS-12.7	64
Farzaneh, Negar	WeAT3.2	1	Flesher, Sharlene N	ThAT5.2	40
	FrCT3.4	96	Fletcher, Richard Ribon	SaBT14.1	C
Farzanehfard, Parisa	SaCT2.4	140		SaBT14.6	137
Fatemizadeh, Emad	WePoS-18.8	20	Fleuriet, Jérôme	ThPoS-23.9	73
Fathallah-Shaykh, Hassan	ThAT10.4	41			

Fleury, Anthony	SaCT6.1	141	Fried, Shelley	ThBT6.1	C
	SaCT6.4	141		ThBT6.2	46
Flores, Francisco Javier	WePoS-17.6	20		ThPoS-14.17	66
Flores, Thomas	WePoS-24.13	24		ThPoS-20.2	69
	ThBT6.1	46		ThPoS-20.8	69
Flotho, Philipp	WePoS-28.12	35	Friedenberg, David	WeAT6.3	2
	FrCT10.1	C		WeAT6.4	2
	FrCT10.3	99		WeAT6.6	2
Fluet, Gerard	FrBT8.3	91	Friedrich, Sarah	FrPoS-24.4	112
Foglyano, Kevin M.	ThPoS-25.39	80	Friesen, Melissa	FrAT19.3	88
Folio, Les	SaDT3.2	145	Frisina, Robert	ThCT1.2	51
Fong, Justin	ThPoS-21.2	69	Frisoli, Antonio	FrPoS-31.24	122
Fonseca, Lucas	SaBT1.2	134	Fritz, Jessica	FrAT14.1	86
Fonseca, Pedro	ThCT11.2	54	Fritz, Thomas	ThPoS-22.5	70
	SaDT12.1	147	Frize, Monique	SaDT16.2	148
Fontan, Fermin	FrBT10.3	92	Froger, Jérôme	FrCT6.5	97
Foo, Ming Jeat	ThPoS-06.1	60	Fry, Katelyn	SaCT17.1	143
Fookes, Clinton	WePoS-05.3	14	Fu, Bo	FrPoS-20.1	110
	WePoS-13.6	17	Fu, Dapeng	FrAT9.1	84
	FrCT10.1	99	Fu, Huazhu	WePoS-21.9	22
Foong, Ruyi	ThPoS-09.14	62		ThAT19.2	44
Forest, Craig R.	WePoS-17.6	20	Fu, Jonathan	FrPoS-06.3	104
Formica, Domenico	FrPoS-17.1	109	Fu, Ling	WePoS-16.7	19
Formisano, Rita	FrPoS-29.25	117		WePoS-18.5	20
Forner-Cordero, Arturo	WeBT9.1	C		SaDT3.4	145
	WeBT9.2	9	Fu, Mei R.	ThPoS-11.7	63
	ThCT12.2	55	Fu, Menglong	SaAT4.5	128
	SaAT14.3	131	Fu, Michael J	WePoS-28.42	37
Forouzanfar, Mohamad	ThBT2.3	45	Fu, Nan	SaAT17.6	132
Forrest, Gail F	FrAT13.2	86	Fu, Yifan	ThPoS-26.5	81
	FrAT13.5	86	Fu, Yongji	SaAT18.6	133
Forsman, Mikael	ThAT7.2	40	Fuad, Elkhoury	ThPoS-26.3	81
	ThAT7.5	41	Fueda, Yuri	WePoS-24.35	25
	ThAT7.6	41	Fuentes Cabrera, Alvaro Rodrigo	ThAT1.3	39
Forssell, Mats	FrCT1.4	95	Fujie, Masakatsu G.	ThPoS-01.2	58
Foster, Evelyn	ThPoS-20.9	69		ThPoS-07.7	61
Foster, Marc	FrPoS-19.8	110	Fujie, Tatsuro	WePoS-25.48	29
Fotiadis, Dimitrios I.	WePoS-22.7	22		WePoS-28.18	35
	ThCT5.2	52	Fujii, Genichiro	ThPoS-23.35	74
	FrCT2.2	96	Fujii, Mayuko	ThPoS-22.22	71
	FrPoS-04.2	103	Fujii, Satoshi	FrPoS-24.9	112
	FrPoS-11.3	106	Fujimoto, Kazuma	SaCT15.6	143
	FrPoS-26.2	113	Fujimoto, Kazushi	FrBT12.4	93
	FrPoS-27.3	113	Fujimoto, Ryuichi	WePoS-16.11	19
	FrPoS-27.6	113	Fujimura, Soichiro	WePoS-29.21	38
	SaDT16.5	148		ThCT6.2	52
Fowlkes, Brian	SaDT14.1	147		ThCT6.4	52
Fox, Kate	FrPoS-13.5	107		ThCT6.5	53
Foxall, Tom	WePoS-24.36	25		ThCT6.6	53
Fragomeni, Gionata	FrBT12.5	93	Fujino, Yusuke	FrBT12.4	93
Franszczuk, Piotr	WePoS-03.4	12		FrPoS-28.37	116
Franciosini, Angelo	SaAT9.6	130	Fujita, Etsunori	FrPoS-19.3	110
Francis, Joseph Thachil	WeBT1.1	6	Fujita, Hiroshi	WePoS-25.35	28
Franco, Céline	SaCT6.1	141		WePoS-27.17	33
	SaCT6.4	141		ThAT19.1	C
Frank, Loren	SaAT7.4	129		ThAT19.3	44
Franklin, David W.	SaBT6.1	135		ThAT19.4	44
	SaBT6.2	135		ThBT19.1	CC
Franklin, Sae	SaBT6.1	135		ThBT19.3	50
	SaBT6.2	135		ThBT19.4	50
Fraser, John F.	SaBT12.6	137		ThBT19.6	50
Frazier, O.H.	FrPoS-25.3	112		ThPoS-23.11	73
	FrPoS-25.6	113		FrPoS-31.21	122
Freeborn, Todd	WePoS-25.17	27	Fujita, Ryosuke	ThCT6.3	52
	ThBT4.1	46	Fujita, Tetsuya	FrPoS-32.7	124
	FrPoS-20.1	110	Fujita, Yusuke	FrPoS-28.43	116
Freitag, Christine M.	WePoS-29.11	38	Fujita, Yuya	FrBT5.6	90
Frenkel, Avital	ThCT20.5	58	Fujiwara, Koichi	WePoS-24.39	25
Fricks, Rafael	SaBT16.5	138		WePoS-27.7	32
Fridgeirsson, Egill Axfjord	ThBT20.3	50		FrPoS-28.42	116
Friebe, Michael	WePoS-25.47	28		SaAT19.6	133
	ThPoS-22.12	71	Fujiwara, Koji	ThPoS-22.40	72
	ThPoS-24.21	76	Fujiwara, Tomoko	FrPoS-17.6	109
	FrPoS-28.32	115	Fukami, Tadanori	WePoS-24.10	24
			Fukase, Miyabi	SaBT12.2	136
			Fukayama, Osamu	WePoS-26.43	31

Fukuda, Hiroshi	WePoS-16.11	19
Fukuda, Keiko	FrBT18.4	94
Fukuda, Osamu	SaCT9.1	142
Fukuda, Yoshiyuki	FrPoS-21.2	111
Fukuda, Yosuke	SaCT6.6	141
Fukudome, Koji	WePoS-29.21	38
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Fukumori, Daichi	WePoS-24.40	25
Fukumori, Kosuke	ThPoS-22.25	71
Fukumoto, Kensaku	FrPoS-31.7	121
Fukumoto, Wataru	ThPoS-23.22	74
Fukumoto, Yuto	FrPoS-29.11	117
Fukunaga, Shuichi	FrAT6.6	84
Fukuoka, Yutaka	WePoS-27.39	34
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Funamoto, Kiyoe	WePoS-27.23	33
Furst, Jacob D.	SaBT9.1	136
Furui, Akira	ThCT12.4	55
Furukawa, Jun-ichiro	WeBT20.2	11
Furuta, Takuya	FrPoS-32.15	125
Furuya, Motohide	WePoS-29.10	38
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Gaide, Jonathan	ThPoS-21.4	69
Gaiduk, Maksym	WeBT4.2	7
Gaihede, Michael	ThPoS-21.5	69
Gaitan-Gonzalez, Mercedes	FrBT2.1	89
Galambos, Ludwig	WePoS-24.13	24
Gale, Bruce Kent	WePoS-28.4	35
Galea, Mary P.	ThPoS-21.2	69
Galka, Andreas	WePoS-01.1	11
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Gallagher, Joseph	FrPoS-04.2	103
Gallegos Funes, Francisco Javier	WePoS-28.43	37
Gallinger, Steven	WePoS-24.21	24
Gallippi, Caterina	FrCT5.4	97
Galloway, James	WePoS-13.6	17
Galvez, Veronica	FrCT14.1	100
Gamaldo, Charlene	FrBT16.1	93
Gambus, Pedro L.	ThAT12.2	42
Ganesan, Prasanth	WePoS-26.7	29
Gangi, Afshin	ThPoS-02.4	58
Ganguly, Anshuman	WePoS-08.1	15
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Gao, Fei	FrCT4.3	96
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Gao, Jianbo	ThAT19.6	44
Gao, Na	WePoS-18.6	20
	ThBT13.1	48
Gao, Patrick P.	SaCT3.3	140
Gao, Pei	ThPoS-14.3	65
Gao, Qingfeng	FrPoS-28.19	115
Gao, Shenghua	FrAT10.3	85
Gao, Xiaomeng	FrPoS-22.3	111
Gao, Xiaorong	FrAT1.2	82

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Gao, Yang	SaBT15.1	137
Gao, Yingguo	SaAT3.3	127
Gao, Yixiang	SaAT19.5	133
Gao, Yuan	WeBT3.5	7
Gao, Yujie	ThPoS-15.2	66
Gao, Zhifan	ThBT3.5	45
Gao, Zhixian	SaDT6.3	146
Gao, Ziyang	ThPoS-18.1	68
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Gaonkar, Bilwaj	WePoS-16.1	18
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Garbarini, Erica	FrAT13.5	86
Garcia Lopez, Irene	ThAT16.3	43
	FrPoS-20.2	110
Garcia Ricardez, Gustavo Alfonso	ThPoS-03.6	59
Garcia-Betances, Rebeca I.	WePoS-24.12	24
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Garcia-Casado, Javier	FrBT20.4	95
Garcia-Rosas, Ricardo	FrBT13.2	93
Garcia-Tirado, Jose	FrPoS-05.4	103
Garde, Ainara	WeAT4.4	2
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Gardner, Mark	FrPoS-20.4	110
Garg, Pankaj	ThBT3.3	45
Garmirian, Lindsay	ThPoS-14.20	66
Garn, Heinrich	SaDT9.3	147
Garolera, Maite	WePoS-24.12	24
Garrison, Jake	SaCT2.2	140
Garzon Ramirez, Alvaro Esteban	ThPoS-24.24	76
Gaßner, Heiko	SaBT19.2	139
Gatouillat, Arthur	SaBT17.2	138
Gaudio, Lina Teresa	FrBT12.5	93
Gaunt, Robert	WeAT6.1	2
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Gaurav, Aman	SaAT19.2	133
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Gazdhar, Amiq	SaCT15.2	143
Ge, Chenjie	ThCT16.2	56
	SaDT3.3	145
Gebremedhin, Assefaw	ThBT17.3	49
	ThBT18.4	49
Gee, Alan	WeAT2.6	1
Gehin, Claudine	SaBT17.2	138
	SaDT4.4	146
Gehlbach, Peter	FrCT13.1	100
Geiser, Thomas	SaCT15.2	143
Gélis, Anthony	SaBT1.2	134
Gell, Laura	FrPoS-30.5	118
Gembler, Felix	ThPoS-09.2	62
Gemignani, Jessica	WePoS-04.5	13
Genda, Tatsuya	WePoS-26.37	31
	FrPoS-32.34	126
Geng, Yanjuan	FrCT7.3	98
Gennari, John H.	FrPoS-28.5	114
Geoghegan, Rory	ThPoS-26.3	81
Georga, Eleni I.	FrPoS-27.3	113
	SaDT16.5	148
George, Boby	WePoS-23.2	23
	WePoS-23.11	23
George, Jacob A.	FrCT20.5	102
George, Stephanie	SaDT4.2	146
Georgieva, Antoniya	SaDT2.2	145
Georgiou, Julius	FrPoS-23.4	112
Gerber, Stephan Moreno	FrCT6.3	97
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Gerboni, Giulia	FrBT8.5	91
Gereau, Robert	WeBT5.1	8
Gerhardson, Tyler	SaDT14.5	148
Gerig, Guido	ThBT9.1	47
Gerke, Sebastian	FrPoS-32.35	126
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Geyer, Hartmut	ThAT11.5	42
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Gfoehler, Margit	WePoS-26.9	29	Giurazza, Francesco	SaCT18.1	144
	ThCT13.4	55	Giverts, Simeon	ThCT17.1	56
	ThPoS-13.3	64	Giza, Christoper	WePoS-16.1	18
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	ThAT17.6	43	Gkogkidis, Constantin Alexis	FrBT1.6	89
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Ghaffarzadegan, Shabnam	ThCT9.3	54	Glaser, Vojko	SaDT6.4	146
Ghamri, Yassine	WeAT14.3	4	Glass, Kristin	FrPoS-11.2	106
Ghanbari, Hamid	WePoS-11.6	16		SaAT16.1	CC
	FrPoS-09.6	105		SaAT16.2	132
Ghasemi, Zahra	WePoS-26.10	29		SaCT10.1	142
Ghasemzadeh, Hassan	ThBT17.2	49	Glavin, Martin	WeBT4.1	7
Ghassabi, Zeinab	SaDT5.3	146	Gluckman, Bruce J.	FrPoS-20.3	110
Ghassemi, Mohammad	WePoS-28.21	35	Gnade, Andrew	WePoS-27.26	33
	ThBT7.2	46	Go, Gwangjun	ThCT13.1	55
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	FrPoS-10.4	106	Godin, Christelle	ThBT2.2	45
	SaAT16.3	132	Goding, Josef	SaCT11.2	139
Ghassemi, Zahra	SaDT15.5	148	Godino-Llorente, Juan Ignacio	ThCT9.2	54
Ghazaei, Fatemeh	ThPoS-11.14	64	Goel, Niraj	WePoS-01.2	11
Ghazarian, Sharon	FrPoS-08.7	105	Goetz, Stefan	FrAT8.6	84
Ghiasi, Mohammadsadegh	WeBT20.4	11	Goh, Daniel	FrBT19.3	95
Ghiasi, Shadi	FrBT7.6	91	Gok, Sinan	ThPoS-14.22	66
	SaAT2.3	127		SaBT1.6	134
GholamHosseini, Hamid	FrPoS-23.3	112	Goldberg, Arthur	FrPoS-28.5	114
Gholizadeh-Ansari, Maryam	SaBT3.6	134	Goldberg, Miriam A.	WePoS-24.31	25
Ghoraani, Behnaz	WePoS-26.7	29	Goldfarb, Michael	FrAT13.1	86
	FrCT16.1	100		FrAT13.3	86
Ghosh, Bijoy	WePoS-28.7	35		FrBT13.3	93
Ghosh, Biswajoy	FrPoS-29.16	117	Goldsmith, H. Hill	WePoS-13.3	17
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Ghosh, Joydeep	WeAT2.6	1	Goldstone, Aimée	ThBT2.3	45
Ghosh, Nirmalya	WePoS-18.3	20	Gole, Sarin	FrPoS-28.8	114
Ghosh, Prasanta	ThCT9.1	53	Golestanirad, Laleh	WeAT20.4	6
	FrCT9.6	98		SaAT8.3	129
	SaBT7.1	135	Goletsis, Yorgos	FrPoS-04.2	103
Ghosh, Souparno	WePoS-04.1	13	Gomaa, Iman	ThPoS-03.3	59
	ThCT2.5	51	Gomes Ataide, Elmer Jeto	ThPoS-24.21	76
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	SaBT2.4	134	Gomez Montoya, Alejandro	WePoS-12.1	16
Ghovanloo, Maysam	ThPoS-13.6	65	Gómez Quintana, Sergi	SaAT14.4	131
Giagka, Vasiliki	FrBT1.2	89	Gomez, Alberto	WePoS-22.4	22
Giancarlo, Ayala-Charca	FrPoS-17.2	109		ThBT9.2	47
Giang, Christian	ThPoS-25.29	80	Gomez, Britam	FrPoS-31.8	121
Giarretta, Alberto	WeBT12.4	9		FrPoS-31.9	121
	ThPoS-18.4	68	Gomez, Carlos	WePoS-03.6	12
	SaAT20.2	133	Gómez-García, Jorge Andrés	ThCT9.2	54
Gibbons, Eric	WeAT9.2	3	Gomez-Peña, Cristina Aimee	FrAT3.6	83
Gibson, Des	FrPoS-31.36	123	Gomis, Pedro	SaBT20.4	139
Giegerich, Clemens	SaAT15.4	132	Goncharov, Vasily	FrBT5.4	90
Gierthmuehlen, Mortimer	FrBT1.1	89	Gonenc, Berk	FrCT13.4	100
	FrBT1.6	89	Gong, Bangming	FrBT10.2	92
Giffen, Perry Randall	FrAT19.4	88		FrBT10.4	92
Gil, Eduardo	SaBT13.1	137	Gong, Chen	WePoS-25.21	27
Gil, Yeongjoon	WePoS-25.4	26	Gong, Dawei	ThPoS-25.47	81
Giladi, Moshe	FrAT20.4	88	Gong, Hui	SaAT8.2	129
Gilardino, Mirko	WePoS-23.7	23	Gong, Yiyang	ThPoS-23.27	74
Gilbert, Barry	FrPoS-20.8	111	Gonzalez Ballester, Miguel Angel	ThBT5.1	C
Gilbert, Kathleen	WePoS-14.2	17		ThBT5.3	46
Gilchrist, Jeff	SaDT16.2	148		ThBT9.5	47
Giles, Joshua	ThPoS-09.18	62		FrAT5.1	CC
Gillespie, Anna	SaAT7.4	129		FrAT5.1	83
Gilmour, Aaron	SaCT1.2	139	González Petlalcaco, Octavio	SaDT15.4	148
Gimenez, Francieli Vanessa	FrPoS-04.3	103	González, Fabio	FrAT10.1	85
Giorgia, Ercolini	FrPoS-31.24	122	Gonzalez, Laura	SaAT2.6	127
Giovannini, Andrea	FrBT16.2	94	Gonzalez, Mendoza	WePoS-28.32	36
Giraldo, Beatriz	SaAT13.5	131		FrPoS-28.47	116
	SaAT13.6	131	Gonzalez-Camarena, Ramon	ThCT18.3	57
	SaBT13.5	137		FrBT2.1	89
Girardi, Ivan	FrBT16.2	94	Gonzalez-Hermosillo, Jesus Antonio	FrBT2.1	89
Girdler, Sonya	FrAT11.4	85	Gonzalez-Martinez, Sergio	WePoS-25.50	29
Giri, Lopamudra	WePoS-20.5	21	Gonzalez-Navarro, Paula	WeBT2.6	7
	SaAT20.6	133	Goodwin, Guy	WeAT8.3	3
Giudetti, Guido	FrPoS-31.24	122		FrPoS-32.45	126

Goodwin, Matthew	WePoS-05.13	14			FrPoS-32.43	126
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Gope, Dipanjan	ThCT9.1	53	Grigorovsky, Vasily		ThPoS-10.3	63
Gordhandas, Ankit	FrBT20.5	95	Griko, Yuri		SaCT19.3	144
Gordon, Christine	WeAT12.3	4	Grill, Warren		ThBT20.5	50
	WePoS-28.33	36	Grioli, Giorgio		FrPoS-30.6	118
Gordon, Karen	WePoS-27.38	34	Groenendaal, Willemijn		WePoS-09.1	15
Gordon, Keith	ThPoS-07.5	61	Groff, Richard E		FrPoS-12.8	107
Gordon, Murdoch	ThBT17.2	49	Grønvold, Fredrik Sommerfelt		FrPoS-02.5	102
Gordon, Paul	FrAT14.3	86	Gross, Martyn		FrBT19.1	94
Gordon, Stephen	FrAT1.5	82	Gross, Robert		FrAT8.5	84
Gorsic, Maja	ThPoS-03.1	59	Grossenbacher, Olivier		ThCT13.3	55
	FrCT11.1	99	Grossman, Robert		ThPoS-24.19	76
Gosa, Memorie	WePoS-25.17	27	Grover, Pulkit		ThCT4.3	52
Gosselin, Benoit	WePoS-02.10	12			FrPoS-28.14	114
	ThCT17.6	57	Gruart, Agnes		ThCT1.6	51
	ThPoS-25.2	78	Gruen, Margaret		FrPoS-19.8	110
	FrAT7.4	84	Grundfest, Warren S.		WePoS-27.25	33
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Gosselin, Clément	FrAT7.4	84			FrPoS-28.41	116
	FrPoS-28.31	115	Grundstrom, Casandra		FrPoS-11.1	106
Gotanda, Masahide	FrPoS-24.9	112	Gruppioni, Emanuele		ThAT4.1	40
Goto, Makoto	ThPoS-11.9	63	Gryak, Jonathan		WeAT3.2	1
Goto, Mari	ThPoS-24.44	78			WeBT3.3	7
Gottwald, Eric	SaBT14.2	137			WePoS-11.6	16
Gough, Maya	ThPoS-18.3	68			WePoS-16.10	19
Govindaiah, Arun	WePoS-16.13	19			ThCT3.2	51
Goyal, Ashish	SaAT18.2	133			FrCT3.4	96
Gozal, David	WeBT13.2	9			FrPoS-09.6	105
	WeBT13.4	10			SaCT7.6	142
Gradl, Stefan	FrCT7.1	97			SaDT3.5	145
	SaAT17.3	132	Gsaxner, Christina		WePoS-16.2	18
Graham, Jasmine Y.	FrCT17.4	101	Gu, Bin		FrAT1.1	82
Graham, Katherine	WePoS-16.12	19	Gu, David Xianfeng		WeBT3.1	7
	WePoS-17.5	20			SaAT3.1	127
Grajo, Joseph	FrCT5.5	97	Gu, Feng		ThPoS-23.44	75
Gramatikov, Boris	WeAT19.1	C			FrPoS-28.29	115
	WeAT19.2	5	Gu, Hongcheng		FrPoS-28.22	115
	WeAT19.3	6	Gu, Irene Y.H.		ThCT16.2	56
	WeAT19.4	6			SaDT3.3	145
Grandas-Pérez, Francisco	ThCT9.2	54	Gu, Li-Qun		FrPoS-24.8	112
Grangeat, Pierre	ThCT2.1	51	Gu, Min		FrPoS-28.22	115
Grant, Edward	ThPoS-06.7	60	Gu, Minyu		ThCT7.5	53
Gratacós, Eduard	FrAT5.1	83	Gu, Xiao		SaBT2.1	134
Grau, Vicente	ThBT5.2	46	Gu, Xuejun		WeBT6.1	C
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Graupe, Daniel	ThPoS-14.7	65			WeBT6.2	8
Graversen, Carina	ThAT1.3	39			FrAT5.1	C
Graves, Toni	FrPoS-29.39	118	Gu, Zaiwang		FrAT10.3	85
Grayden, David B.	ThBT1.5	45	Gu, Zhong-Ze		WeBT11.1	9
	FrBT8.5	91			FrPoS-28.22	115
	SaAT7.3	129	Gu, Zixi		ThCT15.4	56
Greco, Alberto	WePoS-02.8	12	Gualtieri, Massimo		SaBT14.1	137
	WePoS-06.4	14	Guan, Chenxiao		FrCT4.4	97
	ThAT2.4	39	Guan, Cuntai		WePoS-04.9	13
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	FrBT7.6	91	Guan, Yun		FrCT8.1	98
	SaAT2.3	127			FrCT11.2	99
Green, James R.	FrAT19.4	88	Guarin, Diego Luis		WeBT10.1	9
Green, Peter R	ThBT18.2	49			ThPoS-24.31	77
Green, Philip	SaBT19.4	139			ThPoS-25.49	81
Green, Rylie Adelle	SaCT1.2	139			SaBT7.2	135
Greet, Brian	FrCT4.2	96	Guerra Marin, Jorge		FrPoS-08.5	105
Greger, Bradley	FrPoS-30.28	120			FrPoS-08.7	105
Gregor, Jens	SaBT10.3	136	Guerrero, Ricardo		FrPoS-08.10	105
Gregory, Shaun David	FrCT4.1	96	Guerrier, Claire		FrBT5.5	90
	SaBT12.6	137	Guerrisi, Maria		SaCT3.5	140
Grenier, Etienne	SaDT4.4	146	Guevara, Miguel		WePoS-18.4	20
Grepl, Martin	WePoS-27.27	33	Guevara, Pamela		WePoS-18.4	20
Greve, Joan	SaDT14.1	147	Guger, Christoph		WeAT5.1	C
	SaDT14.5	148			WeAT5.1	2
Grichnik, Roland	ThPoS-09.2	62	Guggenmos, David		FrBT8.2	91
Griffin, Anthony	FrBT9.4	91	Guggisberg, Adrian G		ThPoS-25.29	80
	FrBT18.3	94	Gui, Yihan		FrCT12.6	100
Griffin, Wesley	ThAT20.4	44	Guidarelli, Carolyn		FrPoS-05.1	103
Griffith, Jacob	FrPoS-32.5	124	Guidera, Jennifer		SaAT7.4	129

Guiho, Thomas	SaCT1.4	139
Guillen, Sergio	ThPoS-25.5	78
	FrPoS-30.11	119
Guiraud, David	ThPoS-14.12	65
	FrCT6.5	97
	SaBT1.2	134
	SaCT1.4	139
Gullo, Maurizio R.	SaCT15.3	143
Gunaratne, Pujitha	FrPoS-09.6	105
Gunay, Sezen Yagmur	ThPoS-09.8	62
Gunduz, Aysegul	SaCT1.6	140
Gunn, Martin	WePoS-24.37	25
Gunnarsdottir, Kristin	FrBT16.1	93
Gunning, Faith	ThBT20.6	50
Gunturk, Bahadir	WeAT10.2	3
Guo Dongyue, Dongyue	ThPoS-08.3	61
Guo, An	FrPoS-30.21	119
Guo, Hua	ThCT7.1	53
Guo, Qihao	ThPoS-08.1	61
	ThPoS-10.1	63
Guo, Rui	FrBT17.4	94
Guo, Shengxin	WePoS-24.16	24
Guo, Shijie	ThPoS-07.1	60
Guo, Shuli	FrBT19.3	95
Guo, Tianruo	ThAT10.2	41
	ThBT6.3	46
	ThBT6.6	46
	ThPoS-14.21	66
Guo, Xiaojie	SaAT3.2	127
Guo, Xiaoyuan	FrCT3.2	96
Guo, Xin	WePoS-06.3	14
	WePoS-18.6	20
	ThBT13.1	48
Guo, Yingkun	FrPoS-12.4	107
Guo, Zhaoxi	SaCT3.2	140
Gupta, Chandni	WePoS-22.4	22
	ThBT9.2	47
Gupta, Monesha	FrPoS-08.7	105
Gupta, Suranjana	SaCT19.6	144
Gurel, Nil Zeynep	ThCT17.5	56
Gurusamy, Kurinchi	FrBT5.1	90
Gushi, Shotaro	ThPoS-05.1	60
	ThPoS-23.16	73
Gustafsson, Fredrik	ThBT8.5	47
Gutierrez, Gonzalo Cesar	WeBT13.2	9
	WeBT13.4	10
Gutierrez, Jairo	FrPoS-23.3	112
Gutierrez, Marco	WePoS-14.3	18
Gutierrez, Nathaniel-Georg	SaCT18.4	144
Gutierrez-Osuna, Ricardo	WePoS-01.2	11
Gutschmidt, Stefanie	FrPoS-24.7	112
Guyton, David	WeAT19.2	5
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Gyselaers, Wilfried	WePoS-27.49	34

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Ha, Kwon Woo	WePoS-24.50	26
Ha, Sohmyung	FrCT1.5	95
	FrPoS-17.5	109
Ha, Yoonhee	FrPoS-28.50	116
Haab, Lars	FrCT10.3	99
Haas, Kurt	FrBT5.5	90
	FrPoS-31.42	123
Habboush, Nawar	WePoS-01.4	12
Haberstroh, Joerg	FrBT1.6	89
Habre, Rima	FrPoS-19.4	110
Hackley, Steven Allen	WePoS-28.47	37
	ThPoS-25.30	80
Haddab, Yassine	SaAT14.1	131
Haddad, Ali	ThPoS-08.7	61
Haddadi, Bahram	ThCT13.4	55
Haddara, Raneem	ThPoS-21.2	69

Haddix, Chase	ThPoS-19.7	68
	ThPoS-25.41	80
Hadjinicolaou, Alex E.	ThBT6.2	46
	ThPoS-20.2	69
	FrBT7.3	91
Haemmerich, Dieter	FrBT14.1	93
Haesler, Sebastian	ThPoS-14.1	65
Hafeez, Muhammad Adeel	WePoS-06.5	14
Häfliger, Philipp	ThAT1.6	39
	FrAT6.3	83
Hageman, Tijmen	ThPoS-03.3	59
Hagen, Chad	SaDT12.6	147
Hagen, Espen	FrAT6.3	83
Hagengruber, Annette	ThPoS-02.5	58
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Hagiwara, Naoki	WePoS-24.28	25
	WePoS-24.49	26
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Hagiyama, Naoki	FrPoS-19.3	110
Hahn, James	FrPoS-08.8	105
Hahn, Jin-Oh	WeAT14.1	CC
	WeBT14.1	10
	WePoS-26.10	29
	WePoS-26.11	29
	FrPoS-31.30	123
Haider, Clifton	FrPoS-20.8	111
Haider, Masoom	WePoS-24.21	24
Hairston, W. David	WePoS-27.13	32
	WePoS-27.28	33
	ThAT16.1	CC
	ThAT16.2	43
	ThAT16.5	43
	ThAT16.6	43
	FrBT18.2	94
	SaAT17.4	132
Hajabdollahi, Mohsen	WePoS-19.9	21
	SaBT5.3	135
Hajdu, Andras	WeAT3.1	1
	FrAT3.1	82
	FrCT16.2	100
Haji Ghaffari, Dorsa	FrPoS-31.34	123
Hajzadeh, Iman	FrPoS-23.2	112
Hajnal, Joseph V.	WePoS-17.2	19
	ThBT9.6	47
Håkansson, Bo	ThPoS-22.3	70
Halford IV, John	FrAT18.2	88
Hall, Christopher	WePoS-24.37	25
	FrPoS-28.2	114
Hall, Timothy	SaDT14.5	148
Hallez, Hans	SaCT4.4	141
Hallock, Laura	WePoS-28.2	34
Halter, Ryan	ThBT4.2	46
Hama, Kengo	WePoS-26.41	31
Hamad, Eyad	FrPoS-02.6	102
Hamada, Hiromi	WePoS-29.9	38
Hamanaka, Hiroki	ThPoS-22.22	71
Hamdan, Sara	ThCT12.4	55
Hamdi, Nabila	ThPoS-01.1	58
Hameed, Saad	ThPoS-21.4	69
Hameed, Uzair	FrAT19.4	88
Hamelmann, Paul	SaDT4.3	146
Hamid, Laith	WePoS-01.4	12
Hamilton, Garun	ThAT18.2	44
Hamilton-Wright, Andrew	WePoS-27.38	34
	FrAT7.2	84
Han, Chengcheng	ThBT2.1	45
Han, Cheol	WeAT16.2	5
Han, Gyu-Bum	WePoS-25.13	27
Han, Haegin	WeBT20.1	11
Han, Hua	WePoS-15.3	18
	SaBT3.3	134
Han, IlTaek	ThPoS-25.43	80
Han, KyungHun	WePoS-25.16	27
Han, Muhong	SaDT4.2	146



Han, Sangjin	FrPoS-29.28	118	Hasegawa, Masaki	ThPoS-11.3	63
Han, Sangjun	WePoS-09.6	15	Hasegawa, Yasutaka	WePoS-25.14	27
Han, SeungSeong	FrPoS-30.24	119	Hasey, Gary	SaAT16.5	132
	FrPoS-30.46	121	Hashimoto, Haruki	WePoS-29.10	38
Han, Song	WeBT15.3	10	Hashimoto, Noriaki	ThBT19.2	50
Han, Tongmeng	ThCT4.6	52	Hashimoto, Ryohei	FrPoS-28.46	116
Han, Ying	ThBT13.3	48	Hashimoto, Satoshi	SaBT7.4	136
Han, Young-Eun	ThPoS-26.7	81		SaBT7.5	136
Han, Zhongyi	FrAT16.4	87	Hashimoto, Takuma	FrPoS-31.7	121
Hanaway, Peter	FrPoS-05.1	103	Hashimoto, Takuya	ThPoS-23.34	74
Handy, Kelly	FrPoS-25.4	112		FrBT18.6	94
Hanein, Yael	ThBT8.4	47	Hashizume, Makoto	WePoS-29.14	38
Haneishi, Hideaki	FrPoS-28.46	116	Hassan, Amr Mahmoud	FrAT2.5	82
Haniff, Isaac	WePoS-02.6	12	Hassan, Sarah	WeBT5.4	8
Hanks, Cody	SaDT12.6	147	Hassett, Daniel J.	SaDT15.2	148
Hanna, Philip	WeBT20.5	11	Hatabe, Shinnosuke	FrBT6.1	90
Hanneghan, Martin	FrPoS-01.3	102	Hatakeyama, Rikizo	ThPoS-25.45	80
Hannemann, Ronny	WePoS-28.47	37	Hatakeyama, Yasutaka	FrPoS-30.44	120
Hansen, John H.L.	ThBT11.2	48	Hatakeyama, Yoshiyuki	FrPoS-32.8	124
	SaAT15.5	132	Hatanaka, Yuji	ThAT19.3	44
Hantschke, Martin	SaBT14.5	137		ThAT19.4	44
Hanumara, Nevan	SaCT17.2	144	Haufe, Florian Leander	ThPoS-02.8	58
Hanzlicek, Brett	FrBT4.6	90	Hauser, Nathaniel	FrBT17.1	94
Hao, Dongmei	ThPoS-14.3	65	Hawamdeh, Ghadeer	FrPoS-02.6	102
Hao, Huaqing	FrCT8.5	98	Hawkes, David J.	FrBT5.1	90
Hao, L	WePoS-10.4	16	Hayakawa, Masaki	WePoS-26.37	31
Hao, Manzhao	ThPoS-15.11	67	Hayakawa, Motoharu	ThCT6.5	53
Hao, Yiya	WePoS-07.7	15	Hayakawa, Tomonari	ThPoS-23.11	73
Hara, Kazuaki	WePoS-28.25	36	Hayashi, Hideaki	WePoS-05.12	14
	WePoS-28.26	36		SaBT9.1	136
Hara, Shinsuke	FrPoS-19.2	110	Hayashi, Takuto	FrPoS-29.27	118
Hara, Takeshi	ThBT19.3	50	Hayashi, Yoshikatsu	WePoS-25.49	29
	ThBT19.4	50	Hayashibe, Mitsuhiro	ThPoS-09.25	63
Harada, Ipppei	FrPoS-29.11	117	Hayashida, Yuki	ThBT6.5	46
Harada, Kanako	ThPoS-02.7	58	Hayes, Wesley	FrPoS-31.45	123
Harada, Shota	WePoS-05.12	14	He, Changgeng	WePoS-25.21	27
Harangi, Balazs	WeAT3.1	1	He, Changyan	FrCT13.1	100
	FrAT3.1	82	He, Cheng-Kun	ThPoS-22.33	72
	FrCT16.2	100	He, Feng	ThPoS-08.3	61
Harasek, Michael	WePoS-26.9	29		FrAT1.1	82
	ThCT13.4	55	He, Huiguang	ThPoS-08.2	61
Harati, Sahar	SaCT16.5	143	He, Liang	ThPoS-13.5	64
Hardin, Sonya	WeAT1.4	1	He, Qiang	WeBT6.1	8
	SaDT4.2	146	He, Shan	FrPoS-01.5	102
Harding, Simon	SaDT5.5	146	He, Yunan	SaCT9.1	142
Hargrove, Levi	ThAT11.1	42	Healey, Glenn	ThBT17.1	49
	ThPoS-12.8	64	Healy, Eric	ThBT11.1	48
	ThPoS-16.4	67	Hebb, Adam O.	SaAT7.1	129
	SaAT6.3	129	Heelan, Christopher	ThBT1.4	45
Harigovind, Gautam	WePoS-23.9	23	Heidari, Hadi	ThPoS-12.4	64
Harju, Jarkko	SaAT13.1	131	Heidari, Omid	ThCT12.3	55
Harmah, Dennis Joe	WePoS-28.23	36	Heimbecher, Catia	FrPoS-04.4	103
Harmody, Andrew	ThPoS-12.1	64	Helbig, Marko	SaBT17.3	138
Harmon, Dain	FrAT18.2	88	Heldt, Thomas	WePoS-23.8	23
Harmon, Jonah	SaDT14.1	147		ThCT6.1	C
Haroun, Isra	SaBT12.2	136		FrBT20.5	95
Harrer, Stefan	FrAT11.5	85		FrPoS-26.6	113
	SaBT2.1	C		SaBT12.4	136
	SaBT2.5	134	Heller, Simon	ThPoS-15.4	66
Harrington, Michael	FrBT11.6	92	Hemm, Simone	ThPoS-14.15	65
Harrington, Rachael	ThAT4.5	40	Hemmerling, Thomas	WePoS-23.7	23
Harris, Gerald	FrAT14.1	86	Hemmert, Werner	SaDT19.5	149
Harris, Neil G	WePoS-16.1	18		SaDT20.2	149
	SaBT18.4	138	Henderson, Jaimie	WeBT1.6	6
	SaBT18.6	139	Henn, Alexander	ThCT7.6	53
Harris-Love, Michelle	ThAT4.5	40	Henriques, Jorge	FrBT16.4	94
Harrison, Murrion	ThPoS-23.13	73		FrPoS-09.5	105
Harrow, Stephen	WePoS-27.9	32	Henry, Joel	FrPoS-11.4	106
Hartigan, Clare	FrAT13.1	86	Henry, Tseng	SaBT16.5	138
Haruta, Makito	FrPoS-31.47	124	Hensley, Dale	FrPoS-17.7	109
Harvy, Jonathan	WeBT2.2	7	Henzel, M. Kristi	FrPoS-20.5	110
Hasan, Md Qumrul	SaAT4.6	128	Heredia Juesas, Juan	WePoS-16.12	19
Hasan, Taufiq	ThCT9.3	54		WePoS-17.5	20
Hasani, Sona	FrPoS-11.5	106	Hermosillo-Valadez, Jorge	WePoS-26.1	29
Hasanuzzaman, Md.	WeBT17.2	11	Hernández, Alfredo I	SaAT8.5	129
Hasegawa, Kaoru	FrBT12.3	93		SaBT20.4	139

Hernandez, Fabio	SaDT7.1	147	Hlavac, Michael	WeBT4.3	7
Hernandez, Javier	SaBT4.3	135	Ho, Bryan	WePoS-27.34	33
Hernandez, Liss	ThPoS-25.5	78	Ho, Danny	ThPoS-05.3	60
	FrPoS-10.6	106	Ho, Harvey	FrPoS-30.12	119
Hernandez, Manuel	WeBT1.3	6	Ho, Kay Woon	WePoS-26.20	30
	ThPoS-11.4	63		WePoS-26.21	30
Hernandez-Herrera, Paul	WePoS-26.1	29		WePoS-26.42	31
Hernandez-Pacheco, Guadalupe	FrBT2.1	89	Ho, Leon C.	SaCT3.3	140
Herr, Hugh	WePoS-24.43	25	Ho, ThienKim	WePoS-21.1	21
Herrup, Karl	WePoS-04.10	13	Hochberg, Leigh	WeAT6.5	2
	ThCT15.3	56		WeBT1.6	6
Hersek, Sinan	ThBT4.4	46		WePoS-24.31	25
Hershkovich, Hadas Sara	FrAT20.4	88	Hoenicka, Janet	FrPoS-29.7	117
Herzig, Nicolas	ThPoS-13.5	64	Hofmann, Jonathan	FrAT19.3	88
Hesham El Feshawy, Sarah	ThPoS-01.1	58	Hogervorst, Eef	FrPoS-06.6	104
Hess, Henry	ThCT19.1	57	Hoi, Le	WePoS-12.4	17
	FrPoS-31.26	122	Hoilett, Orlando	FrPoS-01.8	102
Hess, Robert	ThPoS-25.42	80	Hojun Son, Hojun	WeBT17.4	11
Hewitt, Robert	FrPoS-17.6	109		ThPoS-24.18	76
Heydari, Payam	ThPoS-19.8	68	Holder, Andre	FrBT16.5	94
	SaAT8.2	129		FrPoS-11.4	106
Heydarzadeh, Mehrdad	FrPoS-08.9	105	Holder, Timothy	FrPoS-19.8	110
Heymsfield, Steven	WeAT10.1	3	Holley, Claire	SaCT15.4	143
	WeAT10.3	3	Holmes, David	ThCT14.1	CC
Hezarjaribi, Niloofar	ThBT17.2	49		ThCT15.1	C
Hicks, Damien	FrBT7.3	91		SaAT15.1	CC
Hiebert, Wayne K.	WePoS-26.18	30	Holmes, Geoffrey	ThPoS-06.2	60
	WePoS-26.19	30	Holobar, Ales	SaDT6.4	146
Hietkamp, Renske K.	ThPoS-23.13	73	Holz, Christian	FrCT17.2	101
Higa, Hiroki	ThPoS-05.1	60		FrPoS-28.7	114
	ThPoS-23.16	73	Hom, Gim	SaCT17.2	144
Higaki, Toru	ThPoS-23.22	74	Homma, Noriyasu	ThBT14.2	48
Higashi, Kazuhiko	SaCT15.6	143	Honda, Koki	FrPoS-29.36	118
Higashi, Yuichiro	FrPoS-30.17	119	Hong, Bei	WePoS-15.3	18
Higashi, Yukihito	WePoS-29.10	38	Hong, Gee Yun	ThPoS-23.1	73
Higgins, Janine	SaCT16.4	143		ThPoS-23.10	73
Higuchi, Masakazu	WePoS-24.28	25		FrPoS-31.13	122
	WePoS-24.49	26	Hong, Hyuckki	FrPoS-32.4	124
	WePoS-25.6	26	Hong, Sung Hwa	WePoS-26.29	30
	WePoS-25.9	26		WePoS-26.31	31
	WePoS-25.37	28	Hong, Sung jun	FrPoS-32.25	125
Higuchi, Susumu	FrPoS-32.26	125	Hong, Wenjia	ThPoS-22.31	72
	FrPoS-32.28	125	Hong, Woojae	WePoS-26.38	31
Higuchi, Yukiharu	FrPoS-28.24	115	Hong, Young-Jun	WePoS-28.40	37
Hijikata, Wataru	FrPoS-25.5	113	Hongo, Sadato	FrAT14.6	87
	SaAT4.1	128	Honka, Anita	SaCT16.2	143
Hill, Kayli	SaCT18.6	144	Hood, Charles	FrAT17.6	87
Hill, Nayo Marel	ThPoS-14.20	66	Hood, Sarah	ThPoS-05.6	60
	ThPoS-15.7	66	Hoog Antink, Christoph	WePoS-21.5	21
Hillel, Inbar	ThBT8.4	47		ThAT8.4	41
Hillen, Brian	WeBT16.4	10		FrCT9.3	98
Hillman, Elizabeth M. C.	FrAT15.2	87		SaDT9.2	147
Hilton, Adrian	FrCT6.6	97	Hooshmand, Mohsen	WeBT3.3	7
Hinestrosa, Juan	SaBT18.5	138		WePoS-11.6	16
Hioki, Tomoko	ThPoS-24.44	78	Hoppenbrouwer, Xenia L.R.	WeBT13.5	10
Hiramatsu, Haruhiko	WePoS-27.47	34	Horak, Fay	FrBT6.4	90
Hirano, Harutoyo	WePoS-29.10	38	Horak, Zdenek	WePoS-24.14	24
	FrPoS-19.3	110		FrPoS-30.9	119
Hirano, Satoshi	FrPoS-31.16	122	Hori, Junichi	ThPoS-09.9	62
Hirano, Yasushi	ThBT19.2	50	Hori, Keisuke	FrPoS-12.6	107
Hiraoka, Katsuyuki	WePoS-24.38	25	Hori, Masataka	FrCT12.5	100
Hiraoka, Nobuaki	FrPoS-30.42	120	Horie, Ryota	ThPoS-25.24	79
Hirata, Hitoshi	FrPoS-29.31	118		FrPoS-31.7	121
Hirata, Keishiro	FrPoS-15.10	108	Horiguchi, Yukichi	FrAT14.6	87
Hirata, Masayuki	ThPoS-22.22	71	Horii, Yasushi	ThPoS-22.31	72
	ThPoS-25.27	79	Horio, Keiichi	FrCT2.4	96
Hirata, Takamichi	ThPoS-25.45	80	Horise, Yuki	WePoS-24.17	24
Hirata, Yutaka	SaBT2.2	134	Horiuchi, Hisanori	WePoS-26.37	31
Hirayama, Itsuki	ThPoS-24.22	76	Hornberger, Erik	SaCT17.2	144
Hirayama, Yoshikazu	FrPoS-31.7	121	Horne, Malcolm	WePoS-07.6	15
Hirofumi, Anno	WePoS-27.17	33		ThBT2.5	45
Hiromoto, Masayuki	FrBT5.6	90		FrCT7.5	98
Hirose, James	ThPoS-23.19	74		SaCT2.4	140
Hirose, Kumi	WePoS-26.41	31			
Hirota, Nakamura	ThPoS-09.24	63			
Hitzenberger, Christoph	WeAT19.1	5			

Horner, Marc	WeAT20.1	C	Hu, Ning	ThPoS-20.6	69
	WeAT20.1	6	Hu, Peng	WeBT8.3	8
	WeAT20.6	6	Hu, Qingmao	WePoS-18.7	20
	ThCT7.3	53	Hu, Song	WeAT13.5	4
Hornero, Roberto	WeBT13.2	9	Hu, Wen-Hsin	WePoS-27.33	33
	WeBT13.4	10	Hu, Xiao	WePoS-28.36	36
	WePoS-03.6	12		WePoS-29.15	38
Horondi, Alex	FrPoS-29.22	117		ThPoS-26.4	81
Horton, Sarah	ThPoS-06.5	60		FrCT16.5	101
Horvath, Samantha	SaCT18.3	144	Hu, Xiaogang	ThCT10.2	54
Hoshi, Yoshinao	WePoS-27.40	34		ThPoS-14.6	65
	FrPoS-32.48	126		SaAT11.3	130
Hoshino, Eiichi	SaAT5.4	128		SaDT6.5	146
Hoshino, K.	WePoS-25.26	27	Hu, Xiyuan	SaDT12.4	147
	ThPoS-22.2	70	Hu, Yang	ThPoS-11.4	63
	FrPoS-24.5	112	Hu, Yong	FrPoS-28.41	116
Hoshino, Takayuki	ThPoS-24.16	76	Hu, Yongmei	SaAT4.5	128
	FrPoS-30.50	121	Hua, Jia	WePoS-18.5	20
Hoshino, Yutaro	WePoS-27.24	33	Hua, Yingqi	WePoS-16.10	19
Hossain, Md Faruk	FrCT12.3	99	Huan, Ruohong	FrPoS-18.3	109
Hosseini Ghomi, Reza	FrPoS-16.7	109	Huang, Bingyao	FrAT3.2	82
Hosseini, Anahita	FrPoS-19.4	110	Huang, Chih-Han	WePoS-29.13	38
Hotta, Kazuhiro	ThPoS-24.3	75	Huang, Chung-Huan	ThCT7.5	53
Hou, Chun-Ju	WePoS-28.22	36	Huang, Chun-Hao	ThAT9.3	41
	WePoS-28.30	36	Huang, Felix	ThBT7.5	47
Hou, Wen	ThCT3.1	51		ThPoS-21.11	70
Hou, Wensheng	WePoS-27.21	33	Huang, Gan	ThPoS-24.36	77
	ThPoS-14.19	66	Huang, He	ThPoS-05.5	60
	ThPoS-20.6	69		ThPoS-12.1	64
	ThPoS-25.31	80		ThPoS-12.7	64
	SaAT6.2	128		ThPoS-14.6	65
	SaDT6.3	146		FrPoS-06.5	104
Hou, Xuefeng	FrBT20.3	95		SaDT6.5	146
	FrBT20.6	95	Huang, Helen J.	ThPoS-25.15	79
Hou, Zeng-Guang	WePoS-25.31	28		ThPoS-26.15	81
	WePoS-27.11	32	Huang, Jeannie	WePoS-05.13	14
	ThPoS-16.2	67	Huang, Ji-Jer	FrPoS-16.5	109
	ThPoS-23.28	74	Huang, Lu	WePoS-14.5	18
Housden, Richard James	ThBT3.2	45		WePoS-25.40	28
Housley, Gary D.	ThPoS-20.9	69		ThPoS-14.5	65
Hovda, David A.	SaBT18.4	138	Huang, Ming	WePoS-25.30	27
Howard, Ayanna	SaCT17.1	143		WePoS-25.36	28
Hoxha, Armand	WePoS-28.41	37	Huang, Min-Wei	WePoS-28.22	36
	FrBT11.4	92		WePoS-28.30	36
Hradetzky, David	SaCT15.1	C		FrPoS-16.5	109
	SaCT15.2	143	Huang, Pin-Gao	WePoS-06.3	14
	SaCT15.3	143		FrCT20.6	102
Hruschak, Jessica	FrPoS-08.4	105		FrPoS-18.6	110
Hsiai, John T. K.	FrPoS-30.40	120		SaAT4.5	128
Hsiao, Ming-Yen	ThPoS-23.39	75	Huang, Sean Po-Hsiang	FrPoS-21.4	111
Hsieh, Kuangwen	SaBT15.5	137	Huang, Shao-Xiong	FrPoS-30.49	121
Hsieh, Ming-Shium	WePoS-23.12	23	Huang, Shiuan	WePoS-25.15	27
Hsieh, Yee-Hsee	WeBT5.4	8	Huang, Shuo Bin	WePoS-28.22	36
Hssayeni, Murtadha Dawood	FrCT16.1	100	Huang, Stephanie	ThPoS-12.7	64
Hsu, Chao-Jung	ThPoS-16.9	67	Huang, Su	WePoS-14.5	18
Hsu, Chia-Hsien	ThPoS-22.33	72	Huang, Tiffany	WePoS-24.13	24
Hsu, David	ThPoS-18.2	68	Huang, Tsung-Tao	WePoS-26.17	30
Hsu, Fu-Sheng	WePoS-28.13	35	Huang, Tzu-Wei	WePoS-16.11	19
	ThPoS-24.42	78	Huang, Wei	WePoS-16.8	19
Hsu, Shan-hui	FrPoS-31.18	122	Huang, Weimin	WePoS-14.5	18
Hsu, Sheng-Hsiou	WeBT2.3	7		WePoS-26.20	30
	ThCT2.4	51		WePoS-26.21	30
Hsu, Shen-Mou	FrPoS-28.27	115	Huang, Yao-Huien	ThAT9.4	41
Hsu, Yi-Hsin	SaBT16.6	138	Huang, Yi	WeBT6.6	8
Hu, Dongming	SaBT10.3	136	Huang, Yu	ThPoS-16.11	67
Hu, Eric	SaDT19.4	149		FrBT8.1	91
Hu, Hanhan	ThPoS-14.4	65		FrCT8.6	98
Hu, Jing	ThPoS-24.39	77	Huang, Yufei	ThPoS-18.6	68
	FrPoS-31.15	122	Huang, Yukun	WePoS-27.7	32
	FrPoS-32.1	124	Huang, Yung-Fa	WePoS-24.26	25
Hu, Ling-Chen	WePoS-28.30	36	Huang, Zhen	ThPoS-20.7	69
Hu, Lixia	FrPoS-28.18	114	Huang, Zhiwen	ThPoS-26.5	81
	FrPoS-28.21	115	Huber-Dangl, Florentine	WePoS-26.9	29
Hu, Mengjiao	ThAT3.6	40		ThCT13.4	55
Hu, Michele	WeBT13.3	9	Huegle, Maria	ThPoS-15.4	66
	ThCT11.5	54	Huffman, Dillon	ThCT8.5	53

Huggins, Jane E.	ThPoS-09.11	62	Iihara, Koji	FrPoS-09.8	105
Hughes, Christopher	ThAT5.2	40	Iikuni, Takahiro	FrPoS-31.14	122
Hugon, Florence	WePoS-25.8	26		FrPoS-31.20	122
Hugues, Duffau	ThPoS-14.12	65	Ikai, Marie	WePoS-27.2	32
Huilca, Kevin	SaAT14.4	131	Ikarashi, Akira	WePoS-25.1	26
Huixiong, Xu	FrBT10.2	92		FrPoS-29.27	118
Humayun, Ahmed Imtiaz	ThCT9.3	54	Ikawa, Hibiki	ThAT19.3	44
Humayun, Mark	FrCT1.6	96	Ikeda, Kazushi	WePoS-28.19	35
	FrPoS-15.8	108		ThPoS-25.37	80
Hummady, Sana	ThBT3.2	45	Ikeda, Narihito	FrPoS-31.47	124
Hung, Chen-Ying	SaBT16.3	138	Ikegami, Shunsuke	FrPoS-31.20	122
Hung, Sheng-Che	WePoS-06.2	14	Ikegami, Tetsushi	FrPoS-29.6	116
Hunter, Andrew	WePoS-19.2	20	Ikegawa, Masaya	WePoS-26.47	31
	SaDT5.1	146	Ikematsu, Hiroaki	FrPoS-12.6	107
Hunter, Peter	FrPoS-30.12	119	Iliopoulou, Dimitra	FrPoS-09.3	105
Hurley, Nate	SaAT16.4	132	Illanes, Alfredo	WePoS-25.47	28
Hurnanen, Tero	ThAT15.1	43		ThPoS-22.12	71
Hurter, Christophe	SaAT2.5	127		ThPoS-24.21	76
	SaCT17.5	144	Im, Chang-Hwan	WePoS-25.23	27
Husain, Syed	FrAT13.2	86		WePoS-25.27	27
	FrAT13.5	86		WePoS-25.41	28
Husar, Peter	SaDT2.3	145		WePoS-26.36	31
Hussain, Fatima	ThCT13.6	55		ThPoS-16.3	67
Hussain, Md Akter	WePoS-21.11	22		ThPoS-25.14	79
Hussain, Shaun A.	WePoS-12.3	17		FrPoS-30.29	120
Hussein Ali, Amira	WeBT20.4	11	Im, Cheolki	FrBT8.6	91
Hutcheon, Jennifer A.	FrCT5.6	97	Im, Hyunsik	WePoS-26.44	31
Hutchins, Andrew	SaBT18.3	138	Im, Maesoon	ThBT6.2	46
Hutchins, Susie	FrPoS-21.4	111		ThPoS-20.2	69
Hutchinson, Douglas	FrCT20.5	102	Imai, Hirohiko	ThPoS-23.8	73
Hutchison, James B.	SaCT4.2	140	Imaizumi, Kazuyoshi	WePoS-25.35	28
Hutchison, Kent	ThAT2.3	39		ThBT19.6	50
Hutchison, William	WeBT7.4	8	Imanishi, Ayako	ThPoS-24.3	75
Hwang, Changho	ThPoS-23.45	75	Imashiro, Chikahiro	ThPoS-22.45	72
	ThPoS-26.10	81		ThPoS-22.49	72
	FrPoS-15.3	108	Imazu, Takafumi	WePoS-27.47	34
	FrPoS-28.28	115	Imbert, Jean-Paul	SaAT2.5	127
Hwang, Donghyun	ThPoS-04.6	59	Immonen, Milla Sinikka	ThCT14.4	55
Hwang, Gunpil	FrPoS-13.2	107		ThPoS-11.8	63
Hwang, Jong Ho	FrPoS-32.14	125	Imtiaz, Syed Anas	ThAT16.3	43
	FrPoS-32.25	125		FrPoS-20.2	110
Hwang, Layoung	WePoS-26.15	29	In, Insik	WePoS-26.48	32
Hwang, Ming-Jing	WePoS-29.13	38		FrPoS-32.40	126
Hwang, Seoyoung	FrPoS-28.50	116	Inagaki, Keiichiro	SaBT2.2	134
	FrPoS-29.2	116	Inagaki, Ken	FrPoS-32.6	124
Hwang, Ui-Jung	WePoS-26.44	31	Inaji, Motoki	FrPoS-28.42	116
Hwang, Won Hee	FrPoS-32.4	124	Inaka, Chisa	WePoS-28.39	37
Hyde, Damon	FrAT20.5	89	Inamura, Tetsunari	ThPoS-24.6	75
	SaAT5.2	128	Inan, Omer	WeAT14.1	C
				WeAT14.5	4
				WePoS-26.11	29
				ThAT15.1	CC
				ThAT15.5	43
				ThBT4.4	46
				ThCT17.5	56
				ThCT18.4	57
				FrPoS-31.30	123
Iacono, Maria Ida	WeAT20.6	6	Ince, Nuri Firat	WeAT5.1	2
Iacoponi, Sara	ThCT18.2	57		WeAT5.2	2
Iacovacci, Veronica	WeAT18.3	5		FrBT7.2	91
	WeAT18.4	5	Indolfi, Ciro	FrBT12.5	93
Ianez, Eduardo	WePoS-02.1	12	Indovina, Iole	WePoS-13.11	17
	ThPoS-14.2	65	Inglezakis, Vassilis	FrCT17.1	101
Ibañez-Hernández, Miguel Ángel Antonio	ThPoS-22.10	71	Inkinen, Satu Irene	WePoS-26.46	31
Ibarra-Zannatha, Juan-Manuel	WePoS-28.32	36		ThPoS-24.10	76
Ibbotson, Michael R	FrBT7.3	91	Innes, Carrie R. H.	WeBT4.3	7
	SaAT7.2	129		WePoS-25.2	26
Ibironke, Oluwaseun	ThPoS-24.1	75	Inoue, Akio	FrBT6.1	90
	SaCT6.3	141	Inoue, Daisuke	FrPoS-31.14	122
Ibrahim, Bassem	FrPoS-18.8	110	Inoue, Madoka	SaAT19.3	133
Ichihashi, Hayato	WePoS-26.47	31	Inoue, Takafumi	FrPoS-28.48	116
Ichikawa, Chihiro	ThCT6.3	52	Inoue, Takahiro	WePoS-25.35	28
Ichikawa, Hiroko	ThPoS-23.38	75		ThBT19.6	50
Ichikawa, Hiroshi	FrPoS-32.15	125	Inoue, Takenobu	WePoS-29.9	38
Ichishima, Yasuhito	ThPoS-22.42	72		FrPoS-28.24	115
	FrBT14.2	93			
Ifeachor, Emmanuel	FrPoS-08.6	105			
Igasaki, Tomohiko	ThPoS-08.4	61			
Ihara, Aya	WePoS-28.50	37			
Ihn, Yong Seok	ThPoS-04.6	59			



Jang, Junwon	FrBT13.1	93	Jeong, Sung Hee	ThPoS-24.34	77
Jang, Kuk Jin	FrPoS-03.4	103	Jeong, Woojun	FrPoS-32.40	126
Jang, Min	FrPoS-30.2	118	Jeong, Yongrok	ThPoS-24.37	77
Jang, Minsu	FrCT17.3	101	Jeong, You Jeong	WePoS-28.3	34
Jang, Wonseuk	FrPoS-29.34	118	Jeremic, Aleksandar	SaDT14.4	148
Jangsher, Sobia	WePoS-06.5	14	Ji Young, Lim	WePoS-27.50	34
Jani, Mahrshi	FrPoS-29.21	117	Ji, Dongjin	WePoS-25.13	27
Janiga, Gabor	ThCT6.1	52	Ji, Jim Xiuquan	WeBT6.1	CC
Jansen, Katrien	WeAT1.1	1		WeBT6.6	8
Janssens, Olivier	WePoS-16.6	19		WePoS-15.8	18
Janusek, Dariusz	WePoS-24.7	24		ThAT3.1	C
Jao, Ping-Keng	ThPoS-09.6	62		ThAT3.2	39
Jaques, Natasha	WeAT12.4	4		FrAT5.4	83
	ThBT17.5	49	Ji, Yunhua	WePoS-26.32	31
Jaros, Jiri	SaCT14.1	143	Jia, Dongya	ThPoS-24.39	77
Jarrahi, Behnaz	WePoS-13.9	17		FrPoS-31.15	122
	ThAT3.1	CC		FrPoS-32.1	124
	ThAT3.4	39	Jia, Huibin	WePoS-13.1	17
	ThAT3.5	40	Jia, Jie	ThPoS-15.5	66
	ThPoS-22.24	71	Jia, Xiao	FrCT10.5	99
Jarrett, Chris	ThPoS-02.2	58	Jiang, Bin	WePoS-27.21	33
Jatesiktat, Prayook	WePoS-02.7	12		ThPoS-20.6	69
	FrBT17.6	94	Jiang, Changqing	WePoS-25.21	27
Jauer, Philipp	WePoS-22.3	22	Jiang, Ching-Fen	FrPoS-31.18	122
Jauhainen, Milla Karoliina	FrAT19.2	88	Jiang, Frank	WePoS-10.4	16
Javaid, Abdul Qadir	FrBT19.4	95	Jiang, Hongqing	SaBT14.4	137
Javan Khoshkholgh, Amir	FrAT14.5	86	Jiang, Huiqin	ThAT19.6	44
	FrPoS-14.2	108	Jiang, Jiehui	WeBT3.2	7
Javed, Faizan	ThAT18.1	43		WePoS-18.2	20
Javed, Farrukh	SaBT19.1	139		ThPoS-08.1	61
Javorka, Michal	ThAT12.4	42		ThPoS-10.1	63
	SaCT7.1	141	Jiang, Ping	ThPoS-03.2	59
Jayaraman, Arun	ThBT7.1	46	Jiang, Rongtao	WePoS-13.4	17
Jayasinghe, Saroj	FrAT10.5	85	Jiang, Tao	FrBT7.2	91
Jeanne, Mathieu	WePoS-11.1	16	Jiang, Tianxiao	FrBT7.2	91
Jeenifer, Shah	FrCT16.3	101	Jiang, Tianzi	WePoS-13.4	17
Jelbuldina, Madina	FrCT17.1	101		ThAT3.1	39
Jeifs, Beth	ThPoS-16.7	67	Jiang, Xinyu	FrAT16.5	87
Jelinek, Herbert Franz	SaBT13.2	137		SaBT2.1	134
Jenkins, Michael W.	WeBT5.4	8	Jiang, Xiyuan	WePoS-22.1	22
Jennum, Poul	WeBT13.1	9		ThAT1.2	39
	WePoS-09.3	15	Jiang, Yanbing	FrPoS-18.6	110
	WePoS-29.18	38	Jiang, Youcong	FrPoS-31.32	123
	FrCT16.4	101	Jiang, Yuming	WePoS-21.9	22
	FrPoS-28.33	115	Jiang, Yuqi	FrPoS-12.7	107
	SaAT16.1	132	Jiang, Zhihao	FrPoS-03.4	103
	SaDT9.3	147	Jiang, Ziwen	SaCT17.2	144
Jensen, Dennis	SaBT19.2	139	Jiao, Bingli	SaAT3.3	127
Jensen, Erik Weber	ThAT12.2	42	Jimbo, Yasuhiko	ThPoS-23.44	75
Jensen, Winnie	FrCT8.3	98		FrPoS-28.29	115
Jeon, Hwawoo	FrBT19.2	95	Jimison, Holly	WeAT12.3	4
Jeon, Sangkuk	FrBT20.1	95		WePoS-28.33	36
Jeon, Sejun	FrPoS-13.2	107	Jin, Dan	ThAT3.1	39
Jeon, Seungwan	ThPoS-22.48	72	Jin, Hongyan	FrAT18.5	88
	FrPoS-30.37	120		FrPoS-18.1	109
Jeon, Yoomin	WeBT19.3	11	Jin, Qinhua	WePoS-14.4	18
Jeon, Youngju	WeAT15.2	5	Jin, Shanhai	ThPoS-07.1	60
Jeong, Chang Won	ThPoS-23.25	74	Jing, Jin	ThPoS-17.5	68
Jeong, Chang Wook	FrPoS-26.1	113		FrBT11.2	92
Jeong, Chiyoung	WePoS-26.44	31		FrCT2.3	96
Jeong, Do Hyeon	WePoS-26.48	32	Jing, Jing	WePoS-14.4	18
Jeong, Eunju	WePoS-28.9	35	Jo, Javier Antonio	FrBT5.1	C
Jeong, Geumbi	WePoS-26.48	32		FrBT5.3	90
Jeong, Hee Soo	ThPoS-24.50	78	Jo, Jihoon	WePoS-25.3	26
	FrPoS-28.50	116	Jo, Kyungmin	WePoS-19.3	20
Jeong, Hieyong	FrPoS-30.21	119	Jo, Woori	WePoS-21.8	22
Jeong, Hwayeong	ThPoS-07.6	61	Jo, Young Chang	FrPoS-32.4	124
Jeong, Hyeon Ki	ThCT17.5	56	Jochumsen, Mads	SaBT9.2	136
Jeong, Hyun-Ghang	WeAT16.2	5	Jog, Mandar	FrAT11.3	85
Jeong, Jeho	FrPoS-30.38	120	John, Mathews	FrCT4.2	96
Jeong, Jinwoo	ThPoS-04.6	59	John, Sam	ThBT1.5	45
Jeong, Jin-Woo	WePoS-24.50	26		FrBT8.5	91
Jeong, Joonsoo	ThPoS-25.3	78	Johnson, Alwyn Patrice	ThPoS-03.1	59
	FrPoS-29.19	117	Johnson, Dale	ThPoS-03.9	59
Jeong, Jugyeong	FrAT14.4	86	Johnson, Dean G.	SaCT18.6	144
Jeong, Soohwan	WePoS-26.38	31	Johnson, Eric	FrPoS-30.1	118

Johnson, Kristina	ThBT17.5	49	Jung, Hyun Gi	ThPoS-04.6	59
Johnson, Michelle	FrCT11.5	99	Jung, Hyun Ho	ThPoS-24.34	77
Johnson, Richard	WeBT16.1	10	Jung, Hyungil	WeBT19.1	11
Johnson-Roberson, Matthew	WeBT17.4	11	Jung, Jiuk	ThPoS-25.1	78
	ThPoS-24.18	76	Jung, Myoung Hoon	WePoS-24.48	26
Johnston, Benjamin	FrPoS-08.3	104	Jung, Ranu	WeBT16.4	10
Johnston, Callum Michael	SaAT12.3	131	Jung, Suk Won	FrPoS-32.4	124
Johnston, Matthew	SaBT17.4	138	Jung, Sunghoon	WePoS-25.4	26
Jöhr, Jane	SaAT5.3	128	Jung, Sunhyung	FrPoS-29.24	117
Joko, Shiho	WePoS-27.3	32	Jung, Tzyy-Ping	WeBT1.5	6
Jonckheere, Edmond	FrPoS-30.18	119		WeBT2.3	7
Jones, Edward	SaCT10.1	142		WePoS-04.4	13
Jones, Geoffrey	FrBT5.1	90		ThCT2.4	51
Jones, Michael	WePoS-15.6	18		ThPoS-09.10	62
Jones, Richard D.	WeBT4.3	7	Jung, Younginha	ThPoS-07.2	61
	WePoS-25.2	26	Juntunen, Mikael Asko Kaarlo	WePoS-26.46	31
	FrBT6.1	C		ThPoS-24.10	76
	FrBT6.3	90	Junxiang, Wang	SaCT4.3	140
Jones, Timothy	FrPoS-03.2	103	Juste, Belen	FrPoS-13.1	107
Jönsson, Peter	WePoS-11.2	16		SaDT20.3	149
Joo, Jinmyoung	ThPoS-22.44	72	Juteau, Nicolas	ThPoS-25.2	78
Joon Woo, Park	ThPoS-21.1	69	Jutten, Christian	ThCT2.1	51
	FrAT14.4	86			
Joosten, Simon	ThAT18.2	44	<b>K</b>		
Jordan Rodriguez, Blanca	ThAT7.4	41	K T, Raseena	SaBT7.1	135
Jordan, Christian	ThCT13.4	55	K, Prakash	WePoS-23.9	23
Jordan, Jake	FrPoS-04.2	103	Kabashima, Shogo	FrPoS-29.11	117
Jordanov, Ivan	SaDT2.2	145	Kabdebon, Claire	WePoS-04.5	13
Joseph, Jayaraj	WeAT14.4	4	Kabinejadian, Foad	SaDT14.1	147
	ThCT18.5	57	Kacprzak, Michal	WePoS-24.7	24
	FrPoS-27.4	113	Kadioglu, Ahmet	ThPoS-24.15	76
	FrPoS-27.7	114	Kado, Shiika	SaCT12.1	142
	FrPoS-27.8	114	Kaduvela, Asitha	ThPoS-26.2	81
	FrPoS-32.37	126	Kaeser, Mélanie	ThCT10.1	54
Joseph, Wout	ThPoS-14.1	65	Ka-Fung Henry, Mak	ThCT7.1	53
Joshi, Renu	SaCT4.2	140	Kahani, Danial	WePoS-02.9	12
Joshi, Sanjay	SaBT6.4	135	Kainz, Bernhard	WePoS-17.2	19
	SaCT18.4	144		ThBT9.6	47
Joshi, Vinayak	SaDT5.5	146	Kainz, Wolfgang	WeAT20.6	6
Josse, Pabitra	FrAT19.3	88		ThCT7.3	53
Joung, YeunHo	ThPoS-24.48	78	Kais, Gadhoudi	WePoS-28.36	36
Jovanov, Emil	WeAT12.1	CC		ThPoS-26.4	81
	SaBT4.1	C	Kaji, Hirotaka	FrPoS-32.8	124
	SaBT4.5	135	Kajikawa, Masato	WePoS-29.10	38
	SaDT4.1	C	Kajimura, Ichige	ThPoS-24.7	76
	SaDT4.6	146	Kalantar, Golnar	SaAT2.1	127
Jovicic, Ivana	WePoS-24.36	25	Kale, Poojitha	ThCT1.4	51
Jowett, Nathan	ThPoS-25.49	81	Kalmar, Marco	FrPoS-28.32	115
	SaBT7.2	135	Kalra, Sumeet	WePoS-27.29	33
Ju, Feng	ThPoS-13.2	64	Kalva, Sandeep Kumar	WeAT13.2	4
Ju, Xiangyang	WePoS-27.9	32	Kamada, Kazuhiro	WePoS-25.10	26
Judy, Jack	SaBT1.4	134		WePoS-25.11	26
Jun, Hong Young	ThPoS-23.25	74	Kamada, Kyousuke	WeAT5.1	CC
Jun, Kooksung	WePoS-28.37	36		WeAT5.1	2
Jun, Min-Ho	WeAT15.2	5		WeAT5.3	2
Jun, Sang Beom	WePoS-28.15	35	Kamata, Minoru	ThPoS-11.9	63
	ThPoS-23.43	75	Kamata, Takatsugu	ThPoS-25.27	79
	ThPoS-23.47	75	Kamavuako, Ernest Nlandu	SaBT9.2	136
	ThPoS-23.50	75	Kamba, Kazuho	ThPoS-23.8	73
	ThPoS-24.34	77	Kamble, Ravi	WePoS-16.5	19
	ThPoS-24.50	78		FrAT10.1	85
	FrPoS-28.50	116	Kameda, Seiji	ThPoS-25.27	79
	FrPoS-29.2	116	Kamei, Shion	WePoS-28.25	36
Jun, Seung Won	FrPoS-28.13	114		WePoS-28.26	36
Jun, Sung Chan	WePoS-09.6	15	Kameneva, Tatiana	FrBT7.1	C
	FrBT8.6	91		FrBT7.3	91
Junata, Melisa	ThPoS-16.12	67		SaAT7.2	129
Juneau, Jill	WePoS-20.6	21		SaAT7.3	129
Jung, Duk Young	WePoS-26.27	30	Kamibayashi, Kiyotaka	FrPoS-28.35	115
	ThPoS-23.32	74	Kamikura, Takahisa	ThPoS-23.12	73
	FrPoS-32.11	124	Kamimoto, Michiaki	FrPoS-28.30	115
Jung, Euiwook	FrCT11.4	99	Kaminishi, Kohei	ThPoS-03.2	59
Jung, Hee-Tae	ThCT14.1	55	Kamins, Ted	WePoS-24.13	24
	ThPoS-21.1	69		ThBT6.1	46
	FrAT14.4	86			
Jung, Hoeryong	WePoS-27.8	32			



Kamiya, Haruka	FrPoS-02.4	102	Kao, Wei-Chen	ThAT9.5	41
Kamiya, Koki	FrPoS-24.9	112	Kappel, Simon Lind	ThAT16.1	43
Kamiya, Naoki	WePoS-24.18	24		ThBT8.1	47
	ThBT19.4	50		ThCT8.1	53
	ThPoS-22.7	70		SaCT1.1	139
Kamiya, Satoru	WePoS-27.17	33	Kar, Aupendu	SaBT2.3	134
Kamiya, Yukihiko	FrCT9.2	98		SaBT2.4	134
Kamper, Derek	WePoS-28.21	35	Karabegovic, Alen	WePoS-26.9	29
	ThBT7.2	46		ThCT13.4	55
	ThPoS-01.8	58	Karadagur Ananda Reddy, Chandan	WePoS-07.4	15
	FrPoS-06.5	104		SaCT2.3	140
Kan, Chung-Dann	FrPoS-27.1	113	Karami, M. Amin	FrPoS-17.3	109
	SaBT15.3	137	Karampela, Maria	FrPoS-11.1	106
Kanamori, Nanami	WePoS-27.12	32	Karanasiou, Georgia	FrPoS-04.2	103
Kanaya, Shigehiko	WePoS-24.44	25		FrPoS-26.2	113
	WePoS-25.30	27		FrPoS-27.3	113
	WePoS-25.36	28		FrPoS-27.6	113
	FrCT12.1	99	Karasan, Ekin	SaBT12.4	136
Kanayama, Yoshio	WePoS-24.34	25	Karayiannidis, Yiannis	FrPoS-32.33	126
	FrPoS-30.30	120	Karbing, Dan Stieper	FrPoS-31.10	121
	FrPoS-31.1	121	Karel, Joël	SaBT13.6	137
	FrPoS-31.14	122	Karen, Tanja	ThCT13.3	55
	FrPoS-31.20	122	Karhula, Sakari	ThPoS-24.20	76
Kanazawa, Hoshinori	ThCT10.5	54	Karim, Nazmul	FrPoS-01.6	102
Kanbar, Lara	SaAT16.6	132	Karim, Rashed	ThBT3.2	45
Kanda, Keiichi	SaBT12.2	136	Karimi, Nader	WeAT3.5	2
Kandilakis, Casey	FrAT13.1	86		WeAT3.6	2
Kaneishi, Daisuke	ThPoS-01.6	58		WePoS-19.9	21
Kaneko, Miki	WePoS-26.50	32		ThCT3.6	51
Kaneko, Shigehiko	FrPoS-19.3	110		SaBT5.3	135
Kaneko, Takumi	FrAT6.6	84	Karimian, Negin	FrBT10.3	92
Kanemura, Atsunori	ThPoS-24.16	76	Karimi-Bidhendi, Alireza	SaAT8.2	129
	FrAT6.6	84	Karin, Diserens	SaAT5.3	128
	FrAT7.1	84	Karki, Dikendra	FrPoS-31.46	123
	SaAT11.4	130	Karlen, Walter	SaCT10.4	142
Kang, Byungjeon	ThCT13.1	55	Karmakar, Chandan	WePoS-10.6	16
Kang, Chaoyi	FrBT4.3	90		FrCT2.5	96
Kang, Dongwoo	WeBT12.1	C		SaDT16.4	148
Kang, Hong-Goo	FrPoS-31.11	122	Karmonik, Christof	ThPoS-24.19	76
Kang, Hongki	ThPoS-26.11	81	Karnam, Yogesh	WePoS-25.19	27
	FrPoS-31.12	122	Karr, Jonathan	FrPoS-28.5	114
Kang, Ho-Seong	ThPoS-23.4	73	Karri, Sri Phani Krishna	SaBT2.4	134
Kang, Hyunggoo	ThPoS-25.48	81	Karunakaran, Kiran	FrAT13.6	86
Kang, Kyumin	FrCT17.3	101	Karunanithi, Mohanraj	ThCT16.5	56
	FrPoS-32.23	125	Karwa, Talha	WePoS-28.8	35
Kang, Qi	FrAT14.5	86	Kasahara, Yoshiyuki	SaBT12.2	136
Kang, Se Ryong	WePoS-26.40	31	Kasai, Ritaro	ThCT15.4	56
Kang, Seongtak	ThPoS-26.7	81	Kasashima, Yoshinori	FrPoS-32.36	126
Kang, Seonmi	ThPoS-07.2	61	Kase, Ryutaro	ThPoS-11.13	64
Kang, Soojin	WePoS-26.29	30	Kaseda, Yuto	WePoS-26.41	31
	WePoS-26.31	31	Kashihara, Koji	WePoS-05.11	14
Kang, Sungchul	ThPoS-04.4	59		ThPoS-22.39	72
	FrPoS-13.3	107	Kashkoush, Jasmine	SaCT3.1	140
Kang, Xiao-Yang	ThCT10.3	54	Kashyap, Bipasha	WePoS-07.6	15
Kang, Yewon	FrPoS-29.24	117	Kassab, Ghassan	WePoS-26.20	30
Kang, YooNa	ThPoS-22.38	72		WePoS-26.21	30
	ThPoS-22.50	73	Kassim, Yasmin M.	FrAT10.6	85
Kang, Youn Joo	ThPoS-24.43	78	Kassinopoulos, Michalis	ThAT2.6	39
Kannan, Vaishnavi	WePoS-28.31	36	Kastner, Peter	ThCT14.3	55
Kanno, Yoshihiko	SaCT18.5	144	Kataoka, Takuya	WePoS-24.35	25
Kanno, Zusei	ThPoS-04.8	60	Katayama, Jun'ichi	WePoS-28.50	37
Kano, Manabu	WePoS-24.39	25	Kato, Akira	ThPoS-07.7	61
	WePoS-27.7	32	Kato, Daiki	FrPoS-32.31	125
	FrPoS-28.42	116	Kato, Kazuo	ThPoS-22.42	72
	SaAT19.6	133		ThPoS-22.43	72
Kanoga, Suguru	ThPoS-24.16	76		FrBT14.2	93
	FrAT7.1	84	Kato, Kenji	ThPoS-25.22	79
	SaAT11.4	130	Kato, Soichiro	ThPoS-23.48	75
Kanoh, Shin'ichiro	WePoS-25.33	28	Kato, Yuki	SaCT17.4	144
	WePoS-25.34	28	Kato, Yuta	ThPoS-25.28	80
Kant Kumar, Dinesh	ThPoS-16.7	67		FrPoS-29.9	117
	SaCT9.6	142	Katrakazas, Panagiotis	FrPoS-09.3	105
	SaDT5.2	146	Katsuhara, Yasuo	FrPoS-32.8	124
Kanwar, Bharat	ThPoS-24.28	77	Katsumata, Koki	FrPoS-30.50	121
Kanzaki, Masato	WePoS-24.17	24	Katsuno, Yuki	FrPoS-31.19	122
Kao, Jonathan	ThAT1.2	39	Katyal, Kapil	WeBT17.1	11

Katzberg, Fabrice	SaAT6.5	129	Khaghani-Far, Iman	WeAT12.3	4
Kaur, Rachneet	WeBT1.3	6		WePoS-28.33	36
Kawaguchi, Daisuke	FrPoS-30.36	120	Khalaf, Aya	FrAT2.5	82
Kawaguchi, Hiroshi	SaCT4.6	141	Khaleghi, Ali	FrCT18.2	101
Kawaguchi, Minato	WePoS-26.39	31	Khalid, Asra	WePoS-08.4	15
Kawahara, Dai	FrPoS-10.8	106	Khalil, Cliff	FrPoS-30.27	120
Kawahira, Hiroshi	ThPoS-25.44	80	Khalil, Islam S. M.	ThPoS-01.1	58
Kawai, Masaki	WePoS-26.35	31		ThPoS-03.3	59
Kawai, Toshikazu	ThPoS-22.11	71	Khalilian-Gourtani, Amirhossein	SaBT3.5	134
	FrPoS-30.24	119	Khalvati, Farzad	WePoS-24.21	24
	FrPoS-30.46	121	Khamis, Heba	SaDT7.5	147
Kawakami, Takumi	ThCT6.3	52	Khan, Aamir Ahmed	WeAT17.3	5
Kawakami, Yasuo	ThCT15.4	56	Khan, Faisal	WePoS-21.3	21
Kawamoto, Hiroaki	SaDT6.1	146		FrPoS-07.4	104
Kawamoto, Masashi	FrPoS-19.3	110	Khan, Masood Mehmood	WePoS-03.1	12
Kawamoto, Shunsuke	FrBT12.3	93	Khan, Nadeem Ahmad	WePoS-02.4	12
Kawanaka, Haruki	FrAT16.6	87		WePoS-02.5	12
Kawase, Mami	WePoS-26.47	31	Khan, Saad Jawaid	ThPoS-04.5	59
Kawashima, Issaku	WePoS-27.2	32	Khan, Sharif	FrBT1.3	89
Kazan, Roy	WePoS-23.7	23	Khan, Sofia	FrCT6.6	97
Kazanzides, Peter	ThPoS-13.7	65	Khan, Soobia Saad	ThPoS-04.5	59
	FrPoS-10.5	106	Khandoker, Ahsan H	WePoS-03.3	12
Kazumi, Tomoya	FrPoS-31.50	124		ThBT12.1	C
Kazunobu, Hashimoto	ThPoS-07.1	60		ThBT12.1	48
Kazzi, Christina	WeAT14.1	4		ThBT12.2	48
	FrAT12.2	85		SaBT12.2	136
	FrCT12.4	99		SaBT13.2	137
Ke, Qing	WePoS-13.4	17	Kharazi, Mohamad Reza	ThPoS-21.6	69
Ke, Yufeng	WePoS-02.3	12	Khatun, Saleha	WePoS-29.4	37
	ThPoS-08.3	61	Kheirandish-Gozal, Leila	WeBT13.2	9
	FrCT6.1	97		WeBT13.4	10
Keall, Paul John	FrPoS-13.4	107	Kheirkhah Dehkordi, Parastoo	WeAT4.4	2
Kearney, Robert Edward	WeBT10.1	9		WeBT13.5	10
	ThPoS-24.31	77		ThAT15.4	43
	SaAT16.6	132	Kheradvar, Arash	WeBT8.1	C
	SaBT7.1	C		ThCT7.6	53
	SaBT7.2	135	Khobragade, Nivedita	ThPoS-14.7	65
Keating, Robert	ThBT9.3	47	Khojasteh, Parham	SaDT5.2	146
Keck, Thomas	ThPoS-13.3	64	Khoo, Michael	WeAT4.1	C
Keegan, Jennifer	ThBT3.5	45		WeBT4.1	C
Keenan, Kevin	WePoS-28.36	36		WePoS-26.32	31
Keene, David	FrBT19.1	94		WePoS-27.33	33
Keeranagi, Veena	FrPoS-29.22	117		ThAT18.1	C
Kehtarnavaz, Nasser	ThBT11.3	48		ThAT18.3	44
	FrAT16.1	87		ThAT18.4	44
Kek, Khai Jun	ThCT18.1	57	Khor, See Yee	WePoS-15.4	18
Keller, James M	WePoS-09.4	15	Khorrami, Milad	SaDT15.3	148
Kelly, Paul	WeBT4.3	7	Khorshidi, Reza	SaDT16.1	148
Kelly, Shawn	ThCT4.3	52	Khoshdeli, Mina	WePoS-15.1	18
	FrPoS-28.14	114	Khosravan, Naji	WePoS-17.1	19
Kemere, Caleb	WePoS-20.6	21		WePoS-27.41	34
Kendrick, Michael	ThCT7.6	53	Khosrow-khavar, Farzad	ThAT15.4	43
Keneskhanova, Zhibek	FrPoS-15.4	108	Khurana, Harneet Singh	FrAT7.3	84
Keng, Yung Jih Felix	WePoS-26.20	30	Khushaba, Rami N.	ThPoS-12.2	64
	WePoS-26.21	30		ThPoS-20.3	69
	WePoS-26.42	31	Kiaee, Gita	SaCT15.5	143
KenKnight, Bruce	FrCT14.1	C	Kiani, Mohammad	WePoS-20.3	21
	FrCT14.2	100	Kidmose, Preben	ThAT16.1	43
Kenny, Bret	FrPoS-32.50	126		ThBT8.1	CC
Kepentzis, Stavros	FrPoS-09.3	105		ThBT8.1	47
Kepner, Jeremy	WePoS-15.6	18		ThCT8.1	53
Kergoat, Loig	SaAT8.5	129		SaCT1.1	139
Kerklaan, Martijn	WeBT10.3	9	Kido, Koshiro	WePoS-25.30	27
Kerr, Deb	WeAT12.2	4		WePoS-25.36	28
Kesavadas, Thenkurussi	WePoS-26.12	29	Kido, Shoji	ThBT19.2	50
	WePoS-27.32	33	Kidzinski, Lukasz	WeBT15.4	10
	WePoS-29.17	38	Kiehart, John	ThPoS-25.42	80
	ThPoS-06.8	60	Kiele, Patrick	ThPoS-24.27	77
Keshavan, Matcheri	WeAT8.6	3	Kiely, Janice	FrPoS-31.36	123
Kesten, Adam	FrAT13.6	86	Kiese, Constanze	FrPoS-04.6	103
Ketola, Juuso Heikki Jalmari	WePoS-26.46	31	Kigka, Vassiliki	WePoS-22.7	22
	ThPoS-24.10	76		FrPoS-27.3	113
	ThPoS-24.20	76		SaDT16.5	148
Ketterl, Hermann	FrPoS-04.6	103	Kiguchi, Kazuo	FrPoS-29.36	118
Kettle, Paul	ThBT17.6	49	Kihal, Nassima	ThPoS-23.17	73
			Kikuchi, Takehito	FrBT6.1	90

Kim, Irfan	FrPoS-12.8	107	Kim, Hyunggun	WePoS-26.38	31
Kilfoyle, Chester	FrPoS-29.19	117	Kim, HyungJin	FrPoS-32.17	125
Kim, Ah-Young	ThPoS-22.35	72	Kim, Hyungmin	ThPoS-16.3	67
Kim, Bong Kyu	WePoS-28.9	35		FrCT14.6	100
	ThPoS-24.13	76		SaAT8.1	129
	FrPoS-30.31	120	Kim, Hyungtaek	WeBT15.2	10
Kim, Boyoon	ThPoS-07.2	61	Kim, In Young	FrPoS-32.14	125
Kim, Brian N.	SaBT1.5	134		FrPoS-32.25	125
Kim, Byeongil	ThCT14.1	55	Kim, Insoo	ThPoS-09.21	63
Kim, Chaebin	ThPoS-24.34	77		FrCT12.3	99
Kim, Chaewon	ThPoS-24.11	76	Kim, Jae Kun	ThPoS-23.18	73
Kim, Chan Hyeong	WeBT20.1	11		FrBT4.1	89
Kim, Chang-Sei	WeBT14.1	10	Kim, Jaehyo	ThPoS-26.14	81
	WePoS-26.10	29	Kim, Jaek U	WeAT15.1	C
	ThCT13.1	55		WeAT15.3	5
Kim, Chang-Seok	FrPoS-28.13	114	Kim, Janis	ThPoS-16.9	67
	FrPoS-28.15	114	Kim, Jason	FrAT4.1	C
	FrPoS-28.16	114		FrAT4.2	83
	FrPoS-28.36	115		FrAT4.3	83
	FrPoS-29.1	116		FrAT4.4	83
Kim, Chan-Il	FrPoS-32.17	125	Kim, Jeehoon	FrAT4.4	83
Kim, Choong Hyun	FrPoS-30.48	121	Kim, Jeong Won	FrPoS-28.15	114
Kim, Chulhong	WeAT11.1	4		FrPoS-28.36	115
	WeAT13.1	C	Kim, Jeonghun	FrPoS-30.26	120
	ThPoS-22.48	72		FrPoS-32.9	124
	FrPoS-30.37	120		FrPoS-32.10	124
Kim, Daeun	ThPoS-21.3	69	Kim, Jeong-Whun	ThCT13.2	55
Kim, Daegyeom	WeAT16.2	5	Kim, Ji Ah	ThPoS-07.6	61
Kim, Daejeong	ThPoS-26.11	81	Kim, Jihun	ThPoS-26.14	81
Kim, Daeyoung	WePoS-28.25	36	Kim, Jin Tae	WePoS-28.9	35
	WePoS-28.26	36	Kim, Jinho	WePoS-24.33	25
	WePoS-28.27	36	Kim, Jinhun	SaAT8.1	129
	WePoS-28.28	36	Kim, Jinman	WePoS-15.7	18
Kim, Do Youn	ThPoS-24.9	76		FrAT3.5	83
	FrPoS-29.32	118		FrPoS-12.5	107
Kim, Dohyun	WePoS-26.33	31	Kim, Jinseok	FrCT17.3	101
	FrPoS-32.18	125	Kim, Jinwon	ThPoS-24.23	76
Kim, Dong Woo	FrPoS-06.3	104	Kim, Jiyeong	ThPoS-24.30	77
Kim, Donghyeon	WePoS-05.8	14	Kim, Jong Chul	ThPoS-22.1	70
Kim, Dongyoung	FrBT14.4	93		ThPoS-22.26	71
Kim, Doo Hee	ThPoS-24.23	76		FrPoS-31.5	121
Kim, Do-Won	ThPoS-25.14	79	Kim, Jong Pal	WePoS-24.3	23
Kim, Euijin	ThPoS-25.14	79	Kim, Jonghoon	WePoS-24.47	26
Kim, Eun Young	ThPoS-23.10	73	Kim, Jonghyun	ThPoS-24.45	78
Kim, EungBo	ThPoS-24.48	78	Kim, Juhyon	WePoS-24.34	25
Kim, Gyeong Hun	FrPoS-28.15	114		FrPoS-31.1	121
	FrPoS-28.16	114		FrPoS-31.2	121
	FrPoS-28.36	115		FrPoS-31.14	122
	FrPoS-29.1	116		FrPoS-31.20	122
Kim, Hae won	FrPoS-32.12	124		FrPoS-32.7	124
Kim, Haena	FrPoS-32.4	124	Kim, Jung	ThPoS-07.6	61
Kim, Hee Chan	WeBT14.3	10		ThPoS-25.17	79
	WePoS-27.46	34		FrPoS-21.8	111
	ThPoS-23.33	74	Kim, Jung Dong	WePoS-26.48	32
	ThPoS-24.9	76	Kim, Jung Hoon	SaDT14.6	148
	ThPoS-25.8	78	Kim, Junghyun	ThPoS-24.49	78
	FrPoS-28.45	116	Kim, Jungsuk	ThPoS-23.4	73
	FrPoS-29.14	117		ThPoS-23.18	73
	FrPoS-29.23	117		FrBT4.1	89
	FrPoS-29.32	118		FrPoS-05.2	103
	FrPoS-31.39	123	Kim, Junsik	FrCT17.3	101
Kim, Hee Youn	FrPoS-14.4	108	Kim, Jun-Sik	ThPoS-22.1	70
Kim, Heejaung	WePoS-21.8	22		ThPoS-22.26	71
Kim, Heejin	FrPoS-29.14	117		FrPoS-31.5	121
Kim, Hodam	WePoS-25.23	27	Kim, Junyoung	ThPoS-24.45	78
	WePoS-25.27	27	Kim, Keehoon	ThPoS-04.6	59
Kim, Hong Kee	WePoS-26.48	32	Kim, Keri	FrBT14.4	93
Kim, Hong Nam	SaDT14.6	148		FrPoS-13.3	107
Kim, Hyojung	WePoS-26.28	30	Kim, Kiseon	WePoS-05.8	14
	FrAT18.4	88	Kim, Ku Ho	WePoS-26.27	30
	FrPoS-29.37	118		ThPoS-23.32	74
Kim, Hyoungseop	ThBT19.5	50		FrPoS-32.11	124
Kim, Hyung Ham	ThBT15.1	CC	Kim, Kwangwook	ThCT14.1	55
	ThBT15.1	49	Kim, Kyunghoon	FrPoS-31.11	122
Kim, Hyunggug	FrAT8.3	84	Kim, Kyung-Joong	WePoS-26.29	30
	FrAT8.4	84	Kim, Kyungsoo	ThPoS-26.7	81

Kim, Kyuyoung	ThPoS-24.37	77	Kim, Younghoon	WeBT13.6	10
Kim, Mi Kyung	WePoS-26.28	30		FrAT9.5	85
	FrAT18.4	88	Kim, Young-Min	WeAT15.1	5
	FrPoS-29.37	118		WeAT15.2	5
Kim, Mi Ok	FrBT12.1	92		WeAT15.4	5
Kim, Min Seong	WePoS-26.33	31	Kim, Yunjoo	ThPoS-07.6	61
	FrPoS-32.18	125	Kimbell, Julia	SaCT18.3	144
Kim, Min-Ju	SaAT8.1	129	Kimoto, Masaya	FrPoS-19.2	110
Kim, Minseok	ThPoS-22.27	71	Kimura, Keisuke	WeAT1.2	1
Kim, Minsung	FrPoS-30.8	119	Kimura, Tetsuya	WePoS-25.42	28
Kim, Minwoo	ThPoS-25.48	81	Kimura, Yoshitaka	WePoS-03.3	12
Kim, Mun Sang	WePoS-28.37	36		SaBT12.2	136
Kim, Myeongjin	SaBT10.1	136	Kimura, Yuichi	FrPoS-31.25	122
Kim, Namju	ThPoS-22.36	72	Kinany, Nawal	ThPoS-25.29	80
	ThPoS-23.42	75	King, Andrew Peter	WePoS-17.2	19
Kim, Nam-Kyu	FrPoS-29.8	117		ThBT9.6	47
Kim, Nathan	WeBT6.1	8	King, David Ryan	SaBT20.1	139
Kim, Raeyoung	FrPoS-31.12	122	King, Johnathan	FrCT16.5	101
Kim, Sang Joon	FrPoS-14.1	107	Kinnunen, Timo	SaCT16.2	143
Kim, Sangho	ThPoS-23.14	73	Kinoshita, Hiroyuki	WePoS-25.11	26
Kim, Sang-Ho	WePoS-25.16	27		FrCT12.1	99
	WePoS-27.35	33	Kinugawa, Jun	FrBT13.5	93
Kim, Sangwon	ThPoS-24.15	76	Kiral-Kornek, Filiz Isabell	FrAT11.5	85
Kim, Seohyeon	FrPoS-13.2	107		SaBT2.5	134
Kim, Seong-Woo	ThPoS-23.4	73		FrCT4.1	C
	ThPoS-23.18	73	Kirchner, Jens	FrCT4.5	97
	FrBT4.1	89	Kirimoto, Tetsuo	FrPoS-20.6	111
Kim, Seongyeon	FrAT8.3	84		FrPoS-30.32	120
	FrAT8.4	84	Kiriyaama, Yuka	ThBT19.6	50
Kim, SeungChan	WePoS-26.15	29	Kirollos, Nardin	FrPoS-22.5	111
Kim, SeungJin	ThPoS-23.25	74	Kirsch, Robert	WeAT6.5	2
Kim, Seung-Jong	ThPoS-16.3	67	Kirson, Eilon David	ThCT20.5	58
	ThPoS-21.3	69	Kiryu, Shogo	ThPoS-23.5	73
Kim, Seung-Won	ThPoS-04.4	59		ThPoS-23.6	73
Kim, Sohee	WePoS-25.3	26	Kishi, Takuya	WePoS-25.10	26
	ThPoS-22.36	72		WePoS-25.11	26
	ThPoS-22.38	72		WePoS-25.12	27
	ThPoS-22.50	73		FrCT12.1	99
	ThPoS-23.42	75	Kishimoto, Shinji	WePoS-29.10	38
Kim, Soonyoung	WePoS-28.15	35	Kissinger, Dietmar	FrBT4.5	90
	ThPoS-23.47	75		SaDT4.5	146
	ThPoS-23.50	75	Kissler, Johanna	ThPoS-08.8	61
Kim, Sun I.	WePoS-26.33	31	Kitamura, Tomoya	ThPoS-11.5	63
	FrPoS-32.18	125	Kitamura, Toshiaki	ThPoS-22.31	72
	FrPoS-32.19	125	Kitano, Keisuke	FrPoS-06.4	104
Kim, Sunae	WePoS-26.33	31	Kiuchi, Yukihiro	SaBT7.4	136
	FrPoS-32.19	125	Kiviniemi, Aida	SaCT14.1	143
Kim, Sung Gyung	ThPoS-26.14	81	Kjølstad Poulsen, Niels	ThPoS-17.2	67
Kim, Sung June	ThCT13.2	55	Klabunde, Thomas	SaAT15.4	132
	ThPoS-07.2	61	Klein, Karsten	FrPoS-12.5	107
	ThPoS-24.34	77	Klein, Liviu	WePoS-29.1	37
	FrPoS-28.17	114		ThAT15.5	43
Kim, Sung Won	ThPoS-23.3	73	Klein, Ronald	WePoS-21.11	22
Kim, Sunghan	WeAT1.4	1	Kleinbart, Jessica	FrBT5.4	90
Kim, Sung-Woo	WePoS-26.44	31		FrCT1.1	95
Kim, Sunhyo	ThPoS-07.2	61	Klerkx, Susie	WePoS-09.1	15
Kim, Sunmin	ThPoS-04.8	60	Klimas, Aleks	SaDT14.4	148
Kim, Suzi	FrPoS-12.2	107	Klimes-Dougan, Bonnie	ThBT13.6	48
Kim, Tae-Hoon	ThPoS-23.25	74		FrAT11.1	85
Kim, Taehyun	WePoS-27.35	33		SaAT9.4	130
Kim, Taekyung	FrPoS-32.14	125		SaCT14.5	143
	FrPoS-32.25	125	Kline-Schoder, Alina	ThPoS-03.3	59
Kim, Taewoo	ThPoS-07.6	61	Klingner, Anke	ThCT17.5	56
Kim, Wooseop	WePoS-26.27	30	Kloefkorn, Heidi	SaAT16.1	132
	ThPoS-23.32	74	Klok, Aske Bluhme	WeBT15.1	10
	FrPoS-32.11	124	Klucken, Jochen	ThPoS-24.19	76
Kim, Yangsoo	ThCT14.1	55	Klucznik, Richard	FrPoS-08.2	104
	ThPoS-21.1	69	Kluge, Tilmann	FrAT13.5	86
	FrAT14.4	86	Knezevic, Steven	WePoS-24.42	25
Kim, Yikeun	ThPoS-23.3	73	Knickerbocker, John	WePoS-17.2	19
Kim, Yohan	WePoS-27.35	33	Knight, Caroline	WePoS-22.4	22
Kim, Yong-Jae	FrPoS-31.6	121		ThBT9.2	47
Kim, Youn Ho	WePoS-10.2	16		ThBT9.6	47
	ThBT18.1	49	Ko, Byung-Hoon	ThBT18.1	49
Kim, Young Kook	FrPoS-28.45	116	Ko, Hanseok	WePoS-05.14	14
				SaDT14.6	148

Ko, Hyoungho	WePoS-24.3	23	Koone, Mary	FrPoS-11.5	106
Ko, Kyungdeuk	WePoS-05.14	14	Koozekanani, Dara	FrCT3.6	96
Ko, Sang-Bae	WePoS-27.46	34	Kopke, Joseph V	ThPoS-16.4	67
Kobayashi, Etsuko	WePoS-28.25	36	Korganbayev, Sanzhar	FrCT17.1	101
	WePoS-28.26	36	Korhonen, Ilkka	SaAT13.1	131
	WePoS-28.27	36	Korn, Martin	FrPoS-30.7	119
	WePoS-28.28	36	Kornegay, Joe	WePoS-15.8	18
Kobayashi, Futoshi	FrPoS-31.19	122	Korobeinyk, Alina	FrCT17.1	101
Kobayashi, Hiroshi	FrPoS-32.26	125	Korshoej, Anders R.	ThCT20.3	57
	FrPoS-32.28	125		SaAT15.2	132
Kobayashi, Hisato	ThPoS-23.29	74	Kos, Maciej Rafal	WeAT12.3	4
Kobayashi, Kazuto	FrCT5.2	97		WePoS-27.48	34
Kobayashi, Kotaro	ThPoS-24.5	75		WePoS-28.33	36
Kobayashi, Mai	FrPoS-30.32	120	Koshiji, Fukuro	FrPoS-28.43	116
Kobayashi, Ryuki	WePoS-28.28	36		FrPoS-32.49	126
Kobayashi, Shohei	ThPoS-25.24	79	Koshiji, Kohji	FrPoS-28.43	116
Kobayashi, Yuya	ThPoS-23.44	75		FrPoS-32.49	126
	FrPoS-28.29	115	Kosmas, Panagiotis	WePoS-23.4	23
Kobetic, Rudi	ThPoS-25.39	80	Kosmyna, Nataliya	SaBT7.6	136
Kobryn, Alexander E.	WePoS-26.18	30	Kostić, Vladimir	ThPoS-15.8	66
	WePoS-26.19	30	Kostka, Pawel Stanislaw	SaCT12.6	142
Kocejko, Tomasz	SaCT19.2	144	Kostoglou, Kyriaki	ThAT2.6	39
Koch, Martin	ThBT10.2	47	Kosuge, Kazuhiro	FrBT13.1	C
	ThBT10.3	48		FrBT13.5	93
Koch, Philipp	SaAT6.5	129	Kotake, Yasuyo	FrPoS-30.17	119
Kodandaramaiah, Suhasa	WePoS-17.6	20	Kotani, Kiyoshi	ThPoS-23.44	75
Kodeki, Kazuhide	ThPoS-23.35	74		FrPoS-28.29	115
Koeser, Joachim	SaCT15.3	143	Kothalkar, Prasanna	SaAT15.5	132
Kogias, Kleomenis	FrAT5.2	83	Koukoulas, Nikolaos	ThPoS-03.8	59
Koh, Angela	FrPoS-25.1	112	Koulaouzidis, Anastasios	FrPoS-23.4	112
Koh, Chin Su	ThPoS-24.34	77	Kouris, Ioannis	FrPoS-09.3	105
Koh, Tian Hai	WePoS-26.20	30		FrPoS-16.2	109
	WePoS-26.21	30		SaCT19.5	144
	WePoS-26.42	31	Kourou, Konstantina	ThCT5.2	52
Koh, Zhi Xiong	FrPoS-30.15	119	Koutsouri, Georgia	SaCT19.5	144
Kohanpour, Mohsen	ThPoS-21.7	70	Koutsouris, Dimitrios	ThPoS-23.21	74
	ThPoS-21.8	70		FrCT2.2	96
Kohl, Peter	SaAT12.3	131		FrPoS-09.3	105
Kohl, Zacharias	SaBT19.2	139		FrPoS-16.2	109
Kohli, Marc	WePoS-17.3	19		SaCT19.5	144
Kohli, Siddharth	ThAT16.4	43	Koyama, Daisuke	ThPoS-22.40	72
Koike, Takuji	FrBT18.6	94		FrPoS-32.22	125
Koike, Yasuharu	WePoS-25.33	28	Koyama, Yuki	ThPoS-02.7	58
Koivisto, Tero	ThAT15.1	43	Kozaki, Junya	FrPoS-32.29	125
Koizumi, Anna	FrPoS-28.30	115	Kozaki, Yuta	FrAT11.6	85
Koizumi, Koji	ThBT1.2	44	Kozlov, Mikhail	WeAT20.1	6
Kokare, Manesh	FrAT10.1	85		ThCT7.3	53
Kokozinski, Rainer	ThPoS-23.7	73	Krafft, Marie Pierre	FrPoS-32.22	125
Kolli, Kranthi	SaAT15.1	131	Krasoulis, Agamemnon	ThPoS-12.2	64
Komeili, Majid	FrPoS-22.7	111		ThPoS-12.4	64
Komiyama, Masatoshi	ThPoS-11.13	64		FrCT20.3	101
Komori, Tatsuya	FrPoS-30.44	120	Krauss, Baruch	SaBT12.4	136
Komoriya, Yota	WePoS-26.16	30	Krbec, Martin	FrPoS-30.9	119
Kompatsiaris, Ioannis (Yannis)	WeBT1.4	6		FrPoS-30.10	119
	WePoS-02.2	12	Kreiman, Gabriel	WePoS-04.6	13
Konczak, Juergen	ThAT4.3	40	Krenn, Claus Georg	ThCT13.4	55
Kondarage, Achintha Iroshan	FrAT10.5	85	Kreydin, Evgeniy	FrCT11.6	99
Kondo, Toshiyuki	WePoS-25.49	29	Krhac, Katjana	ThAT20.4	44
	FrPoS-31.37	123	Krijn, Roy	WePoS-05.2	13
Kong, Hyoun-Joong	ThPoS-25.8	78	Krishnan, Ashwati	ThCT4.3	52
Kong, Jun	WePoS-20.2	21		FrPoS-28.14	114
	FrCT3.2	96	Krishnan, Raj	SaBT18.5	138
	SaAT3.5	128	Krishnan, Shankar	ThBT15.5	49
Kong, Kai Ling	FrPoS-05.5	104	Krishnan, Sridhar	FrPoS-22.5	111
Kong, Tao	ThBT1.1	44	Krishnaswamy, Deepa	ThBT3.4	45
Kong, Zhuang	FrAT18.5	88	Krishnaswamy, Uma maheswari	ThCT9.1	53
Konitsiotis, Spiros	FrCT2.2	96	Kritikos, Jacob	ThPoS-23.21	74
Kontaxis, Spyridon	SaBT13.1	137	Krohova, Jana	SaCT7.1	141
Kontogiannopoulos, Spyridon	ThPoS-03.7	59	Kroll, Mark William	ThPoS-14.18	66
Koo, Beomseo	FrBT1.5	89	Krstic, Djordje	WePoS-24.36	25
Koo, Jeong-Hoi	WeAT15.4	5	Krueger, Darcy A	FrBT9.6	92
Koo, Kyoin	ThPoS-23.45	75	Krumholz, Harlan	SaAT16.4	132
	ThPoS-26.10	81	Krystal, Andrew	FrAT17.5	87
	FrPoS-15.3	108	Ku, Jeonghun	ThPoS-23.40	75
	FrPoS-28.28	115		ThPoS-24.43	78
Kook, Geon	FrAT18.4	88		ThPoS-25.25	79



Lambrou, Tryphon	SaAT19.4	133	Lee, Chang Won	FrPoS-32.14	125
Lammert, Adam	WePoS-28.14	35		FrPoS-32.25	125
Lan, Hengrong	SaAT10.1	130	Lee, Changho	WeAT11.1	CC
	SaAT10.2	130		WeAT11.1	4
	SaAT10.4	130		WeAT11.3	4
Lan, Ning	ThPoS-15.11	67	Lee, Chany	WePoS-26.36	31
	FrCT8.5	98	Lee, Chi-Chun	SaBT16.3	138
Lanata', Antonio	WePoS-06.4	14	Lee, Chung Jae	WePoS-28.11	35
	WePoS-10.7	16	Lee, Curtis	ThPoS-24.26	77
	WePoS-11.5	16	Lee, Dahye	ThPoS-24.34	77
Landgraf, Hans-Peter	FrPoS-04.6	103	Lee, Deok-Won	WePoS-28.37	36
Landry, Shane	ThAT18.2	44	Lee, Deuk Yong	WePoS-24.29	25
Langari, Reza	WePoS-27.15	32		FrPoS-29.24	117
Langenmair, Michael	FrBT1.1	89	Lee, Dongheon	ThPoS-25.8	78
Langø, Thomas	ThPoS-06.4	60	Lee, Donghyun	WeAT11.1	4
Laussens, Dorien	WePoS-27.49	34	Lee, Dongseok	FrPoS-32.38	126
Lao, Bryan	ThPoS-25.37	80	Lee, Doo Yong	SaBT10.1	136
Laquintinie, Pierre	FrAT14.2	86	Lee, Eunbyul	WePoS-25.16	27
Lara Hernandez, Julio Antonio	FrBT12.1	92	Lee, Gobert	ThAT19.1	CC
Larin, Kirill	WePoS-21.1	21		ThBT19.1	C
Lariviere, Sara	ThAT2.6	39		ThBT19.1	50
Larsen, Mark Erik	WeAT8.1	CC		FrCT3.5	96
	WeAT8.5	3	Lee, Grace Sooyeon	FrAT15.2	87
	FrPoS-11.9	106	Lee, Hae-Seung	FrAT7.3	84
Larson, Lawrence	FrPoS-29.19	117		FrPoS-01.7	102
Larsson, Rasmus	WePoS-16.7	19	Lee, Hanjin	WeBT20.1	11
	WePoS-18.5	20	Lee, Hankyu	WePoS-24.3	23
	SaDT3.4	145	Lee, Heung-No	FrPoS-29.38	118
Lash, Tiffani	SaAT18.1	C	Lee, Hojin	SaAT8.1	129
Lataire, John	WeBT10.3	9	Lee, Howard	WeBT19.3	11
Latham, Susan	FrPoS-07.3	104	Lee, Hye Jin	FrPoS-31.11	122
Lau, Anthony	ThPoS-03.5	59	Lee, HyeRan	WePoS-24.29	25
	ThPoS-03.9	59	Lee, hyojin	FrPoS-32.19	125
Lau, Condon	SaCT3.3	140		FrPoS-32.25	125
	SaCT3.4	140	Lee, HyoSeok	ThPoS-23.45	75
Lau, James Y. W.	FrPoS-12.7	107		ThPoS-26.10	81
Laubner, Dominic	WePoS-27.18	33		FrPoS-15.3	108
	WePoS-27.19	33		FrPoS-28.28	115
	WePoS-28.12	35	Lee, Hyungwoo	FrPoS-14.1	107
Laude, Augustinus	FrPoS-07.1	104	Lee, Hyunjoo Jenny	WePoS-25.46	28
Laurent, Gabriel	FrPoS-30.27	120		WePoS-26.28	30
Lavarello, Roberto	FrCT5.1	97		FrAT8.1	C
Laverde, Rubbermaid	SaBT19.3	139		FrAT8.3	84
Lavranos, Jim	ThPoS-12.5	64		FrAT8.4	84
	FrPoS-29.30	118		FrAT18.4	88
Lavy-shahaf, Gitit	ThCT20.5	58		FrPoS-29.37	118
Lawhern, Vernon	FrAT1.5	82		SaAT1.1	C
Lawrence, Summer	ThPoS-03.9	59	Lee, Hyunsuk	ThCT14.1	55
Lawson, Brian	FrAT13.3	86	Lee, Jae Sung	WeAT16.1	C
	FrBT13.3	93		WeAT16.1	5
Layton, Alexander	WeBT1.3	6	Lee, Jaehun	FrPoS-32.21	125
Lázaro, Jesús	SaBT13.1	137	Lee, Jee Won	WePoS-28.15	35
Le Maout, Paul	FrAT14.2	86		ThPoS-23.50	75
Le Rolle, Virginie	SaAT8.5	129		ThPoS-24.34	77
	SaBT20.4	139	Lee, JeeEun	FrPoS-29.34	118
Le, Anthony	WePoS-29.6	37	Lee, Jenny T H	WePoS-15.4	18
Le, Minh Hung	WePoS-18.7	20	Lee, Ji Soo	FrPoS-29.23	117
Le, Zung	SaCT14.5	143	Lee, Jihun	ThPoS-25.3	78
Leach, Kent	FrPoS-30.39	120		FrPoS-29.19	117
Leal Ordonez, José	WePoS-27.14	32	Lee, Jihyoung	FrPoS-29.11	117
	SaBT1.1	134	Lee, Jimmy	WePoS-27.36	34
Leal, Adriana	FrPoS-09.5	105	Lee, Jiwon	ThPoS-23.1	73
Leaman, Eric	SaDT20.6	149		ThPoS-23.10	73
Leary, Eileen B	WePoS-29.18	38		FrPoS-31.13	122
Leary, Emily	ThPoS-17.1	67	Lee, JiYong	FrBT20.1	95
Lechtig, Aron	WeBT20.5	11	Lee, Jong Min	ThPoS-16.3	67
Lecouturier, Jan	WePoS-26.5	29	Lee, Jong Yeop	WePoS-28.11	35
Lederman, Dror	FrAT3.4	82	Lee, Jongbeom	SaBT10.1	136
Lee Jr., Fred T.	SaDT14.5	148	Lee, Jongchan	WePoS-26.10	29
Lee, Alex	ThBT18.3	49	Lee, Jong-Ha	FrPoS-32.12	124
Lee, Beng Hai	ThAT19.2	44		FrPoS-32.13	124
Lee, Beom-Chan	ThCT14.5	56		FrPoS-32.17	125
Lee, Brian	FrCT11.6	99	Lee, Jong-Shill	WePoS-26.33	31
Lee, Byung Chul	SaDT14.6	148		FrPoS-32.18	125
Lee, Chang Min	FrPoS-30.48	121			



Lee, Jongwon	FrPoS-30.26	120	Lee, Younbaek	FrPoS-30.26	120
	FrPoS-31.6	121		FrPoS-31.6	121
	FrPoS-32.9	124		FrPoS-32.9	124
Lee, Jongwook	ThBT18.1	49	Lee, Yuhun	FrPoS-32.40	126
Lee, Joonnyong	WeBT14.3	10	Lee, Yujin	WePoS-24.30	25
	FrPoS-31.39	123		FrPoS-28.39	116
Lee, Joungmin	FrPoS-29.23	117	Lee, YunHsuan	WePoS-05.7	14
Lee, Jun Ho	ThPoS-24.9	76	Leekens, Boris	FrPoS-04.2	103
Lee, June-Young	ThCT15.1	56	Leeners, Brigitte	FrAT17.1	87
Lee, Junseok	WeBT3.6	7	Leeson, Paul	ThBT3.6	45
Lee, Jusin	ThPoS-22.16	71		FrBT10.6	92
Lee, Jusuk	FrBT13.1	93	Legault, Catherine	SaBT19.5	139
Lee, Ju-Yeon	FrPoS-30.14	119	Legget, Malcolm E.	WePoS-07.2	15
Lee, Kang Dae	ThPoS-23.3	73	Lehang, Guo	FrBT10.2	92
Lee, Keonsoo	WePoS-27.4	32	Lehman, Li-wei	FrAT12.6	86
	FrPoS-32.42	126	Lehser, Caroline	ThPoS-25.36	80
Lee, Kyoung Joung	FrPoS-29.29	118	Lehtonen, Eero Lennart	ThAT15.1	43
	FrPoS-32.23	125	Lei, Baiying	WePoS-18.7	20
Lee, Ming-Yih	ThAT9.2	41		ThCT3.1	51
Lee, Minhyung	FrPoS-30.26	120	Lei, Kin Fong	ThAT9.1	C
	FrPoS-31.6	121		ThAT9.3	41
	FrPoS-32.9	124	Lei, Na	WeBT3.1	7
	FrPoS-32.10	124	Lei, Xin	WePoS-24.13	24
Lee, Min-Woo	FrPoS-30.14	119	Leiner, Tim	ThBT5.4	46
Lee, Miran	SaBT13.3	137	Leistritz, Lutz	FrBT9.1	91
Lee, Moon-Su	FrPoS-32.40	126	Leite, Argentina Maria	WePoS-11.4	16
Lee, Onseok	ThPoS-23.1	73	Leitschuh, Joseph	FrPoS-05.1	103
	ThPoS-23.10	73		SaDT12.6	147
	FrPoS-31.13	122	Lemaire, Edward	FrPoS-28.25	115
Lee, Sabrina	ThCT12.1	55	Lemaire, Jean-Jacques	ThPoS-14.15	65
	ThPoS-15.10	67	Lemay, Mathieu	ThCT13.3	55
Lee, Saewoom	FrAT4.2	83	Lemkaddem, Alia	WeAT14.3	4
Lee, Sanghyeb	SaBT10.3	136		WePoS-25.8	26
Lee, Sanghyub	WePoS-28.37	36		ThCT13.3	55
Lee, Sangjun	WePoS-26.36	31		FrAT17.1	87
Lee, Sangkug	FrPoS-32.40	126	Lemos, Pedro	WePoS-22.7	22
Lee, Saram	WeBT14.3	10	Lendaro, Eva	SaAT6.4	129
	FrPoS-31.39	123	Leng, Shuang	FrPoS-25.1	112
Lee, Seong Joo	WePoS-28.11	35		FrPoS-25.2	112
Lee, Seul	WePoS-28.11	35	Lenglet, Christophe	ThBT13.6	48
Lee, Seung Jun	ThCT15.1	56		FrAT11.1	85
Lee, Seung Woo	ThPoS-14.17	66		SaAT9.4	130
Lee, Seung Yup	FrPoS-29.20	117	Lenk, Claudia	FrPoS-24.7	112
Lee, Seung-A	ThPoS-24.41	77	Lenzi, Tommaso	ThPoS-05.6	60
Lee, Seung-Beck	ThPoS-22.16	71	Leong, Alex T. L.	SaCT3.3	140
Lee, Seungchan	FrPoS-29.38	118	Leong, Bao Ru	ThBT3.3	45
Lee, Seunghyun	SaDT14.6	148	Leong, Kam	WeBT11.2	9
Lee, Seung-Hyun	FrPoS-26.1	113		WePoS-29.5	37
Lee, SeungJae	WePoS-26.33	31	Leonhardt, Steffen	WePoS-21.5	21
	FrPoS-32.18	125		ThAT8.4	41
Lee, Soo Hyun	FrPoS-14.4	108		FrCT9.1	CC
Lee, Su-In	SaAT20.4	133		FrCT9.3	98
Lee, Su-Jae	ThPoS-22.16	71		SaBT17.1	138
Lee, Suji	WeAT16.2	5		SaDT9.2	147
Lee, Sung Joong	ThPoS-23.43	75	Lepore, Natasha	ThBT9.1	C
Lee, Sung Woo	FrAT18.4	88	Leppänen, Juha	SaCT16.2	143
Lee, Sunghoon Ivan	ThCT14.1	55	Lerchbacker, Joseph	FrBT4.4	90
	ThPoS-21.1	69		FrPoS-20.5	110
	FrAT14.4	86	Lerner, Matthew D.	WePoS-05.10	14
	FrPoS-22.6	111	Lerner, Zachary	FrAT13.4	86
Lee, Sungjun	SaBT15.1	137	Lesage, Frederic	WePoS-16.3	19
Lee, Woonghee	WeBT13.6	10	Lessmann, Nikolas	ThBT5.4	46
Lee, Woosub	ThPoS-04.4	59	Leung, Connie	FrPoS-06.7	104
Lee, Yeasol	ThPoS-23.45	75	Leung, Ka Ying Karman	ThPoS-20.7	69
	ThPoS-26.10	81	Leung, Vincent	FrPoS-29.19	117
	FrPoS-15.3	108	Leung, Wai Hong	WePoS-03.2	12
	FrPoS-28.28	115	Leung, Wing Cheong	ThPoS-16.10	67
Lee, Yena	FrPoS-29.2	116		ThPoS-21.13	70
Lee, Yeolho	WePoS-26.13	29	Levi, Shay	ThCT20.5	58
Lee, Yi Jae	FrPoS-14.4	108	Levi, Timothee	ThPoS-25.11	79
Lee, YongKwan	FrPoS-15.3	108	Levine, Steven	ThAT20.5	44
Lee, Yoonje	ThPoS-25.48	81	Levine, Yaakov	FrCT14.4	100
Lee, Youjin	WePoS-28.15	35	Levy, Emily	ThPoS-07.5	61
	ThPoS-23.50	75	Lewallen, Susan	SaDT5.5	146
	ThPoS-24.34	77	Lewis, Stephen	WeBT5.4	8
			Ley, Sebastian	SaBT17.3	138

Li, Andrew	FrPoS-24.4	112	Li, Yao	WeAT1.6	1
Li, Ao	WePoS-24.8	24		WeAT9.3	3
	WePoS-24.9	24		ThBT13.2	48
Li, Baojun	WePoS-24.32	25		ThBT13.4	48
Li, Bing Nan	WePoS-28.28	36		SaCT3.2	140
Li, Changzhi	FrPoS-22.4	111	Li, Ye	WePoS-12.2	16
Li, Chia-Chen	WePoS-28.13	35		FrPoS-11.6	106
Li, Chuang	WePoS-26.26	30		FrPoS-11.8	106
Li, Chung Hon	ThPoS-20.9	69		FrPoS-31.43	123
Li, Fangyu	FrBT9.3	91		SaBT16.4	138
Li, Gang	ThBT9.4	47		SaCT4.3	140
Li, Guanglin	WePoS-06.3	14	Li, Ying	FrPoS-14.3	108
	ThPoS-20.7	69		SaAT5.1	128
	FrAT7.1	CC	Li, Yongcheng	SaDT9.4	147
	FrBT17.5	94	Li, Yuan-heng	FrCT8.4	98
	FrCT7.1	C	Li, Yuanqi	WeAT1.6	1
	FrCT7.3	98	Li, Yuanwei	WePoS-17.2	19
	FrCT20.6	102		WePoS-22.4	22
	FrPoS-18.6	110		ThBT9.2	47
	SaAT4.5	128		ThBT9.6	47
Li, Hai (Helen)	FrAT2.5	82	Li, Yudu	WeAT9.3	3
Li, Hangdao	WeAT1.6	1	Li, Yue	ThPoS-22.32	72
Li, Hangxing	ThCT3.3	51	Li, Yufeng	SaDT14.2	148
Li, Huiqi	SaAT18.3	133	Li, Yumeng	ThPoS-22.8	70
Li, Jianan	WePoS-14.4	18	Li, Yunlin	FrBT7.2	91
Li, Jian-ping	FrCT8.4	98	Li, Yupeng	WeBT3.2	7
Li, Jiewei	WePoS-25.43	28		WePoS-18.2	20
Li, Jinfeng	ThPoS-26.15	81	Li, Zhenzhou	FrPoS-28.18	114
Li, Jingsong	WePoS-03.8	13	Li, Zhi	WePoS-16.10	19
Li, Junhua	WeBT2.2	7		FrPoS-09.6	105
Li, Kai	FrPoS-08.5	105	Li, Zhicong	WePoS-16.10	19
Li, Ke	ThPoS-11.2	63	Li, Zhuoran	WePoS-24.41	25
	ThPoS-19.4	68	Li, Ziyue	FrCT4.3	96
Li, Kunyan	SaBT14.4	137		SaAT1.2	127
Li, Le	ThPoS-24.4	75	Liakopoulos, Trifon	FrPoS-04.2	103
Li, Lianyang	FrBT11.6	92	Lian, Yong	FrCT9.5	98
Li, Liming	ThPoS-14.21	66		FrCT18.6	101
Li, Ling	FrPoS-28.21	115		SaDT9.1	147
Li, Linze	WePoS-25.21	27	Liang, Dong	WeAT9.4	3
Li, Luming	WePoS-25.21	27	Liang, Jackson	FrPoS-03.4	103
Li, Min	FrPoS-06.2	104	Liang, Renghao	FrPoS-06.2	104
Li, Peiyang	WePoS-28.23	36	Liang, Shengyun	FrPoS-21.5	111
Li, Peng	WePoS-08.3	15		FrPoS-22.1	111
	ThPoS-20.7	69	Liang, Xu	ThPoS-16.2	67
	FrPoS-18.6	110	Liang, Zhi-Pei	WeAT9.3	3
Li, Qi	FrPoS-11.6	106	Liao, Hongen	FrBT14.3	93
Li, Qian	FrBT10.3	92	Liao, Wen-Huei	WePoS-07.1	15
Li, Ronny	SaCT4.2	140	Liao, Yuanyuan	FrPoS-30.49	121
Li, Shanshan	WePoS-26.22	30	Liapis, Evangelos	WePoS-21.10	22
Li, Shaoqi	FrBT18.1	94	Liappas, Nikolaos	WePoS-24.22	24
Li, ShiHao	WePoS-27.5	32	Liarokapis, Minas	ThPoS-01.4	58
Li, Shiqian	FrBT18.1	94	Libbus, Imad	FrCT14.2	100
Li, Si	FrCT8.5	98	Libedinsky, Camilo	ThPoS-09.15	62
Li, Tianhui	FrAT9.3	84	Liberson, Alexander	WePoS-25.19	27
Li, Ting	ThCT14.6	56		SaBT12.1	136
Li, Tingguang	ThPoS-05.3	60	Licitra, Lisa	WePoS-19.5	20
Li, Wei	ThCT4.6	52	Liebert, Adam	WePoS-24.7	24
Li, Weifu	WePoS-15.3	18	Liedberg, Bo Gunnar	WePoS-16.4	19
	SaBT3.3	134	Lien, Chun Lung	WePoS-24.27	25
Li, Wen	FrCT1.2	95	Ligges, Carolin	ThAT2.2	39
Li, Wenze	FrAT15.2	87		FrBT9.1	91
Li, Xia	ThCT3.1	51	Lightbody, Gordon	WePoS-04.2	13
Li, Xiangxin	FrCT20.6	102		SaCT7.2	141
Li, Xiao	ThPoS-06.8	60		SaDT2.1	145
Li, Xilin	ThCT11.1	54	Lilien, Joseph	ThBT20.3	50
Li, Xin	WeBT2.1	7	Lim, Bokman	FrBT13.1	93
	WePoS-12.2	16	Lim, Byeongkyu	ThPoS-04.6	59
Li, Xinde	FrPoS-01.5	102	Lim, Hae Gyun	ThBT15.1	49
Li, Xinyi	FrAT3.2	82	Lim, Hyunjun	FrPoS-32.14	125
Li, Xinzhong	FrPoS-08.6	105		FrPoS-32.25	125
Li, Xuan	WeAT12.3	4	Lim, Hyunmi	ThPoS-23.40	75
	WePoS-28.33	36		ThPoS-24.43	78
Li, Xue	WeAT17.4	5	Lim, Jeffrey	SaAT8.2	129
Li, Xue Jun	FrBT9.4	91	Lim, Jongwon	WePoS-27.6	32
	FrBT18.3	94	Lim, JungHwan	WePoS-27.8	32
			Lim, Rachel Su Ann	WeAT13.1	4

Lim, Seungeui	ThPoS-25.25	79	Liu, Jiang	WePoS-21.9	22
Lim, Soo Teik	WePoS-26.42	31		ThAT19.2	44
Lim, Sze-Xian	SaAT20.1	133		FrAT10.3	85
Lim, Taeho	ThPoS-25.48	81		SaDT5.6	146
Lim, Tock Han	FrPoS-07.1	104	Liu, Jiayang	FrPoS-20.3	110
Lim, Yong Gyu	FrPoS-32.38	126	Liu, Jikui	WePoS-12.2	16
Lim, Yoonseob	FrBT19.2	95	Liu, Jing	WePoS-15.3	18
Lim, Young Kyung	WePoS-26.44	31		ThBT17.4	49
Lima, Jonathan Alis	SaCT5.2	141		ThPoS-23.15	73
Lin, Bryant	FrPoS-28.8	114		FrAT17.4	87
Lin, Ching Chang	FrPoS-30.45	121		FrBT17.4	94
Lin, Ching-Heng	SaBT16.3	138		SaBT3.3	134
Lin, Christopher	ThPoS-18.2	68	Liu, Jun	WePoS-27.31	33
Lin, Chuang	FrCT7.3	98	Liu, Junchi	ThPoS-23.22	74
	FrPoS-18.6	110		ThPoS-23.23	74
Lin, Dongdong	FrPoS-12.3	107	Liu, Juntao	FrAT18.5	88
Lin, Donghai	ThAT17.2	43		FrPoS-18.1	109
Lin, Francis	SaBT18.6	139	Liu, Kwei	FrPoS-17.6	109
Lin, Frank	FrPoS-25.4	112	Liu, Lin	SaBT15.1	137
Lin, Harrison	ThPoS-14.11	65	Liu, Lu	SaAT3.2	127
Lin, Junquan	FrPoS-15.5	108	Liu, Ming	WePoS-08.3	15
Lin, Kaiwen	WePoS-11.6	16		FrAT9.5	85
Lin, Mong-Wei	WePoS-28.13	35		FrPoS-06.5	104
Lin, Rongmei	SaAT16.3	132		FrPoS-31.32	123
Lin, Rongzan	ThPoS-22.34	72		FrPoS-31.48	124
Lin, Vincent Po Hen	FrPoS-15.5	108	Liu, Na	WePoS-11.3	16
Lin, Wan-Hua	ThPoS-20.7	69	Liu, Nan	WePoS-24.19	24
Lin, Weili	ThBT9.4	47		FrPoS-30.15	119
Lin, Wen-Yen	ThAT9.2	41	Liu, Ran	WePoS-24.16	24
Lin, Xun	WeBT1.3	6		ThPoS-22.34	72
Lin, Yu-Chieh	FrAT1.4	82	Liu, Shan	ThBT3.1	45
Lin, Yu-Zhe	ThPoS-16.8	67	Liu, Shing-Hong	WePoS-24.26	25
	SaDT7.4	147		WePoS-27.10	32
Lin, Zhiping	WePoS-14.5	18	Liu, Shiqi	WePoS-25.31	28
	ThPoS-11.12	64		ThPoS-23.28	74
	FrAT2.4	82	Liu, Shuang	ThPoS-08.3	61
Lind, Carl	ThAT7.5	41		FrAT1.1	82
	ThAT7.6	41	Liu, Shuting	FrPoS-18.6	110
Lindecrantz, Kaj	ThAT7.1	40	Liu, Sijie	WePoS-21.2	21
	ThAT7.2	40	Liu, Siyuan	WePoS-27.25	33
Lindholm, Harri	FrAT12.3	86	Liu, Tianming	FrBT9.3	91
	SaCT12.3	142	Liu, Tong	SaBT20.5	139
Lindner, Lydia	WePoS-16.2	18	Liu, Weidong	FrBT17.5	94
Ling, Haibin	WePoS-20.3	21	Liu, Wen	FrAT10.3	85
	FrAT3.2	82	Liu, Wentai	FrPoS-14.3	108
Ling, Sai Ho, Steve	WePoS-10.4	16		SaAT5.1	128
	WePoS-16.9	19		SaCT1.5	140
	ThCT11.1	54	Liu, Xiaodong	ThPoS-15.11	67
	FrCT14.1	100	Liu, Xiaoya	ThPoS-08.3	61
	FrPoS-24.2	112	Liu, Xiaoyu	ThPoS-11.12	64
Linguraru, Marius George	ThBT9.1	CC	Liu, Xin	ThAT1.5	39
	ThBT9.1	47		FrPoS-22.6	111
	ThBT9.3	47	Liu, Xiuhua	FrBT13.4	93
	FrBT10.1	C	Liu, Xueyu	FrPoS-18.6	110
	FrBT10.5	92	Liu, Yan	WePoS-25.22	27
Linnes, Jacqueline Callihan	FrPoS-01.8	102	Liu, Yawen	ThPoS-22.21	71
	FrPoS-04.5	103		ThPoS-22.37	72
Liò, Pietro	ThCT3.5	51	Liu, YeHe	WeBT5.4	8
Lipkin, Steven	ThPoS-18.2	68	Liu, Yifan	FrPoS-29.3	116
Lipp, Ottmar, V	FrAT11.4	85	Liu, Yi-Hung	WePoS-25.15	27
Liston, Conor	ThBT20.6	50	Liu, Yilong	ThCT7.1	53
Little, Simon	ThPoS-16.6	67	Liu, Ying	WePoS-05.1	13
Liu, Ai Qun	WePoS-16.4	19	Liu, Yingchao	SaDT16.3	148
Liu, Bing	ThAT3.1	39	Liu, Yixiang	ThPoS-16.1	67
Liu, Charles Y.	FrCT11.6	99	Liu, Yong	ThAT3.1	39
	SaAT8.2	129	Liu, Zhenyu	WeBT3.5	7
	SaDT9.4	147		FrAT3.3	82
Liu, Chen	FrPoS-31.46	123		FrPoS-12.4	107
Liu, Chenyang	WePoS-25.43	28	Liu, Zhiduo	ThCT4.5	52
Liu, Chih-Hao	WePoS-21.1	21	Liu, Zhiwen	FrAT16.4	87
Liu, Congcong	WePoS-04.10	13		SaBT16.1	138
	ThCT15.3	56	Liu, Zhiyuan	SaAT4.5	128
Liu, Dongxi	WePoS-19.1	20	Livingston, Eric Wilson	ThPoS-03.9	59
Liu, He	FrPoS-20.6	111	Liyuan, Chen	FrCT16.3	101
Liu, Jia	ThPoS-24.36	77	Lo Presti, Daniela	ThCT18.2	57
				FrAT17.2	87

Lo, Benny	FrCT7.4	98	Lu, Huaguang	SaDT15.1	148
Lo, Christine	WeBT13.3	9	Lu, Huimin	ThBT19.5	50
	ThCT11.5	54	Lu, Jian	ThPoS-23.46	75
Lo, Meng-chen	FrAT20.1	88	Lu, Ke	ThAT7.2	40
	SaAT7.5	129	Lu, Lei	ThPoS-21.12	70
Lo, Yi-Kai	SaCT1.5	140	Lu, Limin	SaAT18.6	133
Lo, Yu-Chun	WePoS-27.44	34	Lu, Lu	WeBT12.3	9
	FrAT1.4	82	Lu, Minhua	WePoS-22.9	22
Lobaton, Edgar	WePoS-08.2	15		WePoS-24.42	25
	ThPoS-05.5	60		WePoS-25.43	28
	SaAT2.6	127		ThPoS-24.36	77
Lobo-Mueller, Edrise M.	WePoS-24.21	24		FrPoS-28.18	114
Locke, Sarah	FrAT19.3	88		FrPoS-28.19	115
Locteau, Hervé	SaCT14.4	143		FrPoS-28.21	115
Loddenkemper, Tobi	WePoS-04.6	13	Lu, Wei	FrCT8.4	98
Loeliger, Hans-Andrea	FrAT6.1	83	Lu, Weiguo	WeBT6.1	8
Loewe, Axel	WePoS-10.5	16	Lu, William	ThPoS-22.29	72
Loflin, Ben	FrPoS-32.5	124	Lü, Xiaoying	ThPoS-15.2	66
	FrPoS-32.43	126		ThPoS-23.26	74
Logier, Regis	WePoS-11.1	16		FrPoS-31.44	123
	SaCT4.1	140	Lu, Yao	ThPoS-10.2	63
Lok, Edwin	ThCT20.4	57		FrPoS-08.8	105
Lombardi, Prospero	WeAT14.2	4	Lu, Yichen	ThAT1.5	39
	ThAT15.3	43	Luan, Lan	WeAT17.4	5
Lombardo, Lisa	ThPoS-25.39	80	Lubecke, Victor	ThCT2.2	51
Lomonaco, Tommaso	FrPoS-04.2	103	Lubich, Ludwig	SaAT17.6	132
Long, L. Rodney	SaDT3.2	145	Lucarini, Gioia	WeAT18.4	5
Long, Troy	WeBT6.1	8	Lucchesi, Irene	FrPoS-21.7	111
Long, Xiao Lin	FrPoS-28.12	114	Lucchini, Maristella	SaDT2.4	145
Long, Zhiying	SaCT3.2	140	Ludka, Ondrej	WeBT4.1	7
Longato, Enrico	SaBT16.2	138	Ludvig, Daniel	WeBT10.1	C
Longo, Renata	SaBT10.2	136		WeBT10.2	9
Lontis, Eugen Romulus	ThPoS-21.5	69		ThAT11.1	C
	FrCT8.3	98		ThAT11.1	42
Loo, Colleen	ThBT20.4	50	Ludvigsson, Sofie	ThPoS-03.4	59
	FrCT14.1	100	Ludwig, Kip	WeBT5.1	CC
Looi, Lai Meng	WePoS-15.4	18		WeBT5.2	8
López Noriega, Carlos	ThCT12.2	55	Luhmann, Christian C.	WePoS-05.10	14
Lopez, Carolina Mora	ThPoS-14.1	65	Lui, Hin Wai	FrPoS-19.1	110
López, Manuel	SaAT14.6	131	Lui, Yvonne	WePoS-03.9	13
López, Natalia M	WePoS-12.1	16		ThCT3.4	51
Lopez-Duran, Nestor	FrPoS-08.4	105	Luik, Armin	WePoS-10.5	16
López-Larraz, Eduardo	ThPoS-09.17	62	Lukitsch, Benjamin	WePoS-26.9	29
Lopez-Martinez, Daniel	WeAT12.4	4		ThCT13.4	55
	SaCT7.4	141	Lukos, Jamie	ThPoS-22.46	72
Lopez-Perez, Laura	ThPoS-25.5	78	Lum, Peter	ThPoS-26.6	81
Lopour, Beth	WePoS-12.3	17	Lundt, Jonathan	SaDT14.5	148
	FrBT9.6	92	Lundy, Mary	ThCT19.2	57
Lorach, Henri	WePoS-24.13	24	Lunner, Thomas	ThAT1.3	39
	ThBT6.1	46		ThBT8.5	47
Lorenzo, Jhunlyn	WePoS-25.5	26		ThPoS-23.13	73
Lorussi, Federico	FrPoS-21.7	111	Luo, Ailing	ThBT2.1	45
Lotfian, Mahboube	ThPoS-21.6	69		FrPoS-06.2	104
Lotz, Jeffrey	ThBT18.5	49	Luo, Cunjin	SaBT20.5	139
	ThCT12.5	55	Luo, Huichun	ThPoS-25.47	81
Louis, Gerstenfeld	WeBT20.4	11	Luo, Jianwen	WeAT13.3	4
Lourme, Jean-Christophe	FrPoS-04.2	103	Luo, Jiawen	WePoS-16.4	19
Lovell, Nigel H.	ThAT10.2	41	Luo, Jinping	FrAT18.5	88
	ThBT6.3	46		FrPoS-18.1	109
	ThBT6.6	46	Luo, Lincong	WePoS-27.11	32
	ThPoS-14.21	66	Luo, Na	FrPoS-12.3	107
	ThPoS-20.9	69	Luo, Rui	FrCT1.2	95
	ThPoS-22.23	71	Luo, Weixin	FrAT10.3	85
	FrPoS-11.9	106	Luo, Yun	FrAT1.3	82
	SaCT1.2	139	Luo, Yu-Xi	FrPoS-30.49	121
	SaDT7.5	147	Luo, Zhan	WePoS-13.3	17
	SaDT19.1	149	Luo, Zichong	ThPoS-24.4	75
Low, Lian Leng	WePoS-24.19	24	Lusher, John	ThAT3.2	39
Lowe, Andrew	WePoS-07.2	15	Luther, Maureen	FrCT10.6	99
Lowery, Curtis	FrBT2.2	89	Luther, Stefan	SaAT12.2	131
Lowit, Anja	SaAT9.5	130	Luu, Chi	ThCT1.5	51
Loza, Carlos	FrBT9.5	91	Luu, Gia Loc	FrPoS-01.2	102
Lozano-García, Manuel	FrBT20.2	95	Luviano Juárez, Alberto	FrPoS-30.23	119
Lu, Bao-Liang	FrAT1.3	82	Lv, Han	ThPoS-22.37	72
Lu, Cheng-Che	ThPoS-24.42	78	Lv, Luxian	WePoS-13.4	17
Lu, Han	FrAT2.4	82			

Lv, TingTing	FrAT2.2	82
	FrAT2.3	82
Lyle, Alexandra	ThCT19.4	57
Lynch, Dennis	FrPoS-11.4	106
Lyons, Kenneth	SaBT6.4	135
Lyu, Bo	SaCT9.5	142
Lyu, Boyang	WePoS-26.6	29
Lyu, Hongming	FrCT4.2	96
Lyu, Juan	WePoS-16.9	19
Lyu, Mengye	ThCT7.1	53

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M S Aradhya, Abhay	SaCT3.6	140
M Shankaranarayana, Sharath	FrAT10.4	85
M. Golshan, Hosein	SaAT7.1	129
M.S. Dinesh	FrPoS-10.2	106
Ma, Botong	SaBT14.6	137
Ma, Cheng	WeAT13.3	4
Ma, Heather Ting	WePoS-18.6	20
	ThBT13.1	CC
	ThBT13.1	48
	ThBT13.3	48
Ma, Ji	ThPoS-02.3	58
Ma, Jianjia	FrPoS-06.6	104
Ma, Jinxin	SaAT17.1	132
Ma, Ling	ThAT19.6	44
Ma, Manyou	FrCT5.6	97
Ma, Ming	WeBT3.1	7
Ma, Renfei	FrPoS-30.12	119
Ma, Weijian	ThPoS-14.4	65
Ma, Xiaohong	WePoS-13.4	17
Ma, Xiaojuan	SaBT7.5	136
Ma, Xuelin	ThPoS-08.2	61
Maaß, Marco	SaAT6.5	129
Mablekos-Alexiou, Anestis	ThPoS-03.8	59
Mabo, Philippe	SaBT20.4	139
Mabotuwana, Thusitha	WePoS-24.37	25
Mabrouk, Samer	ThBT4.4	46
Mabu, Shingo	ThBT19.2	50
Mabuchi, Kunihiro	WePoS-26.43	31
MacCormick, Ian J	SaDT5.5	146
Macdonald, Audrey	FrPoS-31.33	123
Machireddy, Archana	WePoS-16.8	19
Maciejasz, Pawel	SaCT1.4	139
Mack, David J.	FrAT6.1	83
MacKay, Scott	ThAT17.2	43
Mackey, Sean	WePoS-13.9	17
	ThAT3.4	39
	ThAT3.5	40
MacLean, Mhairi	ThPoS-25.46	80
Macyszyn, Luke	WePoS-21.4	21
Madej-Kietbik, Longina	WePoS-24.11	24
Madhavan, Mathangi	ThPoS-22.2	70
	FrPoS-24.5	112
Madi, Fatma	FrCT1.2	95
Madler, Ryan	SaCT1.6	140
Madrigal, Jonathan	SaBT18.5	138
Madrolle, Stéphanie	ThCT2.1	51
Madsen, James	SaBT18.5	138
Madsen, Kristoffer H.	WeAT20.5	6
	ThBT20.1	50
Maeda, Moe	FrBT12.2	92
Maeda, Ryutaro	ThPoS-23.46	75
Maeda, Taro	WePoS-26.24	30
Maeda, Tomohiro	SaCT17.2	144
Maeda, Yoshinobu	ThPoS-23.12	73
Maeda, Yuka	ThAT14.2	42
Maeder, Anthony John	ThAT19.1	44
	FrPoS-31.38	123
Maehara, Taketoshi	WePoS-24.39	25
	FrPoS-28.42	116
Maes, Pattie	SaBT4.3	135
	SaBT7.6	136
Maessen, Ralph	WePoS-27.27	33

Maffei, Vincenzo	WePoS-13.11	17
Magatani, Kazushige	ThPoS-23.49	75
Maggioni, Serena	ThPoS-02.8	58
Maghari, Nima	SaCT1.6	140
Magierowski, Sebastian	ThAT17.3	43
	FrPoS-17.2	109
	SaDT20.5	149
Magistro, Daniele	FrPoS-06.6	104
Magnenat-Thalmann, Nadia	WePoS-27.36	34
Magrassi, Lorenzo	WePoS-06.6	14
Mahadevappa, Manjunatha	ThCT9.4	54
	ThPoS-09.23	63
	FrCT8.2	98
	FrPoS-16.1	108
	SaBT2.3	134
	SaBT2.4	134
Mahamat, Hassan Adam	FrPoS-30.27	120
Mahapatra, Arindam Gajendra	FrCT2.4	96
Maharbiz, Michel	ThAT6.4	40
	ThPoS-01.7	58
	FrAT18.3	88
Mahdy, Dalia	ThPoS-01.1	58
Maher, Alexander S.	ThPoS-25.18	79
	ThPoS-25.19	79
Mahito, Noro	FrAT2.1	82
Mahmoudi, Babak	FrAT8.5	84
	FrBT11.3	92
	FrPoS-08.9	105
Mahmud, Marzana M.	FrCT5.4	97
Mahoor, Mohammad H.	SaAT7.1	129
Mahvash Mohammadi, Sara	FrCT6.6	97
Maia, Paulo	ThCT15.2	56
Maiken, Ueland	ThAT18.3	133
Maimon, Benjamin	WePoS-24.43	25
Mainardi, Luca	WePoS-06.6	14
	WePoS-19.5	20
	ThAT8.3	41
Maioni, Melissa	FrAT19.1	88
Maitland, Kristen	FrBT5.3	90
Maity, Shovan	FrCT18.4	101
	SaBT17.6	138
Majd, Sheereen	WePoS-29.12	38
	SaCT15.4	143
	ThCT9.5	54
	ThCT17.2	56
	FrBT4.1	C
	FrBT4.4	90
	FrBT4.6	90
	FrPoS-20.5	110
Majewicz, Ann	WePoS-23.10	23
	ThPoS-04.7	59
	ThPoS-05.8	60
Majid, Muhammad	WePoS-13.2	17
MajidiRad, AmirHossein	ThPoS-05.7	60
	FrBT13.6	93
Majumdar, Arjun	WePoS-13.10	17
Mak, Peng Un	FrPoS-03.1	103
Mak, Wing Chung Tony	FrPoS-12.7	107
Makaram, Navaneethakrishna	FrAT7.5	84
Makarov, Sergey	WeAT20.2	6
	WeAT20.4	6
	WeBT20.6	11
	ThAT20.1	44
	ThAT20.2	44
	ThAT20.3	44
	ThBT20.2	50
	SaAT8.3	129
	SaDT20.1	C
Makeig, Scott	WeBT2.3	7
Maki, Hayato	WePoS-24.44	25
	ThAT1.1	39
Maki, Niki	FrAT15.4	87

Makikawa, Masaaki	WePoS-26.45	31	Marcantoni, Ilaria	WePoS-10.1	16
	WePoS-28.39	37		SaAT13.3	131
	ThPoS-23.2	73		SaCT12.2	142
	FrPoS-31.27	122	Marchiori, Chiara	FrBT16.2	94
	FrPoS-31.28	122	Marcia, Roummel	ThCT5.3	52
	FrPoS-32.20	125	Mareels, Iven	ThPoS-21.12	70
	FrPoS-32.31	125	Margaret, Babikian	WeBT20.4	11
Makino, Taiki	FrPoS-32.36	126	Margarito, Jenny	SaDT12.1	147
Makita, Masujiro	WePoS-26.50	32	Marghi, Yeganeh M.	WeBT2.6	7
Makki Abadi, Bahador	WePoS-19.8	21		WePoS-27.48	34
Makowski, Nathaniel	WePoS-28.42	37	Mariani, Andrea	ThPoS-13.7	65
	ThPoS-25.39	80	Mariani, Sara	SaAT9.6	130
Maksymenko, Kostiantyn	ThPoS-25.9	78	Marinazzo, Daniele	ThAT12.5	42
Maldaner, Marcelo	FrPoS-04.3	103	Mariyanna, Shiva	FrPoS-10.2	106
Maldonado, Ivan	WePoS-25.47	28	Marjaninejad, Ali	ThPoS-04.1	59
Malhan, Rajesh	ThCT3.2	51		ThPoS-11.6	63
Malhotra, Atul	ThAT18.2	44	Marjanovic, Nicholas	FrPoS-28.40	116
Malik, Avinash	FrAT9.2	84	Mark, Roger	FrAT12.6	86
	SaAT12.1	130		FrPoS-10.4	106
Malik, Bilal	FrBT5.3	90	Marko, Pudas	ThPoS-25.3	78
Malinowska, Urszula	WePoS-03.4	12	Markopoulos, Ioannis	WePoS-26.3	29
Malliaras, George	SaAT8.5	129	Markoula, Sofia	FrCT2.2	96
Malouf, Gordon Joseph	FrPoS-20.4	110	Markovic, Dejan	FrPoS-30.40	120
Mals, Jeff	FrPoS-11.4	106	Marks, Leonard	ThPoS-26.3	81
Malthaner, Richard A.	SaAT3.4	128	Marnane, Liam	WePoS-04.2	13
Maludrottu, Stefano	ThAT4.1	40	Marques Marinho, Murilo	ThPoS-02.7	58
Mamori, Hiroya	ThCT6.2	52	Marquez, J. Sebastian	FrPoS-06.7	104
	ThCT6.4	52	Marshall, Stephen	WePoS-27.9	32
	ThCT6.5	53	Martel, Sylvain	ThCT17.6	57
	ThCT6.6	53	Martens, Julien	FrBT1.1	89
Mamou, Jonathan	SaBT3.5	134	Martens, Luc	ThPoS-14.1	65
Man, Hok Sum	ThPoS-16.12	67	Martianova, Ekaterina	ThCT17.6	57
Managuli, Ravi	ThBT15.1	C	Martin del Campo Vera, Roberto	FrPoS-30.18	119
	ThBT15.2	49	Martin Moraud, Eduardo	FrCT20.1	101
Manchanda, Rohit	SaCT19.6	144	Martin, Benoit	SaAT8.5	129
	SaCT20.1	145	Martin, Bryn	FrPoS-32.43	126
Mancini, Martina	FrBT6.4	90	Martin, Corby	WeAT10.2	3
Manda, Chatonda	SaDT5.5	146	Martin, Donel	ThBT20.4	50
Mandal, Mousumi	FrPoS-28.49	116	Martin, Robert C. G.	FrPoS-13.6	107
Mandal, Soumyajit	ThCT9.5	54	Martindale, Christine F.	SaBT19.2	139
Mandloi, Neeraj Kumar	FrCT1.5	95	Martines, Laura	ThPoS-25.11	79
Mandonnet, Emmanuel	ThPoS-14.12	65	Martinez Guerra, Andres	FrAT13.3	86
Mane, Ravikiran	FrCT11.3	99	Martinez Lorenzo, Jose A.	WePoS-16.12	19
Manffra, Elisangela F.	ThPoS-23.20	74		WePoS-17.5	20
	ThPoS-23.30	74	Martinez Madrid, Natividad	WeBT4.2	7
Mangharam, Rahul	FrPoS-03.4	103	Martinez Rosas, Lilia Elba	ThPoS-11.11	64
Mangiameli, Daniel	WePoS-24.31	25	Martinez, Kenia	ThPoS-25.16	79
Mangin, Jean-François	WePoS-18.4	20	Martinez-Camacho, Mauricio Arturo	SaDT9.5	147
Mani, Merry	WeAT9.1	3	Martinez-Millana, Antonio	SaCT18.2	144
Manini, Todd M.	FrPoS-32.46	126	Martins, Nelson	FrBT10.1	92
Mann, Brian	SaBT18.3	138		FrCT3.1	96
Manno, Francis AM	SaCT3.3	140		FrCT10.2	99
	SaCT3.4	140	Martirosian, Petros	ThCT7.2	53
Mannoji, Hiroshi	WePoS-25.10	26	Martucci, Katherine	WePoS-13.9	17
	WePoS-25.11	26	Marturano, Francesca	WePoS-05.5	14
	FrCT12.1	99	Maruhashi, Tatsuya	WePoS-29.10	38
Mano, Jumpei	FrCT12.1	99	Maruyama, Airi	ThPoS-24.22	76
Manring, Noah	ThPoS-17.1	67	Maruyama, Osamu	FrPoS-25.5	113
Mansfield, Karen	WePoS-27.48	34	Maruyama, Takuro	FrPoS-25.5	113
Manson, Roberto	SaBT18.3	138	Marzbani, Hengameh	ThPoS-21.7	70
Mansoor, Awais	FrBT10.5	92		ThPoS-21.8	70
Mansueto, David	FrCT10.6	99	Marziale, Leonardo	WeAT18.4	5
Manta, Ourania	FrPoS-09.3	105	Masamune, Ken	WePoS-24.17	24
Mante, Nii Tete	WeBT17.4	11	Masanthia, Kritsada	ThPoS-03.6	59
	FrCT6.4	97	Masatake, Arata	FrPoS-30.24	119
Mantini, Dante	ThAT4.2	40	Masato, Karube	WePoS-26.37	31
Manzan, Emiliano	ThAT4.1	40		FrPoS-32.34	126
Manzie, Chris	FrBT13.2	93	Mascaret, Quentin	WePoS-02.10	12
Manzouri, Farokh	ThPoS-15.4	66		FrAT7.4	84
Manzur, Doron	ThCT20.5	58	Mashford, Benjamin Scott	SaBT2.5	134
Mao, Chenfei	FrPoS-31.43	123	Masoller, Narcis	FrAT5.1	83
Mao, Jingna	FrCT18.6	101	Massacci, Alessandra	WePoS-10.1	16
Mao, Min	WePoS-16.10	19	Massachi, Jonathan	SaCT1.5	140
Mao, Rui	WePoS-22.9	22	Massaroni, Carlo	ThCT18.2	57
				FrAT17.2	87
				SaCT18.1	144

Massey, Kevin	FrCT3.3	96	Mazrouee, Sepideh	ThBT17.2	49
Massey, Travis	ThPoS-01.7	58	Mazur-Milecka, Magdalena	FrAT5.3	83
Massobrio, Paolo	ThPoS-25.11	79	Mazzocchi, Tommaso	WeAT18.4	5
Massot, Bertrand	SaBT17.2	138	Mazzoni, Alberto	WePoS-25.45	28
	SaDT4.4	146	McAdams, Eric	SaCT17.3	144
Mastinu, Enzo	ThPoS-12.6	64		SaDT4.4	146
	SaBT6.3	135	McAdams, Ian	ThCT17.2	56
Masuda, Yuichi	SaBT17.5	138		FrBT4.6	90
Masujima, Mariko	ThPoS-11.13	64	McBrearty, Michael	WePoS-27.13	32
Masuyama, Yuto	ThCT15.6	56		WePoS-27.28	33
Mathan, Santosh	WePoS-27.48	34	McCallum, Grant	WeAT17.2	5
Matharu, Zimple	WePoS-26.6	29	McConnell, Michael V.	FrPoS-01.1	102
Mathieson, Keith	WePoS-24.13	24	McCormack, Tony	WePoS-26.5	29
	ThBT6.1	46	McCormick, Matt	ThBT9.1	47
Mathieson, Sean	SaAT14.4	131	McCrimmon, Colin M	ThPoS-19.8	68
Matlock, Kevin	ThCT2.5	51	McCrory, Megan	SaCT16.4	143
Matran-Fernandez, Ana	ThPoS-12.6	64	McCulloch, Andrew	WePoS-14.2	17
Matsubara, Atsushi	ThPoS-09.24	63	McDaid, Andrew	ThPoS-01.4	58
Matsubara, Megumi	WePoS-27.39	34		ThPoS-02.2	58
Matsubara, Naoki	FrPoS-31.21	122	McDaniel, Jonathan	FrAT1.5	82
Matsuda, Fuka	WePoS-24.35	25	McDermott, Barry	FrAT20.6	89
Matsuda, Michiyuki	ThPoS-24.3	75	McDougall, Mary	ThCT7.4	53
Matsuda, Sachiko	WePoS-26.50	32	McDuff, Daniel Jonathan	ThAT8.1	CC
Matsuda, Tetsuya	WePoS-24.24	24		ThAT8.1	41
	ThPoS-23.8	73		ThAT8.5	41
	ThPoS-24.5	75		SaCT17.5	144
	FrBT16.3	94	McFarlane, Nicole	FrPoS-17.7	109
	FrPoS-26.5	113	McGinnis, Ellen	FrPoS-08.4	105
Matsui, Hiroyuki	FrPoS-32.48	126	McGinnis, Ryan S.	FrPoS-08.4	105
Matsui, Takemi	FrPoS-20.6	111	McGlothlin, Jenny	SaAT15.5	132
	SaBT14.3	137	McGrath, James	SaCT18.6	144
Matsukawa, Mami	WePoS-26.47	31	McGuire, Sarah	WeBT6.3	8
	WePoS-28.5	35	McKeegan, Paul Joseph	FrPoS-24.6	112
	FrPoS-15.10	108	McKindles, Ryan	WePoS-28.14	35
	FrPoS-32.36	126	McMurray, Justin	FrPoS-18.8	110
Matsumoto, Atsushi	WePoS-28.50	37	McNames, James	FrBT6.4	90
Matsumoto, Hirotaka	FrPoS-32.20	125	McQuade, Scott	FrPoS-08.8	105
Matsumoto, Keiji	FrPoS-32.35	126	Mediavilla Martinez, César	ThAT7.3	40
Matsumoto, Masanori	WePoS-26.37	31		ThAT7.4	41
Matsumoto, Yoshio	FrPoS-10.1	105	Mednikov, Yuval	FrAT3.4	82
Matsunaga, Kenichi	FrPoS-31.16	122	Medow, Joshua	FrCT4.4	97
Matsuoka, Masashi	FrAT7.1	84	Medved, Dennis	SaDT20.1	149
Matsuoka, Takayuki	FrBT12.3	93	Meena, Yogesh Kumar	FrBT19.5	95
Matsushiro, Naoki	FrAT11.6	85	Meffin, Hamish	SaAT7.2	129
Matsushita, Kensuke	ThPoS-11.9	63		SaAT7.3	129
Matsuura, Hirotaka	FrPoS-31.16	122	Megalooikonomou, Vasileios	FrAT3.2	82
Matteo, Marucci	SaAT2.5	127	Mehdinezhad, Mina	ThPoS-21.7	70
Matthew, Jacqueline	WePoS-17.2	19		ThPoS-21.15	70
	WePoS-22.4	22	Mehl, Adriano	WePoS-19.6	21
	ThBT9.2	47	Mehra, Prabhav	ThPoS-16.10	67
	ThBT9.6	47	Mehrang, Saeed	ThAT15.1	43
Matthew, Robert Peter	ThBT18.5	49		FrAT19.2	88
	ThCT12.5	55	Mehrotra, Sanjay	WeBT14.2	10
	ThPoS-01.6	58	Mei, Longzhi	ThAT10.1	41
	FrPoS-29.25	117		ThAT10.3	41
Mattia, Donatella	SaCT16.2	143		ThAT10.5	41
Mattila, Elina	ThPoS-05.4	60	Mei, Shenshen	FrBT7.2	91
Mattos, Leonardo	ThPoS-06.7	60	Mei, Zhanyong	SaAT17.6	132
	FrCT13.1	C	Mei, Zhenning	FrCT2.1	96
	FrCT13.3	100		SaBT2.1	134
Mattos, Sandra	FrCT10.2	99	Meintjes, Andries	WePoS-07.2	15
Maturana-Candelas, Aarón	WePoS-03.6	12	Meisel, Karl	WePoS-28.36	36
Mauger, Charlène Alice	WePoS-14.2	17	Mejía Ávila, Mayra	ThCT18.3	57
Mauri, Maurizio	WePoS-06.6	14	Mekada, Yoshito	ThBT19.7	50
May, Clive	ThBT1.5	45	Melendez-Calderon, Alejandro	ThPoS-02.8	58
	FrBT8.5	91	Melinda, Pfeiffer	SaAT19.5	133
May, Elebeoba	ThPoS-18.3	68	Melissa J., Walker	SaBT18.4	138
	ThPoS-18.5	68	Mellone, Sabato	FrPoS-28.20	115
Mayberg, Helen	SaCT16.5	143	Melvin, Charles	WePoS-20.4	21
Mayer, Chantal	FrCT5.6	97	Memedi, Mevludin	SaBT19.1	139
Mayor Torres, Juan Manuel	WePoS-05.10	14	Menciassi, Arianna	WeAT18.1	CC
Mayoral, Fermin, Fermin	WePoS-24.12	24		WeAT18.3	5
Maysam, Alimohamadi	WePoS-19.8	21		WeAT18.4	5
Mazaheri Kouhani, Mohammad Hossein	FrCT1.2	95		FrCT13.2	100
Mazar, Scott	FrCT14.2	100		SaCT14.2	143
Mazefsky, Carla	SaCT16.1	143		SaCT14.4	143



Mendes, Diana	FrBT16.4	94	Mikkelsen, Kaare	ThBT8.6	47
Mendes, Jason	WeAT9.2	3	Mikolaitis, Lora	WePoS-24.36	25
Méndez Abad, Dilio José	SaDT7.1	147	Mikolaizak, A. Stefanie	FrPoS-28.20	115
Mendez, Sergio	WePoS-28.8	35	Milbreta, Ulla	FrPoS-15.5	108
Meneo, Marco	SaCT18.1	144	Miled, Amine	ThAT17.1	C
Meneses-Peñaloza, Alicia	WePoS-28.32	36		ThAT17.5	43
Meng, Ellis	ThAT6.1	40		FrPoS-02.8	102
	ThPoS-24.26	77	Millán, José del R.	ThPoS-09.6	62
	ThPoS-24.32	77		SaAT5.3	128
	SaAT1.6	127	Millenaar, Jason	ThPoS-22.3	70
Meng, Fanqing	FrBT10.2	92	Miller, Aaron	FrBT11.5	92
Meng, Kevin	SaAT7.2	129	Miller, Lee	SaCT18.4	144
Meng, Max Q.-H.	ThPoS-05.3	60	Milo, Austin	WePoS-28.8	35
	FrCT10.5	99	Milosevic, Luka	WeBT7.4	8
Meng, Yu	WeBT12.3	9	Milosevic, Matija	WeBT7.1	C
Meng, Yuan	FrPoS-31.31	123		WeBT7.3	8
Meng, Zhigang	WePoS-21.9	22	Milosevic, Mladen	FrPoS-28.9	114
Meng, Zhu	SaDT3.1	145	Min, Cheol-Hong	FrBT18.5	94
Meng, Ziyu	ThBT13.2	48	Min, James	WePoS-27.31	33
	ThBT13.4	48		SaAT15.1	131
Menychtas, Dimitrios	ThPoS-13.4	64	Min, Jung-Joon	WeAT11.1	C
Mercado, Luis	ThPoS-19.1	68		WeAT11.2	4
Mergenthal, Adam	ThCT8.6	53	Min, Kyou Sik	ThPoS-24.23	76
Meriaudeau, Fabrice	WePoS-16.5	19		ThPoS-24.50	78
	ThCT14.2	55	Min, Xiaoyi	ThBT17.1	49
	FrAT10.1	85		ThPoS-11.1	63
Merino, Beatriz	FrPoS-10.6	106		ThPoS-22.20	71
Merino, Ruby	WeAT1.4	1	Minaee, Shervin	ThCT3.4	51
Meroni, Davide	SaBT14.1	137	Minagawa, Tadanori	FrBT12.3	93
Mertes, Gert	SaCT4.4	141	Minagawa, Yasuyo	SaAT5.4	128
Mertins, Alfred	SaAT6.5	129	Minami, Shigenobi	ThPoS-22.47	72
Merunka, Ilya	SaBT17.3	138	Minamisawa, Susumu	ThPoS-24.7	76
Messner, Elmar	WePoS-05.9	14	Minemura, Kohei	ThPoS-23.5	73
Metcalfe, Benjamin William	FrBT1.4	89		ThPoS-23.6	73
Metcalfe, Ralph	FrPoS-25.3	112		ThPoS-24.35	77
Metwally, Ahmed	WePoS-29.7	37		ThPoS-25.45	80
Meunier, Jean	WePoS-28.46	37	Mines, Robert Carl	SaAT20.1	133
	ThPoS-23.17	73	Mineyama, Ryo	WePoS-28.6	35
	FrAT10.2	85	Ming, Dong	WePoS-02.3	12
Meurer, Thomas	WePoS-01.1	11		WePoS-03.5	12
Miao, Fen	FrPoS-11.8	106		ThPoS-08.3	61
	SaBT16.4	138		ThPoS-09.1	61
Miao, Shida	FrPoS-32.44	126		FrAT1.1	82
Micera, Silvestro	WePoS-25.45	28		FrCT6.1	97
	ThBT1.1	C	Minna, Isomursu	FrPoS-11.1	106
	ThPoS-25.29	80	Mino, Hiroyuki	WePoS-26.39	31
	FrPoS-31.24	122		WePoS-28.24	36
Michalis, Lampros	WePoS-22.7	22	Miosso, Cristiano	SaCT5.2	141
	FrPoS-27.6	113	Mirab, Fereshtehsadat	WePoS-29.12	38
	SaDT16.5	148	Miran, Sina	WeAT2.1	1
Michel, Bruno	WePoS-28.40	37	Miranda, Jose Garcia Vivas	FrAT14.4	86
	FrPoS-32.35	126	Miranda-Escalada, Antonio	FrAT4.1	83
Michelena, Toby	WeBT12.3	9	Mirbagheri, Alireza	ThPoS-21.6	69
Miehlbradt, Jenifer	ThPoS-25.29	80	Mirbagheri, Mehdi	ThPoS-14.14	65
Mieloszyk, Rebecca	FrPoS-28.2	114		ThPoS-21.6	69
	SaBT12.4	136		ThPoS-21.7	70
Mierzwa, Andrzej	FrPoS-21.4	111		ThPoS-21.8	70
	FrPoS-30.1	118		ThPoS-21.9	70
Mignot, Emmanuel	WePoS-29.18	38		ThPoS-21.15	70
	FrCT16.4	101	Mirelman, Anat	ThBT8.4	47
	FrPoS-28.33	115	Miriam, Vos	WePoS-20.2	21
Mihailidis, Alex	FrBT19.4	95	Miriyala, Srinivas Soumitri	SaAT20.6	133
	FrPoS-22.7	111	Miró, Rafael	FrPoS-13.1	107
Mihara, Satoko	FrPoS-32.26	125		SaDT20.3	149
	FrPoS-32.28	125	Mirza, Farhaan	FrPoS-23.3	112
Mihaylova, Lyudmila	ThPoS-09.18	62	Mirzadeh, Zaman	FrPoS-30.28	120
Mikawa, Tsutomu	FrPoS-32.48	126	Misawa, Nobuo	FrPoS-24.9	112
Mikhailov, Andrey	SaBT15.2	137	Mishra, Aarshee	SaBT18.1	138
Mikhelson, Ilya	WeBT14.2	10	Mishra, Parth	FrCT9.1	98
Miki, Norihisa	WePoS-28.1	34	Miskov-Zivanov, Natasa	SaAT20.3	133
	FrPoS-02.4	102	Misteli, Tom	SaBT15.6	138
	FrPoS-24.9	112	Mitchell, Ron	FrPoS-11.5	106
	SaAT4.4	128	Mitchell, Steven	FrPoS-20.5	110
	SaAT5.4	128	Mito, Akihisa	FrPoS-19.3	110
	SaCT15.6	143	Mitobe, Kazutaka	WePoS-25.38	28
	SaCT18.5	144			

Mitoma, Hiroshi	WePoS-24.28	25	Mok, Kelvin	WePoS-19.10	21
	WePoS-25.37	28	Mokwa, Wilfried	ThPoS-23.7	73
Mitra, Kaushik	FrAT10.4	85	Molinaro, Nunzia	FrAT17.2	87
Mitra, Kishalay	WePoS-20.5	21	Molkari, Matti	ThPoS-24.30	77
	SaAT20.6	133	Mollakazemi, Mohammad Javad	ThPoS-19.2	68
Mitrani, Sorin	SaCT18.3	144		FrAT12.4	86
Mitsis, Georgios D.	WeAT2.1	CC	Möller, Harald	WeAT20.1	6
	ThAT2.1	C	Molly, Split	FrBT19.1	94
	ThAT2.5	39	Momeni, Kamyar	FrAT13.2	86
	ThAT2.6	39		FrAT13.5	86
	SaAT7.1	C	Momoi, Emi	WePoS-25.28	27
Mitsis, Michael	ThCT5.2	52	Momose, Keiko	WePoS-27.2	32
Mitsuishi, Mamoru	ThPoS-02.7	58	Monno, Yusuke	SaCT12.1	142
Mitsuyoshi, Shunji	WePoS-24.28	25	Monsalve, Emyrna	FrPoS-31.9	121
	WePoS-24.49	26	Montalibet, Amalric	SaCT17.3	144
	WePoS-25.6	26		SaDT4.4	146
	WePoS-25.9	26	Montalvá Colomer, Juan Bautista	FrPoS-31.4	121
	WePoS-25.37	28	Montanaro, Hazael	WePoS-25.46	28
Mittal, Yash	FrPoS-31.46	123	Montazeri, Leila	SaDT5.4	146
Mitnacht, Annette	SaAT1.5	127	Montes III, Elliot J.	WeBT15.2	10
Mitwally, Mohamed	ThPoS-03.3	59	Montin, Eros	WePoS-19.5	20
Miura, Makoto	FrBT12.3	93	Montoya, Fernando	WePoS-26.1	29
Miura, Satoshi	WeBT12.2	9	Moon, Chanki	FrPoS-32.42	126
	WePoS-06.1	14	Moon, Chihō	WePoS-25.28	27
Miyagawa, Makoto	WePoS-14.3	18	Moon, Cho-I	ThPoS-23.1	73
Miyagawa, Takuya	FrAT14.6	87		ThPoS-23.10	73
Miyahara, Satoshi	ThPoS-25.28	80		FrPoS-31.13	122
	FrPoS-29.9	117	Moon, Hyunsik	ThPoS-21.3	69
Miyahara, Yuji	WePoS-29.2	37	Moon, Il Joon	WePoS-26.29	30
	FrAT14.6	87		WePoS-26.31	31
Miyajima, Miho	WePoS-24.39	25	Moon, Jin-hee	ThPoS-24.41	77
	FrPoS-28.42	116	Moon, Jon	FrAT19.3	88
Miyake, Tamon	ThPoS-01.2	58	Moontaha, Sidratul	WePoS-01.1	11
	ThPoS-07.7	61	Moore, Michael	WeBT3.4	7
Miyamoto, Satoshi	FrPoS-23.1	112	Moore, Roger	ThPoS-09.5	62
Miyamoto, Tadayoshi	FrCT12.1	99	Mora, Jason	SaCT19.3	144
Miyamoto, Tsutomu	ThPoS-22.47	72	Moradi Birgani, Parmida	ThPoS-21.8	70
Miyashita, Mitsuhiro	ThAT19.3	44	Morais, João	FrBT16.4	94
Miyashita, Tomoyuki	WeBT12.2	9	Morales, Anibal	FrPoS-31.8	121
	WePoS-06.1	14	Moran, Steven	WePoS-21.4	21
Miyata, Chika	ThPoS-23.2	73	Morand, Marion	FrPoS-12.1	107
Miyatani, Shota	SaAT19.6	133	Morandini, Pierandrea	FrAT12.6	86
Miyoshi, Toshinori	WePoS-25.14	27	Moraru, Ion	FrPoS-28.5	114
Mizoguchi, Hiroshi	FrPoS-29.31	118	Morató, Sergio	FrPoS-13.1	107
Mizoguchi, Hiroto	ThPoS-11.5	63		SaDT20.3	149
Mizukami, Naoto	ThPoS-11.5	63	Moreau-Gaudry, Alexandre	FrPoS-17.4	109
Mizuno, Jumpei	WePoS-29.9	38	Morecraft, Robert	ThPoS-25.10	79
Mizutani, Koichi	ThAT14.2	42	Moreira, Gabrielly	ThPoS-23.20	74
Mizzi, Anabelle	FrPoS-07.2	104	Morettini, Micaela	WePoS-10.1	16
Mizzi, Stephen	FrPoS-07.2	104		SaAT13.3	131
Mochida, Takumi	SaAT4.1	128		SaCT12.2	142
Moco, Andreia	ThAT8.2	41	Morgan, Jeffrey A.	FrPoS-25.4	112
	SaBT4.2	135	Morgan, Kristin	ThPoS-01.5	58
	SaDT4.3	146	Mori, Ryosuke	WePoS-26.39	31
Modre, Robert	ThCT14.3	55	Mori, Shunki	FrPoS-32.36	126
Modur, Pradeep	ThAT1.4	39	Mori, Taketoshi	ThPoS-24.8	76
Moghadam, Rod	ThCT18.6	57		ThPoS-25.32	80
Mogul, David	ThPoS-15.3	66		FrPoS-20.7	111
	ThPoS-19.3	68		FrPoS-29.13	117
Mohamed-Rida, Benissa	WePoS-25.8	26	Mori, Yukio	WePoS-24.45	26
Mohammadi, Alireza	ThPoS-12.5	64	Morikawa, Akira	ThPoS-23.35	74
	FrPoS-29.30	118	Morimoto, Jun	ThCT12.4	55
Mohammadi, Arash	SaAT2.1	127	Morin Castillo, María Monserrat	ThCT2.6	51
Mohammadifar, Maedeh	SaDT15.2	148	Morin, Evelyn	SaCT9.4	142
Mohammadzadeh, Farrokh	WePoS-08.2	15	Morita, Junichi	SaCT17.2	144
Mohammed, Saqib, Mohammed Saqib	FrPoS-09.7	105	Moriwaki, Kenta	SaCT12.1	142
Mohan, Akhil	ThPoS-25.23	79	Morley, John William	ThBT6.3	46
Mohan, Ananda	FrPoS-24.2	112		ThBT6.6	46
Mohan, Chandra	WePoS-21.1	21		ThPoS-14.21	66
Mohan, Suyash	ThCT20.1	57		SaCT1.2	139
Mohapatra, Ankita	FrPoS-17.6	109	Moro Velazquez, Laureano	ThCT9.2	54
Mohiaddin, Raad	ThBT3.5	45	Morris, Dan	FrPoS-31.33	123
Mohiuddin, Muhammad	FrPoS-32.44	126	Morrison, Tina M.	WeAT20.6	6
Mohrekeesh, Majid	WeAT3.5	2	Morshead, Cindi	WeBT7.1	8
	WeAT3.6	2		WePoS-28.44	37
	ThCT3.6	51			



Nagaya, Midori	ThPoS-24.22	76	Nakanishi, Kana	SaBT12.2	136
Naghavi, Nader	FrPoS-29.12	117	Nakanishi, Masaki	WeBT1.5	6
Nagle, Tara	WePoS-23.3	23		ThPoS-09.10	62
Nagra, Simerjit	ThCT13.6	55		SaAT11.4	130
Nagumo, Haruno	ThPoS-07.7	61	Nakano, Akimasa	ThPoS-25.21	79
Nair, Achuth	WePoS-21.1	21	Nakano, Kazuya	FrPoS-28.46	116
Naito, Hisashi	WePoS-25.1	26	Nakano, Masayuki	WePoS-25.32	28
Naiwala Pathirannehelage, Madhuka	WeAT4.1	2		WePoS-26.30	30
	SaDT12.2	147	Nakao, Masayuki	WePoS-25.7	26
	SaDT12.5	147		ThBT1.2	44
Najafiaghdam, Hossein	FrBT5.2	90	Nakao, Megumi	WePoS-24.24	24
Najafizadeh, Laleh	ThPoS-08.7	61		ThPoS-23.8	73
	ThPoS-25.34	80		ThPoS-24.5	75
Najafzadeh, Ebrahim	WePoS-19.8	21		FrBT16.3	94
Najarian, Kayvan	WeAT3.2	1	Nakashima, Hiroshi	FrPoS-31.16	122
	WeAT3.5	2	Nakashima, Naoki	FrPoS-09.8	105
	WeAT3.6	2	Nakashima, Yoshiaki	ThPoS-23.31	74
	WeBT3.3	7	Nakata, Makiko	FrPoS-32.22	125
	WePoS-11.6	16	Nakaya, Naofumi	WePoS-24.45	26
	WePoS-16.10	19	Nakayama, Hideki	FrPoS-32.26	125
	WePoS-19.9	21		FrPoS-32.28	125
	ThCT3.2	51	Nakayama, Yuri	WePoS-29.9	38
	ThCT3.6	51	Nakazawa, Kimitaka	WeBT7.2	8
	FrCT3.4	96	Nallathambi, Gabriel	ThBT17.6	49
	FrPoS-09.6	105		ThCT18.1	CC
	SaBT5.3	135		ThCT18.6	57
	SaCT7.6	142	Nam, Andrew	FrAT18.3	88
	SaDT3.5	145	Nam, Chang S.	WePoS-08.2	15
Naji, Mohammed	WeBT14.1	10	Nam, Hyosuk	WePoS-29.20	38
Naka, Katerina	FrPoS-04.2	103		FrPoS-29.35	118
Nakagami, Gojiro	ThPoS-25.32	80	Nam, Sung Hyun	ThCT15.1	56
	FrPoS-20.7	111	Nam, Yoonkey	ThPoS-26.11	81
Nakagawa, Arata	FrPoS-31.1	121		FrPoS-31.12	122
Nakagawa, Hiroshi	ThPoS-11.9	63	Nam, Yunyoung	WePoS-27.4	32
Nakagawa, Seiji	WePoS-26.14	29		FrPoS-32.42	126
	ThBT1.3	45	Namadurai, Punitha	FrAT7.6	84
	ThPoS-09.4	62	Nambu, Masayuki	FrPoS-31.29	123
	ThPoS-14.9	65	Namiri, Nikan	FrPoS-28.41	116
	FrPoS-32.30	125	Namkoong, Kak	WePoS-24.48	26
	SaDT6.2	146		WePoS-26.13	29
Nakajima, Hiroshi	FrPoS-30.17	119	Nanayakkara, Nuwan Dayananda	FrAT10.5	85
Nakajima, Hiroyuki	FrBT12.3	93	Nanayakkara, Thrishantha	ThPoS-13.5	64
Nakajima, Kazuki	WePoS-24.34	25	Nano, Marina-Marinela	ThCT11.2	54
	FrPoS-30.30	120	Narasimhan, Ravi	FrPoS-01.1	102
	FrPoS-31.1	121	Narayanan, J. Shankara	FrAT18.1	88
	FrPoS-31.2	121	Narayanan, Shrikanth	WePoS-04.8	13
	FrPoS-31.14	122	Narazaki, Hiroshi	WePoS-27.47	34
	FrPoS-31.20	122	Nardelli, Mimma	WePoS-06.4	14
	FrPoS-32.7	124		WePoS-10.7	16
Nakamoto, Hiroyuki	ThPoS-26.1	81		WePoS-11.5	16
	FrPoS-31.19	122		FrBT7.6	91
Nakamura, Ayano	WePoS-26.45	31		SaAT2.3	127
Nakamura, Hajime	SaCT17.4	144	Naruse, Yasushi	WePoS-26.24	30
Nakamura, Hideo	WePoS-25.48	29		WePoS-26.25	30
	WePoS-28.18	35		WePoS-28.50	37
	FrPoS-28.48	116		FrPoS-30.17	119
Nakamura, Keijiro	FrAT2.1	82	Nasongkla, Norased	FrPoS-15.9	108
Nakamura, Mitsuhiro	WePoS-24.24	24	NasrEsfahani, Ebrahim	WeAT3.6	2
Nakamura, Mitsuteru	WePoS-24.28	25		ThCT3.6	51
	WePoS-24.49	26	Nasr-Esfahani, Mina	ThCT3.6	51
	WePoS-25.6	26	Natarajan, Balasubramaniam	ThPoS-09.11	62
	WePoS-25.9	26		FrPoS-19.7	110
	WePoS-25.37	28	Natarajan, Keerthana	WeBT14.1	10
Nakamura, Naofumi	FrAT14.6	87		FrPoS-31.30	123
Nakamura, Ryoichi	WePoS-29.14	38	Natarajan, Shyam	ThPoS-26.3	81
	ThPoS-25.44	80	Natsuko, Itai	WePoS-28.5	35
	ThPoS-26.9	81	Nau, Amy C.	SaCT3.1	140
Nakamura, Ryuji	FrPoS-19.3	110	Naulaers, Gunnar	WeAT1.1	1
Nakamura, Seigo	WePoS-26.50	32	Navab, Nassir	FrPoS-10.5	106
Nakamura, Sho	FrPoS-28.30	115	Nava-Guerra, Leonardo	ThAT18.3	44
Nakamura, Sunao	FrBT12.4	93	Navarro de Lara, Lucia Isabel	WeAT20.4	6
	FrPoS-28.37	116		ThAT20.1	44
Nakamura, Takahiro	FrPoS-30.32	120		SaAT8.3	129
Nakamura, Tatsuo	ThPoS-22.11	71	Navarro, Benjamin	SaBT1.2	134
	FrPoS-30.24	119	Naveh, Ariel	ThCT20.5	58
	FrPoS-30.46	121	Nazareth, Ginelle Claire	SaBT4.6	135

Nazari, Behzad	ThPoS-17.4	68	Nguyen, Trung	ThPoS-23.45	75
	SaAT7.4	129		ThPoS-26.10	81
Nazarian, Ara	WeBT20.4	11		FrPoS-15.3	108
	WeBT20.5	11		FrPoS-28.28	115
Nazarpour, Kianoush	ThCT1.3	51	Nhat-Long, Pham	FrCT16.3	101
	ThPoS-12.2	64	Ni, Hao	ThBT3.5	45
	ThPoS-12.3	64	Niazi, Imran Khan	SaBT9.2	136
	ThPoS-12.4	64	Nicholas, Jennifer	WeAT8.5	3
	ThPoS-20.1	69	Nicholson-Smith, Chloë	SaAT3.4	128
	ThPoS-20.3	69	Nickerson, David Phillip	FrPoS-28.5	114
	FrAT8.2	84	Nickerson, Paul	FrPoS-11.7	106
	FrCT20.2	101	Niclas, Palmius	WeAT8.3	3
	FrCT20.3	101	Nicola, Mastronicola	FrPoS-31.24	122
Nazib, Abdullah	WePoS-13.6	17	Nicolai, Evan	WeBT5.2	8
Nedrud, Joshua	SaAT7.1	129	Nicolas, Rey	ThCT15.5	56
Nef, Tobias	FrCT6.3	97	Nicolau Torra, Anna	FrPoS-04.6	103
	SaAT14.5	131	Nicolin, Alexandru I.	WePoS-26.3	29
Negahdar, MJ	ThCT7.6	53	Niederberger, Craig	WePoS-29.8	37
Negishi, Shouji	WePoS-25.14	27	Nielsen, Jesper D.	WeAT20.5	6
Negishi, Toshiaki	FrPoS-20.6	111		ThBT20.1	50
Negrea, Aurelian Denis	WePoS-25.6	26	Nielsen, Thomas Nørgaard	FrBT1.4	89
	WePoS-25.9	26	Nieminen, Hannu	FrAT19.2	88
Nehemia, Sapir	FrAT3.4	82	Nieminen, Miika Tapio	WePoS-26.46	31
Nehorai, Arye	SaDT2.5	145		ThPoS-24.10	76
Nelson, Bradley	ThPoS-24.15	76		ThPoS-24.20	76
Nelson, Leonard Y.	FrCT17.4	101	Niemi, Timo	ThCT14.4	55
Nelson, Zachariah	ThPoS-21.10	70	Nihei, Misato	WePoS-29.9	38
Nemati, Shamim	FrBT16.5	94		ThPoS-11.9	63
	FrPoS-10.4	106	Niikawa, Takuya	WePoS-24.38	25
	FrPoS-11.4	106		WePoS-25.44	28
	SaAT16.3	132	Niizeki, Kyuichi	SaBT12.2	136
	SaCT16.5	143	Nikita, Konstantina	WePoS-28.20	35
Nematollahi, Iman	ThPoS-15.4	66		FrAT5.2	83
Nemeth, Daniel	SaCT19.3	144	Nikolaeva, Ksenia	WePoS-17.6	20
Nemeth, Sheila	SaDT5.5	146	Nikolaou, Foivia	ThAT2.5	39
Nemoto, Yusuke	ThPoS-01.3	58	Nikolic, Konstantin	ThPoS-14.13	65
Nenadic, Zoran	ThPoS-19.8	68	Nikolopoulos, Spiros	WePoS-02.2	12
	FrCT11.6	99	Nikpour, Armin	ThPoS-25.12	79
	SaAT8.2	129	Nilakantan, Aneesha	WePoS-13.9	17
Nenadovic, Miljana	FrBT4.5	90	Nilsson, Johan	SaDT20.1	149
Nerheim, Max	ThPoS-14.18	66	Nilsson, Simon	SaAT6.4	129
Ness, Jared P.	SaAT8.4	129	Ning, Taikang	FrBT7.5	91
Ness, Torbjørn V	ThAT1.6	39	Ning, YunKun	FrPoS-22.1	111
Neufeld, Esra	WePoS-25.46	28	Niola, Raffaella	SaCT18.1	144
Neumann, Erica	WePoS-23.3	23	Nishi, Eri	WePoS-24.38	25
Neves, Eduardo Borba	WePoS-19.7	21	Nishi, Kazuhiko	WePoS-25.7	26
Newton, Julia	FrPoS-31.33	123	Nishifuji, Seiji	ThPoS-09.24	63
Nezamfar, Hooman	WePoS-05.13	14	Nishii, Jun	ThPoS-24.33	77
Nezu, Toshikazu	ThPoS-22.22	71		ThPoS-24.44	78
Ng, Bennett	WeAT10.3	3	Nishikawa, Atsushi	ThPoS-22.11	71
Ng, Gabriel	FrPoS-04.5	103		ThPoS-23.19	74
Ng, Marcus	ThPoS-22.9	70		FrPoS-30.24	119
	FrPoS-30.16	119		FrPoS-30.46	121
Ng, Soon Huat	FrAT2.4	82	Nishikawa, Takuya	WePoS-25.10	26
Ng, Wai Hoe	ThBT1.6	45		WePoS-25.11	26
	ThPoS-09.16	62	Nishimura, Fumiaki	ThPoS-22.11	71
Ngo, Cuong Q.	FrPoS-03.2	103	Nishimura, Kurtis	WeAT17.3	5
Ngufor, Che	SaDT16.6	148	Nishimura, Masaomi	FrPoS-12.6	107
Nguyen, An	WePoS-11.6	16	Nishino, Atsushi	SaBT7.4	136
Nguyen, Christina	SaAT17.4	132		SaBT7.5	136
Nguyen, Harrison	FrPoS-06.3	104	Nishioji, Kenichi	WePoS-27.7	32
Nguyen, Hung T.	ThBT2.1	C	Nishiura, Yuko	WePoS-29.9	38
	FrAT2.1	C	Nishizawa, Yuji	ThPoS-22.11	71
	FrAT17.3	87		FrPoS-30.24	119
	FrBT6.2	90		FrPoS-30.46	121
	FrPoS-03.2	103	Niso, Guiomar	ThAT2.6	39
Nguyen, Khoa D.	ThBT2.5	45	Nittayacharn, Pinunta	FrPoS-15.9	108
Nguyen, Kien	WePoS-05.3	14	Niu, Chuanxin M.	ThPoS-15.11	67
	FrCT10.1	99		FrCT8.5	98
Nguyen, Kim Tien	ThCT13.1	55		SaBT6.6	135
Nguyen, Kristen	FrPoS-21.4	111	Niwayama, Masatsugu	FrPoS-28.1	114
	FrPoS-30.1	118		FrPoS-28.4	114
Nguyen, Nhan	SaCT17.6	144	Niyonambaza, Shimwe Dominique	ThAT17.5	43
Nguyen, Thang Tat	WeBT20.1	11		FrPoS-02.8	102
Nguyen, Thi Nhu Lan	FrAT17.3	87	Nizami, Shermeen	ThCT19.6	57
	FrBT6.2	90		FrAT19.4	88

NK, Kausthubha	ThCT9.1	53
Noble, J Alison	ThBT3.6	45
	FrBT10.6	92
Nochino, Teruaki	FrPoS-31.28	122
	FrPoS-32.31	125
Noda, Akihito	SaBT17.5	138
Noda, Toshihiko	FrPoS-31.47	124
Noda, Yuki	ThPoS-22.22	71
Noetscher, Gregory	WeAT20.2	6
	WeBT20.6	11
	ThAT20.2	44
	ThAT20.3	44
	ThBT20.2	50
Noga, Michelle	WePoS-22.8	22
	ThBT3.4	45
	SaDT3.6	145
Nogawa, Masamichi	WePoS-25.1	26
Noguchi, Hiroshi	ThPoS-24.8	76
	ThPoS-25.32	80
	FrPoS-20.7	111
	FrPoS-29.13	117
Noh, Hyung Wook	WePoS-28.9	35
	ThPoS-24.13	76
	FrPoS-30.31	120
Noh, Kyungchul	ThPoS-23.43	75
Noh, Seungwoo	WePoS-10.2	16
Noh, SiHyeong	ThPoS-23.25	74
Noh, Soo Rim	WePoS-25.16	27
	WePoS-27.35	33
Noh, Yeon Sik	ThCT4.4	52
Nohama, Percy	ThPoS-23.20	74
	ThPoS-23.30	74
Nohara, Yasunobu	FrPoS-09.8	105
Nolan, Karen J.	ThPoS-24.1	75
	FrAT13.6	86
	SaCT6.3	141
Nolan, Michael	WePoS-28.14	35
Nollo, Giandomenico	ThAT12.4	42
Nonte, Michael	WePoS-27.13	32
	WePoS-27.28	33
	FrBT18.2	94
Noor, Abdul	FrAT8.1	84
Noormohammadi Khiaarak, Mehdi	ThCT17.6	57
Nordin, Andrew D.	ThAT16.2	43
Norgaard, Skyler	ThBT17.3	49
	ThBT18.4	49
Noro, Tsuyoshi	FrPoS-32.7	124
Noroozi, Babak	SaAT4.2	128
Northrup, Hope	FrBT9.6	92
Nosakhare, Ehimwenma	WeAT12.4	4
Nosato, Hirokazu	WePoS-27.24	33
Nöth, Elmar	ThCT9.2	54
Nouri Mahdavi, kouros	SaDT5.3	146
Nourian, Ruhollah	ThPoS-21.15	70
Novak, Domen	ThPoS-03.1	59
	FrCT11.1	99
Novello, Joseph	SaAT8.4	129
Nowak, Michael	WePoS-13.7	17
	SaBT5.2	135
Noyori, Shuhei	FrPoS-20.7	111
	FrPoS-29.13	117
Nozaki, Yuki	WePoS-24.49	26
Nozawa, Kento	FrAT6.6	84
Nozawa, Tatsuya	SaCT6.6	141
Nudo, Randolph	FrBT8.2	91
Nugues, Pierre	SaDT20.1	149
Nummenmaa, Aapo	WeAT20.4	6
	ThAT20.1	44
	ThAT20.2	44
	ThBT20.2	50
	SaAT8.3	129
Nunes, Diogo	FrPoS-09.5	105
Nunez, Michael Dawson	FrBT9.6	92
Núñez, Pablo	WePoS-03.6	12
Nurkesh, Ayan A.	FrPoS-15.4	108

Nurmikko, Arto	WePoS-28.48	37
	ThBT1.4	45
	ThPoS-25.3	78
	ThPoS-25.38	80
	FrPoS-29.19	117
Nutt, John	FrBT6.4	90
Nyayapathi, Nikhila	WeAT13.1	4
Nygren, Anders	ThPoS-17.6	68
Nze, Ugochukwu	WePoS-28.4	35

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Obara, Yuuya	ThPoS-04.8	60
Obeid, Rawad	FrBT10.5	92
O'Brien, Terence	FrCT2.5	96
	SaDT16.4	148
Ochoa, Jose Mauricio	ThPoS-01.8	58
Oda, Nozomu	WePoS-29.10	38
O'Dea, Bridianne	WeAT8.2	3
O'Donnell, Johanna	SaDT16.1	148
O'Dwyer, John	ThCT16.5	56
Oesterlein, Tobias	WePoS-10.5	16
Oetomo, Denny	ThPoS-12.5	64
	ThPoS-21.2	69
	ThPoS-21.12	70
	FrBT13.2	93
	FrPoS-29.30	118
Ofek, Eyal	FrCT17.2	101
Oftadeh, Ramin	WeBT20.5	11
Ogasawara, Takayuki	FrPoS-31.16	122
Ogasawara, Tsukasa	ThPoS-03.6	59
Ogata, Kunihiro	FrPoS-10.1	105
Ogata, Toru	FrPoS-28.24	115
Ogata, Yousuke	WePoS-25.33	28
	ThPoS-25.26	79
Ogatsu, Toshinobu	SaBT7.4	136
Ogawa, Kazunori	ThPoS-01.3	58
	FrPoS-21.2	111
Ogawa, Mitsuhiro	WePoS-25.1	26
Ogawa, Takeshi	ThPoS-24.16	76
Ogawa, Takuya	FrPoS-32.41	126
Ogier, Stephen	ThCT7.5	53
Ogino, Koji	ThPoS-24.22	76
Ogino, Riki	ThPoS-14.9	65
Ogishi, Yudai	ThPoS-24.2	75
Ogohara, Kazunori	ThAT19.3	44
Ogura, Yumi	FrPoS-19.3	110
Oguri, Koji	FrAT16.6	87
Oh, Byungho	ThPoS-23.41	75
Oh, Chaerin	WePoS-26.28	30
Oh, Jaehoon	ThPoS-25.48	81
Oh, Min Tack	SaDT14.6	148
Oh, Sang-Rok	ThPoS-04.6	59
Oh, Sehoon	ThPoS-07.8	61
Oh, Seok	ThPoS-23.45	75
	ThPoS-26.10	81
	FrPoS-15.3	108
	FrPoS-28.28	115
Oh, Seung Ha	ThPoS-24.9	76
	ThPoS-24.23	76
Oh, Sung Min	WePoS-24.30	25
Oh, Tong In	WeAT4.2	2
	WePoS-28.3	34
	ThBT4.3	46
Oh, Yonghwan	WePoS-29.16	38
O'Halloran, Martin	FrAT20.6	89
	SaCT10.1	142
O'Hara, Bruce	ThCT8.5	53
Ohata, Tomoyuki	FrPoS-28.23	115
Ohe, Sachio	FrPoS-32.2	124
Ohira, Hideki	WePoS-26.16	30
Ohira, Yoshinobu	FrPoS-28.35	115
Ohki, Yukari	ThPoS-24.6	75
Ohkohchi, Nobuhiro	ThPoS-23.46	75

Ohkura, Michiko	WePoS-24.46	26	Oneyama, Fuyuki	FrPoS-28.37	116
	FrPoS-31.7	121	Ong, Ee Ping	ThAT19.2	44
Ohmi, Masato	WePoS-21.7	22	Ong, Marcus Eng Hock	WePoS-24.19	24
Ohnaka, Shinichi	WePoS-29.9	38		FrPoS-30.15	119
Ohnishi, Takashi	FrPoS-28.46	116	Onishi, Akinari	ThPoS-09.4	62
Ohno, Tetsuya	FrBT6.1	90	Onishi, Yoshifumi	ThPoS-23.31	74
Ohno, Yuko	FrPoS-30.21	119		FrPoS-32.16	125
Öhr, Emilia	ThPoS-03.4	59		SaBT7.4	136
Ohshima, Hiroyuki	ThPoS-22.6	70		SaBT7.5	136
Ohsuga, Mieko	WePoS-27.3	32	Onishi, Yuya	WePoS-25.35	28
Ohta, Hidetoshi	FrPoS-30.20	119	Ono, Ayumu	FrPoS-21.2	111
Ohta, Hiroshi	ThPoS-22.22	71	Ono, Hiroshi	WePoS-29.21	38
Ohta, Jun	FrPoS-31.47	124	Ono, Koki	ThPoS-24.8	76
Ohta, Makoto	SaBT20.3	139	Ono, Naoaki	WePoS-25.30	27
Ohta, Yuji	WePoS-29.9	38		WePoS-25.36	28
Ohtsuki, Tomoaki	ThCT16.1	56	Ono, Takuya	FrPoS-28.30	115
Ohyashiki, Junko H.	WePoS-27.39	34	Ono, Yumie	ThPoS-24.7	76
Oikonomou, Vangelis	WePoS-02.2	12		FrPoS-32.28	125
Oishi, Kenichi	SaBT5.4	135	Onodera, Hiroshi	ThCT10.5	54
Ojima, Shiro	WePoS-28.50	37	Onofrillo, Carmine	FrPoS-13.5	107
Oka, Hisao	ThPoS-22.15	71	Onorati, Francesco	WePoS-06.6	14
	ThPoS-22.17	71	Onu, Charles Chijioke	SaAT16.6	132
	ThPoS-22.18	71	Oouchida, Yutaka	ThPoS-24.6	75
Okada, Kazunori	SaDT6.6	146	Opie, Nicholas	ThBT1.5	45
Okada, Kunihiko	ThPoS-25.21	79		FrBT8.5	91
	FrBT2.4	89	Oraipoulou, Mariam-Eleni	WePoS-21.10	22
Okada, Shima	WePoS-26.45	31	Oralkan, Omer	ThCT17.3	56
	WePoS-28.39	37		FrCT5.4	97
	ThPoS-23.2	73	Ordonez, Juan Sebastian	FrBT1.3	89
	FrPoS-31.27	122	Orguc, Sirma	FrAT7.3	84
	FrPoS-31.28	122	Orhan, Umut	WePoS-27.48	34
	FrPoS-32.20	125	Orlandi, Silvia	FrCT10.6	99
	FrPoS-32.31	125	Orozco-Arroyave, Juan-Rafael	ThCT9.2	54
	FrPoS-32.32	125	Orphanidou, Christina	ThAT2.5	39
Okahara, Shigeyuki	FrPoS-23.1	112		SaCT2.6	140
Okamoto, Chihiro	FrPoS-32.15	125	Orsborn, Amy	FrBT5.4	90
Okazaki, Yasuomi	FrPoS-32.26	125		FrCT1.1	95
	FrPoS-32.28	125	Ortega Ramirez, Audrey Magdalena	SaDT15.4	148
O'Keefe, Christine	SaBT15.4	137	Ortega, Paulina	FrPoS-31.8	121
Okonkwo, Victor	WePoS-24.4	23	Ortigoza-Diaz, Jessica Lizbeth	ThPoS-24.32	77
Oktamuliani, Sri	FrBT12.3	93	Ortiz, Mario	WePoS-02.1	12
Oktay, Ozan	ThBT5.1	46		ThPoS-14.2	65
Okuda, Ryosuke	WePoS-24.38	25	Ortiz-Catalan, Max	ThPoS-03.4	59
Okuda, Yoichi	ThPoS-23.46	75		ThPoS-12.6	64
Okumura, Hiroshi	SaCT9.1	142		ThPoS-22.3	70
Okuno, Ryuhei	FrPoS-30.33	120		ThPoS-24.6	75
Okutomi, Masatoshi	SaCT12.1	142		FrPoS-32.33	126
Okuya, Teruhisa	WePoS-28.6	35		SaAT6.4	129
Olafsdottir, Gudrun Erla	FrBT1.2	89		SaBT6.3	135
Olesen, Alexander Neergaard	WePoS-29.18	38	Ortmanns, Maurits	ThBT2.6	45
	FrCT16.4	101	Ortu, Emanuele	WePoS-22.11	22
	SaAT16.1	132	Ortuño-Soriano, Ismael	FrPoS-10.6	106
Oliveira, Bárbara L.	SaCT10.1	142	Osada, Kenshiro	FrPoS-29.6	116
Oliveira, Mauro	ThAT12.3	42	Osaki, Toshihisa	FrPoS-24.9	112
Oliver, Michele	WePoS-27.38	34	Osborn, Luke	ThPoS-16.5	67
Oliveros Oliveros, José Jacobo	ThCT2.6	51		FrPoS-06.3	104
O'Loughlin, Declan	SaCT10.1	142	Osborne, Dustin	SaBT10.3	136
Olschewski, Horst	WePoS-05.9	14	Osborne, James	FrPoS-27.2	113
Olsen, Mads	FrPoS-28.33	115	O'Shea, Alison	SaAT14.4	131
Olvera-Montes, Nemecio Carlos	ThCT18.3	57		SaDT2.1	145
O'Mahony, Conor	FrPoS-19.6	110	Oshima, Kazuya	WePoS-27.3	32
Omar, Hasmla	ThBT3.6	45	Oshima, Shoichi	FrPoS-31.16	122
	FrBT10.6	92	Oshirabe, Katsuyuki	WePoS-25.28	27
Omata, Seiji	ThPoS-02.7	58	Oshiro, Ryotaro	FrPoS-32.26	125
Omens, Jeffrey	WePoS-14.2	17		FrPoS-32.28	125
Omer Gilani, Syed	SaBT9.2	136	Osoegawa, Hiromichi	FrPoS-28.42	116
Ometto, Giovanni	WePoS-19.2	20	Osorio, Rodrigo	FrPoS-21.3	111
Omire-Mayor, Daryl	WeAT1.6	1		FrPoS-28.10	114
Omisore, Olatunji Mumini	FrCT13.5	100	Ostojic, Daniel	ThCT13.3	55
	SaAT17.6	132	O'Sullivan, Mark	FrPoS-19.6	110
Omiya, Yasuhiro	WePoS-24.28	25		SaAT14.4	131
	WePoS-24.49	26	Oswalt, Denise	FrPoS-30.28	120
	WePoS-25.6	26	Ota, Jun	ThPoS-03.2	59
	WePoS-25.9	26		ThPoS-25.26	79
	WePoS-25.37	28			
O'Neal, D. Patrick	FrPoS-28.34	115			



Ota, Takashi	FrPoS-02.4	102
	SaAT4.4	128
	SaCT18.5	144
Otani, Katharina	WePoS-29.21	38
	ThCT6.2	52
	ThCT6.4	52
	ThCT6.5	53
	ThCT6.6	53
O'Toole, John M.	SaDT2.6	145
Otsuka, Sho	WePoS-26.14	29
	ThPoS-14.9	65
	FrPoS-32.30	125
Otsuka, Syuto	FrPoS-29.31	118
Otsuki, Hinako	SaAT4.4	128
Ottaviano, Manuel	WePoS-25.50	29
Ottley, Chanae	WePoS-20.4	21
Ottmann, Jenny	SaAT17.3	132
Otto, Kevin	WeAT17.1	C
	WeAT17.1	5
	WeBT16.1	10
	FrCT1.3	95
	SaCT1.6	140
Ou, Yanghui	ThBT17.4	49
Ou, Yujie	FrPoS-30.38	120
Oueslati, Rania	ThCT4.1	52
Ouweltjes, Okke	WePoS-05.2	13
Ovalle, Anaelia	SaAT17.1	132
Ovechkin, Alexander	ThCT13.5	55
Overeem, Sebastiaan	WePoS-05.2	13
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Owen, Elliot	ThAT18.2	44
Owens, Robert	FrBT11.4	92
Owoeye, Oyindamola	ThBT1.5	45
Oxley, Thomas	FrBT8.5	91
Oyama, Shintato	FrPoS-29.31	118
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Padwal, Raj	WePoS-26.18	30
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Paganelli, Chiara	FrPoS-13.4	107
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Page, Richard	SaCT17.6	144
Pages, Stephane	ThPoS-25.38	80
Pagin, Matteo	ThBT2.6	45
Pahk, Ki Joo	FrCT14.6	100
Pahlevan, Niema	WeBT8.2	8
Paidi, Anna	SaCT19.5	144
Paiva, Joana	FrPoS-19.5	110
Pakbin, Arash	SaAT16.4	132
Pal, Arpan	WePoS-10.3	16
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Pal, Natassja	SaAT14.5	131
Pal, Ranadip	WePoS-04.1	13
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Palaniappan, Kannappan	FrAT10.1	CC
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Palanisamy, Krishnamoorthy	FrPoS-10.2	106

Palaniswami, Marimuthu	WePoS-10.6	16
	FrCT2.5	96
	SaDT16.4	148
Palanker, Daniel	WePoS-24.13	24
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Palao-Cruz, Carmen	SaCT18.2	144
Palau, Francesc	FrPoS-29.7	117
Palepu, Anil	WePoS-04.6	13
Palmer, Jeffrey	WePoS-28.14	35
Palmerston, Jeremiah Bradley	ThPoS-19.5	68
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Pan, Boan	ThCT14.6	56
Pan, Han-Chi	ThPoS-25.35	80
Pan, Lizhi	ThPoS-12.1	64
Pan, Miao	WePoS-13.4	17
Pan, Yun	FrPoS-18.3	109
Pan, Yunpeng	FrBT11.3	92
Panahi, Abbas	SaDT20.5	149
Panahi, Issa	WePoS-07.4	15
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	FrCT9.1	98
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Panarese, Alessandro	FrPoS-31.24	122
Panayiotou, Maria	ThBT3.2	45
Panchanathan, Manivasagan	FrPoS-28.13	114
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Pang, Bo	WePoS-08.3	15
Pang, Winnie	ThPoS-15.1	66
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Papadopoulos, Evangelos	ThPoS-03.7	59
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Papageorgiou, Aris	SaDT2.2	145
Papageorgiou, Efthymios Philip	ThCT17.1	56
	FrBT5.2	90
Papaloukas, Costas	ThCT5.2	52
Papamatheakis, Joseph	WePoS-21.10	22
Papavasileiou, Ioannis	WeBT15.3	10
Papini, Gabriele	SaDT12.1	147
Parak, Jakub	SaAT13.1	131
Páramo, Miguel	FrPoS-30.11	119
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Paranjape, Raman	WePoS-24.4	23
Paraschiv-Ionescu, Anisoara	FrPoS-28.20	115
Pardalos, John	FrBT20.3	95
Paredes, Simao	FrBT16.4	94
	FrPoS-09.5	105
Paredes, Stephan	FrPoS-32.35	126
Parent, David	ThPoS-04.2	59
Parhi, Keshab	ThBT13.6	48
	FrAT11.1	85
	FrCT3.6	96
	SaAT9.4	130
Parizi, Saman	WeBT5.6	8
Park, Bo-yong	WePoS-24.47	26
Park, Catherine	ThCT17.1	56
	FrBT5.2	90
Park, Chang Soon	WePoS-10.2	16
Park, Cheoljin	FrPoS-32.18	125
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Park, Chul Min	FrBT14.4	93
Park, Dae-Sung	WePoS-27.50	34
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Park, Eunjeong	WePoS-29.20	38	Pasquale, Valentina	ThPoS-25.11	79
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Park, Heejin	WePoS-25.3	26		SaCT3.5	140
Park, Heesu	SaBT13.3	137	Pastene, Francisco	FrPoS-21.3	111
Park, Hodong	FrPoS-15.3	108	Pataky, Todd Colin	ThPoS-23.19	74
Park, Hyunjin	WePoS-24.47	26	Patel, Charmi	ThPoS-09.21	63
Park, Hyunkyung	ThPoS-07.6	61	Patel, Hirenkumar	FrCT3.4	96
Park, Inkyu	ThPoS-24.37	77	Patel, Kripa	FrAT15.2	87
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Park, Jaeho	ThPoS-24.37	77	Patel, Paras	WeAT17.5	5
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Park, Jaeyoung	WePoS-29.16	38		FrCT13.6	100
Park, Je-Kyun	ThPoS-25.17	79		SaAT3.4	128
Park, Jeongho	WePoS-29.20	38	Patel, Sachin	FrPoS-16.4	109
Park, Ji Su	FrPoS-30.48	121	Patel, Shwetak	FrCT17.4	101
Park, Jimin	WePoS-26.36	31		SaCT2.2	140
Park, Jinsick	FrPoS-32.14	125	Patel, Shyamal	WePoS-27.34	33
	FrPoS-32.19	125	Patel, Vrajeshri	SaAT11.2	130
	FrPoS-32.25	125	Patel, Yogi	WeBT16.1	10
Park, Jong-bum	FrBT4.1	89		WeBT16.2	10
Park, Jonghyun	WeBT14.3	10		WeBT16.3	10
Park, Jongoh	ThCT13.1	55	Pathinarupothi, Rahul Krishnan	FrBT16.6	94
Park, Jong-Rul	FrPoS-30.3	118	Pathirana, Pubudu N.	WePoS-07.6	15
	FrPoS-30.4	118		ThBT2.5	45
Park, Jonguk	FrPoS-32.23	125		FrCT7.5	98
Park, Jongyeap	WePoS-26.48	32		SaCT2.4	140
Park, Ki Ho	FrPoS-28.45	116		SaCT17.6	144
Park, Ki-Hee	FrPoS-32.14	125	Pathmanathan, Pras	WeAT20.6	6
	FrPoS-32.25	125	Patra, Arijit	ThBT3.6	45
Park, Kwang S.	WePoS-24.30	25		FrBT10.6	92
	FrAT4.4	83	Patriarco, Vincent	ThPoS-25.42	80
	FrPoS-28.39	116	Patrick, Erin	FrCT1.3	95
	FrPoS-32.38	126		SaCT1.6	140
Park, Kyungsoo	WeBT19.1	C	Patten, Craig	WePoS-27.26	33
Park, Moo Kyun	ThPoS-24.9	76	Patton, James	ThBT7.1	C
Park, Sangjun	FrAT18.4	88		ThBT7.5	47
Park, Sangwook	WePoS-05.14	14		ThPoS-21.11	70
Park, Sejin	FrPoS-29.1	116		SaAT6.6	129
Park, Seonghun	WePoS-25.27	27		SaCT20.1	C
Park, Seunghan	FrCT11.4	99		SaCT20.5	145
Park, Sung Ji	ThCT14.1	55		SaDT6.1	C
	ThPoS-21.1	69	Patwardhan, Abhijit	ThPoS-19.2	68
Park, Sungkee	FrBT19.2	95		FrAT12.4	86
Park, Sung-Min	ThBT15.4	49		SaAT13.4	131
	FrPoS-26.1	113	Paul, Michael	WePoS-21.5	21
Park, Suyeon	WePoS-26.29	30	Paul, Oliver	SaAT12.3	131
Park, Tae Young	FrCT14.6	100	Paul, Soubhik	FrPoS-10.2	106
Park, Yoonji	ThPoS-07.2	61	Paulson, Catherine	SaBT18.6	139
Park, Youkyeong	FrPoS-05.2	103	Pavel, Misha	WeAT12.3	4
Parkerson, Kimberly	WePoS-04.6	13		WePoS-27.48	34
Parkkonen, Lauri	ThAT2.1	39		WePoS-28.33	36
Parlikar, Tushar	FrPoS-01.1	102	Pavone, Enea	SaAT2.5	127
Parmar, Pritesh	ThBT7.5	47	Pawluk, Dianne	WePoS-27.37	34
	SaAT6.6	129	Paydar, Omeed	WePoS-27.25	33
Parnianpour, Zahra	ThPoS-11.14	64	Paydarfar, David	WeAT2.6	1
Parodi, Oberdan	FrPoS-27.3	113		ThPoS-14.16	66
	SaDT16.5	148	Pearson, John	WeAT8.6	3
Parque, Victor	WeBT12.2	9	Pearson, Stephen	FrPoS-08.6	105
	WePoS-06.1	14	Peck, Jacquelin	FrPoS-08.7	105
Parra, Lucas C.	FrBT8.1	91	Peddakota, Sandhya Prasanth	WePoS-18.3	20
	FrCT8.6	98	Peek, Niels	FrPoS-21.1	111
Parraga, Adriane	WePoS-15.5	18	Peeters, Ralf	SaBT13.6	137
Parsa, Vijay	ThPoS-11.10	63	Pei, Dingyi	SaAT11.2	130
Parton, Jason	SaCT16.4	143	Pei, Weihua	ThCT4.1	C
Parvaneh, Saman	FrPoS-28.9	114		ThCT4.5	52
Parvin, Bahram	WePoS-15.1	18		ThPoS-09.12	62
Parvin, Shokoofeh	ThPoS-14.14	65	Peixoto, Nathalia	FrAT8.1	84
	ThPoS-21.15	70	Pellegrini, Edoardo	ThPoS-13.7	65
Pascarella, Suzanne	SaAT18.1	133	Pellionisz, Peter	FrPoS-28.41	116

Pelosi, Gualtiero	FrPoS-27.3	113	Petroff, Neil	ThCT10.1	CC
	SaDT16.5	148		FrCT6.1	C
Pelosi, Elisa	ThAT4.2	40	Petrossians, Artin	ThPoS-24.26	77
Penders, Julien	WePoS-27.49	34	Petrozziello, Alessio	SaDT2.2	145
	FrAT16.2	87	Petrushin, Alexey	ThPoS-05.4	60
Peng, Bo	FrCT1.6	96	Pettibone, Jeffrey	WeAT17.5	5
Peng, Dongming	FrPoS-32.47	126	Pevernagie, Dirk	WePoS-05.2	13
Peng, Fei	ThPoS-20.6	69	Peyton, Shelly	ThAT9.1	41
Peng, Liang	WePoS-27.11	32	Pezoulas, Vasileios C.	FrPoS-11.3	106
	ThPoS-16.2	67	Pfarrkirchner, Birgit	WePoS-16.2	18
Peng, Silong	SaDT12.4	147	Pfau, Jennifer	SaBT1.1	134
Peng, Tommy	FrAT9.2	84	Pfeiffer, Norman	FrPoS-04.2	103
	SaAT12.1	130	Pfeil, Antoine	ThPoS-02.4	58
Peng, Xi	WeAT9.3	3	Pham, Bau	WePoS-21.4	21
Peng, Yun	FrPoS-31.48	124	Pham, Dung	WeAT20.2	6
Pengdong, Xiao	WePoS-26.42	31	Pham, Trieu H.	SaCT17.6	144
Penn, Anna	FrBT10.5	92	Phan, Dung	SaCT2.4	140
Pennacchini, Maddalena	FrAT19.1	88	Phan, Huu Lam	ThPoS-23.45	75
Pennati, Giancarlo	FrPoS-27.6	113		ThPoS-26.10	81
Pensabene, Virginia	FrPoS-24.6	112		ThPoS-15.3	108
Penzel, Thomas	WeAT4.1	CC		FrPoS-28.28	115
	WeBT4.1	7	Phan, Huy	WeBT13.1	CC
	WeBT4.2	7		WeBT13.3	9
	WeBT4.4	7		WePoS-09.2	15
	WeBT13.1	C		ThCT11.3	54
	WePoS-09.5	15		SaAT6.5	129
	ThAT18.1	CC	Philips, Tyler	FrCT3.3	96
	ThAT18.4	44	Phillips, Gabrielle Johannah	ThCT19.4	57
	SaDT12.1	C	Phinyomark, Angkoon	SaBT9.6	136
Peppard, Paul	FrCT16.4	101	Phua, Kok Soon	ThBT1.6	45
Perani, Daniela	ThAT2.4	39		ThPoS-09.14	62
Perdikis, Serafeim	SaAT5.3	128		ThPoS-09.16	62
Perdomo Charry, Oscar Julian	FrAT10.1	85		FrCT11.3	99
Perego, Paolo	FrAT17.2	87	Phyo Wai, Aung Aung	WePoS-04.9	13
Perera, Chamila	WePoS-04.1	13		ThPoS-11.12	64
Pérez de Frutos, Javier	ThPoS-06.4	60	Picard, Rosalind	WeAT12.4	4
Perez Gracia, Alba	ThCT12.3	55		ThBT17.5	49
Pérez López, Nancy Gabriela	FrPoS-31.40	123		FrPoS-08.10	105
Pérez, Jose	SaDT20.3	149		FrPoS-31.49	124
Perez, Manuel	ThAT7.4	41		SaCT7.4	141
Perez-Campos, Citlali	FrAT15.2	87	Pichel, Marc	ThPoS-03.3	59
Perez-Sanpablo, Alberto-Isaac	WePoS-28.32	36	Pickle, Nathaniel	ThBT18.6	50
	FrPoS-28.47	116	Picton, Helen	FrPoS-24.6	112
Pericas, Maria Francisca	SaAT13.5	131	Piekut, Roman	WePoS-25.5	26
Peris, Sandra	SaDT20.3	149	Piel, Michaela	WeAT10.3	3
Pernalte, Norali	ThPoS-13.4	64	Piella, Gemma	FrAT5.1	83
Perng, Cherng-Kang	ThPoS-24.42	78	Pierella, Camilla	ThAT4.4	40
Pernice, Riccardo	SaCT7.1	141		ThPoS-25.29	80
Pernkopf, Franz	WePoS-05.9	14	Pierrel, Nicolas	WeAT14.3	4
Perra, Emanuele	ThPoS-14.13	65	Pietilä, Julia	FrAT19.2	88
Perreault, Eric	WeBT10.1	CC	Pietrewicz, Michal	SaCT19.2	144
	ThAT11.1	42	Pignatelli, Niccolò	SaBT14.6	137
	SaBT6.1	C	Pijnappels, Mirjam	FrPoS-28.20	115
Perricone, Joey	WePoS-28.14	35	Pilkar, Rakesh	ThPoS-24.1	75
Perrin, Dimitri	WePoS-13.6	17		SaCT6.3	141
Perry, Joel C.	SaAT15.6	132		SaCT6.5	141
Pertsov, Arkady	WePoS-26.7	29	Pillai, Vineeth	ThPoS-24.14	76
Pesaran, Bijan	FrBT5.1	CC	Pillay, Kirubin	WeAT1.1	1
	FrBT5.4	90	Pillonetto, Gianluigi	FrCT12.2	99
	FrCT1.1	95	Pimentel, Anibal	ThCT19.3	57
	FrCT20.4	101	Pina-Ramirez, Omar	ThPoS-11.11	64
Pesteie, Mehran	FrCT5.6	97	Pinault, Gilles	ThCT9.5	54
Pester, Britta	WePoS-03.7	13		ThPoS-25.39	80
	ThAT2.2	39	Pinel, Nicolás	ThCT5.4	52
Peterchev, Angel V	ThBT20.5	50	Ping, Wu	WeBT3.2	7
	FrAT8.6	84		WePoS-18.2	20
Peters, Juriaan	FrAT20.5	89		ThPoS-08.1	61
	SaAT5.2	128		ThPoS-10.1	63
Petersen, Christian	WeAT4.4	2	Pinho, João Pedro	SaAT14.3	131
	FrPoS-28.6	114	Pini, Nicolò	SaDT2.4	145
Petersen, Eline Borch	ThAT1.3	39	Pino, Esteban J	FrPoS-21.3	111
Petersen, Jacob	ThPoS-09.7	62		FrPoS-21.6	111
Peterson, Kelly	FrPoS-08.10	105		FrPoS-31.8	121
Petrantonakis, Panagiotis	WeBT1.4	6		FrPoS-31.9	121
	WePoS-02.2	12	Pinto Bonnesen, Mathias	WePoS-09.3	15
Petrini, Lorenza	FrPoS-27.6	113	Pinto, Daniela	WePoS-18.4	20

Pinto, Nádia	WePoS-03.6	12	Poudel, Govinda	WeAT1.1	C
Pinyon, Jeremy	ThPoS-20.9	69		WePoS-25.2	26
Pion-Tonachini, Luca	WeBT2.3	7		ThPoS-25.12	79
	ThCT2.4	51	Poudel, Prabal	ThPoS-22.12	71
Piovanelli, Enrico	ThPoS-25.26	79		ThPoS-24.21	76
Pirca, Jairo	ThPoS-09.25	63	Pouloupoulou, Stavroula	ThPoS-23.21	74
Pires, Luiz	FrCT10.2	99	Poulsen, Mathias Krogh	FrPoS-31.10	121
Pires, Nuno M. M.	FrPoS-15.6	108	Poultney, Nathan	FrPoS-31.38	123
Pirogova, Elena	FrPoS-13.5	107	Poupon, Cyril	WePoS-18.4	20
Pirondini, Elvira	ThPoS-25.29	80	Pouranbarani, Elnaz	ThPoS-17.6	68
Pisaniello, Jane	SaAT8.4	129	Pourgharibshahi, Vahid	ThCT12.3	55
Pison, Daniela	ThPoS-14.15	65	Poursartip, Behnaz	FrCT13.6	100
Pistuddi, Valeria	FrAT12.5	86	Pouzzner, Daniel	WeAT17.3	5
Pittara, Melpo	SaCT2.6	140	Power, Brenden	FrPoS-29.22	117
Pittman, Benjamin	FrPoS-16.7	109	Power, Laura	WePoS-07.6	15
Pivonka, Peter	FrPoS-13.5	107		ThBT2.5	45
Plachta, Dennis T.T.	FrBT1.1	89		FrCT7.5	98
Platas-Garza, Miguel Angel	ThPoS-19.1	68	Power, Sarah	FrPoS-32.50	126
Plesniak, Michael	WePoS-27.22	33	Poza, Jesus	WePoS-03.6	12
Pluntke, Ulrike	FrPoS-32.35	126	Pozzi, Simone	SaAT2.5	127
Pm, Nabeel	WeAT14.4	4	Prakash, Punit	ThAT20.6	44
	FrPoS-27.4	113		FrBT14.1	C
	FrPoS-27.7	114		FrBT14.6	93
	FrPoS-27.8	114		FrPoS-19.7	110
Podgorski, Kaspar	FrPoS-31.42	123	Pramanik, Manojit	WeAT13.2	4
Poellabauer, Christian	FrPoS-07.3	104	Pramanik, Rajesh	ThPoS-09.23	63
Poigai Arunachalam, Shivaram	SaDT7.3	147	Prasad, Girijesh	WeBT2.5	7
Poignet, Philippe	WePoS-22.2	22		FrBT19.5	95
Poimann, Dino	SaAT17.3	132		SaBT2.6	134
Poirier, Catherine	FrBT18.2	94	Prasad, Judy	WeBT3.4	7
Polak, Adam G.	WePoS-04.3	13	Prasanna, Lenka	FrCT8.2	98
	FrPoS-31.41	123	Pratap, Abhishek	WeAT8.4	3
Poler, S. Mark	FrPoS-31.46	123	Prats-Boluda, Gema	FrBT20.4	95
Poli, Riccardo	WeAT2.5	1	Precup, Doina	SaAT16.6	132
	ThPoS-12.6	64	Preim, Bernhard	ThCT6.1	52
Polinski, Artur	SaCT19.2	144	Premananthan, Christine Sharmini	WePoS-04.6	13
Politano, Gianfranco	ThPoS-22.28	71	Presacco, Alessandro	ThPoS-14.11	65
Ponce, Hiram	FrAT3.6	83	Priester, Alan	ThPoS-26.3	81
Pons, Jose Luis	ThAT11.4	42	Prince, John	FrBT11.1	92
Pontre, Beau	WePoS-14.2	17	Principe, Jose	ThCT11.6	54
Poon, Carmen C.Y.	WeAT10.1	C		FrBT9.5	91
	FrPoS-12.7	107		SaDT19.3	149
Poore, Samuel	SaAT8.4	129	Prioleau, Temiloluwa	WePoS-01.2	11
Poosapadi Arjunan, Sridhar	ThPoS-16.7	67	Proença, Martin	WeAT14.3	4
	SaCT9.6	142		ThCT13.3	55
	SaDT5.2	146	Prokop, Alexander	WeBT20.6	11
Popescu, Mihail	WePoS-09.4	15		ThAT20.5	44
	FrPoS-16.6	109	Prucnal, Monika A.	WePoS-04.3	13
Popov, Pavlo	WeAT17.5	5	Psaraki, Maria	FrAT19.5	88
Popovic, Milos R.	WeBT7.4	8	Psycharakis, Stylianos	WePoS-21.10	22
	WeBT7.5	8	Pu, Jiangbo	FrPoS-31.32	123
	WePoS-28.44	37		FrPoS-31.48	124
Popović, Mirjana	ThPoS-15.8	66	Puchinger, Markus	ThPoS-13.3	64
Popovici, Emanuel	FrPoS-19.6	110	Pugash, Denise	FrCT5.6	97
	SaAT14.4	131	Pugh, Kenneth R.	WePoS-04.5	13
Porras, Antonio R.	ThBT9.3	47	Pulawski, Przemyslaw	WePoS-24.7	24
Porta, Alberto	ThAT12.1	CC	Pun, Sio Hang	FrPoS-03.1	103
	ThAT12.1	42	Punithakumar, Kumaradevan	WePoS-22.8	22
	ThAT12.2	42		ThBT3.4	45
	ThAT12.3	42		SaDT3.6	145
	ThAT12.4	42	Punjiya, Meera	WePoS-26.6	29
	ThAT12.5	42	Puonti, Oula	WeAT20.5	6
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	FrAT12.5	86	Puri, Chetanya	WePoS-10.3	16
	SaAT2.2	127	Puri, Isha	FrCT10.4	99
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	SaCT2.1	C	Puthusserypady, Sadasivan	ThPoS-09.7	62
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Qi, Shile	WePoS-13.4	17	
Qi, Xin	WeBT3.1	7	
Qian, Kun	SaAT9.3	130	
Qian, Long	FrPoS-10.5	106	
Qiang, Rui	WeAT20.3	6	
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Qiao, Hong	FrPoS-06.1	104	
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Qin, Fangyu	FrBT14.5	93	
Qin, Xianjing	WePoS-14.4	18	
Qin, Xiuyuan	WePoS-26.14	29	
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Qu, Li	ThCT5.6	52	
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Quest, Daniel	SaDT16.6	148	
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Quintana, Maria	WePoS-24.12	24	
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Quiroz, Griselda	ThPoS-19.1	68	
Quivira, Fernando	ThPoS-09.8	62	
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Radovanović, Saša	ThPoS-15.8	66	
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Raghavan, Shruthi	WePoS-13.5	17	
Raghuram, Kamini	FrCT10.6	99	
Rah, Jong Cheol	ThPoS-26.7	81	
Raheja, Amar	ThPoS-13.4	64	
Rahimi, Kazem	SaDT16.1	148	
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Rahman, Mohammed	WePoS-23.4	23	
Rahman, Raziur	WePoS-04.1	13	
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Raij, Tommi	ThBT20.2	50	
Raissi, Afsaneh	FrPoS-22.5	111	
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Raja, Vijai Shankar	ThCT18.5	57	
Rajala, Satu	FrAT12.3	86	
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Rajamani, Rajesh	FrCT4.6	97	
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Rajan, Deepta	FrAT2.6	82	
Rajan, Reshma	SaAT18.1	133	
Rajan, Smita	FrPoS-22.6	111	
Rajan, Sreeraman	FrBT17.2	94	
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Ramkrishna, Bharath	WePoS-22.12	23	
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Ramos Maia Martins, Ivo	ThAT7.4	41	
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Rapeaux, Adrien	ThPoS-14.13	65	
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Raportaru, M.C.	WePoS-26.3	29	
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Rashid, Mudassir	FrPoS-23.2	112	
Rashidi, Parisa	FrPoS-11.7	106	
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Rashno, Abdolreza	FrCT3.6	96	
Rasin, Alexander	WePoS-27.23	33	
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Razavi, Mehdi	FrCT4.2	96	
Real, Pierluigi	WeBT2.4	7	
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	SaBT2.1	134	Rodrigues, Joana	ThCT15.2	56
Ren, Lingxue	FrCT13.5	100	Rodrigues, Marco Aurélio Benedetti	ThCT12.6	55
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Renaud, Pierre	ThPoS-02.4	58	Rodríguez González, Monica	ThPoS-11.11	64
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Renevey, Philippe	FrAT17.1	87	Rodriguez, Edward	WeBT20.5	11
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Reyes, Bersain Alexander	ThCT18.3	57	Rogers, Gary	ThBT9.3	47
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Reynolds, Karen	FrPoS-20.4	110	Roh, Changhyun	FrPoS-32.9	124
	FrPoS-30.5	118	Roh, Donghyeon	WeBT19.2	11
Rezaei Nejad, Hojatollah	SaCT15.5	143	Roh, Se-gon	FrPoS-30.26	120
Rezaei, Mohammad Reza	SaAT7.4	129		FrPoS-31.6	121
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Ricci, Davide	FrPoS-24.1	112	Rombokas, Eric	SaBT4.4	135
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Rowe, Justin	ThPoS-21.14	70
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Roy, Rinku	ThCT9.4	54
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Roy, Shuvo	WePoS-29.1	37
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Ruales Rosero, Paul	WePoS-26.12	29
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Rubbert, Lennart	SaAT14.1	131
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Rudolph, Johanna	SaAT15.5	132
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Sakanashi, Hidenori	WePoS-27.24	33		FrPoS-29.13	117
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Sakly, Anis	FrCT6.2	97	Sang, ZhenHua	FrAT2.2	82
Sakota, Daisuke	FrPoS-25.5	113		FrAT2.3	82
Sakri, Oumayma	ThBT2.2	45	Sanjay, Soundarajan	FrBT19.6	95
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Sakuma, Ichiro	WePoS-28.25	36	Sano, Akane	WeAT12.4	4
	WePoS-28.26	36		FrPoS-31.49	124
	WePoS-28.27	36	Sanseverino, Matthew	ThPoS-03.5	59
	WePoS-28.28	36	Sant, Himanshu Jayant	WePoS-28.4	35
Sakurai, Risa	WePoS-27.47	34	Santacruz, Samantha R.	WePoS-28.49	37
Salamonsen, Robert F	FrCT4.1	96	Santaniello, Sabato	ThPoS-15.9	66
Salamunes, Ana Carla Chierighini	WePoS-19.7	21	Sant'Anna, Guilherme Mendes	SaAT16.6	132
Salas, Rachel	FrBT16.1	93	Santarelli, Luca	FrCT18.3	101
Salbu, Brit	FrPoS-15.6	108	Santillan Guzman, Alina	ThCT2.6	51
Salcedo Martínez, Amparo	FrPoS-31.40	123	Santorelli, Adam	FrAT20.6	89
Salcudean, Septimiu E.	FrCT5.6	97	Santos-Cuevas, Clara Leticia	FrPoS-30.23	119
Saleh, Soha	WePoS-28.41	37	Sarafidis, Michail	FrPoS-16.2	109
	FrBT11.4	92	Sarafis, Ioannis	SaAT9.1	130
	FrPoS-06.8	104	Sarafpour, Maryam	ThPoS-11.14	64
Saleh, Ziad	FrPoS-30.38	120	Saravanan, Yukesh Ragavendar	ThPoS-11.12	64
Saleheen, Firdous	SaAT18.1	133	Sargolzaei, Arman	WePoS-16.1	18
Salekin, Sirajul	ThPoS-18.6	68	Sargolzaei, Saman	WePoS-16.1	18
Salgado, Alejandro	WePoS-12.1	16		SaBT18.4	138
Salgado, Edu	SaAT14.4	131		SaBT18.6	139
Salinas, Sergio Alexander	ThCT19.3	57		ThCT16.5	56
Salminen, Alec	SaCT18.6	144	Saric, Kevin	SaAT8.1	129
Saltzstein, Bill	WeAT7.2	3	Sariev, Anvar	ThAT2.1	39
Salvat, Alejandra	FrPoS-13.1	107	Särkkä, Simo	FrBT20.2	95
Salvi, Dario	FrPoS-22.2	111	Sarlabous, Leonardo	FrBT20.4	95
	SaDT16.1	148		WeAT6.4	2
Salvo, Pietro	FrPoS-04.2	103	Sarma, Devapratim	WePoS-04.6	13
Samadani, Ali	ThBT2.4	45	Sarma, Sridevi V.	ThPoS-15.6	66
	ThBT18.1	C		ThPoS-16.5	67
	ThBT18.3	49		FrBT16.1	93
	FrPoS-18.4	109		FrCT8.1	98
Samavi, Shadrok	WeAT3.5	2		FrCT11.2	99
	WeAT3.6	2		SaBT6.5	135
	WePoS-19.9	21	Sarrafzadeh, Majid	FrPoS-19.4	110
	ThCT3.6	51	Sasabe, Kohji	WePoS-28.6	35
	SaBT5.3	135	Sasagawa, Kiyotaka	FrPoS-31.47	124
Samir, Anthony Edward	FrBT10.3	92	Sasaki, Kosuke	ThPoS-23.6	73
	FrCT5.5	97		ThPoS-24.35	77
Sammur, Lara	SaCT10.2	142	Sasani, Keyvan	ThBT17.3	49
	SaCT10.3	142		ThBT18.4	49
Sampaio, Luiz C.	FrCT4.2	96	Sasaoka, Takafumi	SaCT7.3	141
	FrPoS-25.3	112	Sathye, Vedant	FrPoS-28.8	114
	FrPoS-25.4	112	Satkauskas, Saulius	SaCT15.2	143
	FrPoS-25.6	113	Sato, Chihiro	FrBT6.1	90
Samsi, Siddharth	WePoS-15.6	18	Sato, Daisuke	FrBT18.4	94
Samuel, Oluwarotimi Williams	WePoS-06.3	14	Sato, Fumihito	ThPoS-25.28	80
	ThPoS-20.7	69		FrPoS-29.9	117
	FrBT17.5	94	Sato, Kazunori	WePoS-16.11	19
	FrCT7.3	98	Sato, Shohei	FrPoS-20.6	111
	FrCT20.6	102	Sato, Shunsuke	FrPoS-28.30	115
	SaAT4.5	128	Sato, Takashi	FrBT5.6	90

Sato, Takayuki	FrPoS-32.27	125	Schneider, Jr., Bertoldo	WePoS-19.6	21
Sato, Yuya	FrPoS-32.32	125	Schneider, Sandra	FrPoS-07.3	104
Satoshi, Nakamura	WePoS-24.44	25	Schoebel, Christoph	WeBT4.1	7
	ThAT1.1	39		WeBT4.4	7
Saunavaara, Jani	SaCT14.1	143	Schoettker, Patrick	WeAT14.3	4
Saunders, Kate	WeAT8.3	3	Scholten, Kee	ThAT6.1	40
	FrPoS-32.45	126		ThPoS-24.32	77
Saunders, Rachel Elizabeth	ThCT4.2	52		SaAT1.6	127
Sauro, Herbert	FrPoS-28.5	114	Scholz, Daniel	FrBT1.3	89
Šavc, Martin	SaDT6.4	146	Schopf, Anika	WePoS-27.14	32
Savchenko, Maria	FrBT2.4	89	Schouten, Alfred	WeBT10.3	9
Savchenko, Vladimir	FrBT2.4	89		WeBT10.4	9
Săvoiu, Gheorghe	WePoS-25.6	26	Schreier, Guenter	ThCT14.3	55
	WePoS-25.9	26	Schroeder, Rico	SaAT13.5	131
Sawada, Akira	ThAT19.4	44	Schroeer, Andreas	WePoS-28.47	37
Sawada, Kyoya	ThPoS-24.3	75		ThPoS-25.30	80
Sawan, Mohamad	WeBT17.2	11	Schuldhaus, Dominik	FrCT7.1	97
	SaDT5.4	146	Schuller, Bjoern	WePoS-07.3	15
Sawano, Yuichiro	ThPoS-26.9	81		SaAT9.3	130
Sawatome, Akira	ThPoS-23.38	75	Schulman, Daniel	FrPoS-28.9	114
	ThPoS-25.6	78	Schulte-Mattler, Wilhelm	FrPoS-04.6	103
Sawosz, Piotr	WePoS-24.7	24	Schultz, James	FrAT12.1	85
Saxena, Shreya	SaBT6.5	135	Schulz, Steffen	ThBT12.2	48
Sayed, Khaled	FrAT2.5	82	Schulz, Wade	SaAT16.4	132
	SaAT20.3	133	Schulze, Frank	ThBT10.1	47
Sayrafian, Kamran	ThAT20.4	44	Schulze, Jurgen	ThPoS-24.24	76
Sazonov, Edward	WeAT12.1	C	Schulze-Bonhage, Andreas	ThPoS-15.4	66
	WeAT12.1	4	Schumann, Andy	WePoS-03.7	13
	SaCT16.4	143	Schwaerzle, Michael	SaAT12.2	131
Sazuka, Naoya	WePoS-26.16	30	Schwartz, Martin	ThCT7.2	53
Sbrollini, Agnese	WePoS-10.1	16	Schwartz, Michael	WeBT15.4	10
	SaAT13.3	131	Schwebel, David C	SaBT4.5	135
	SaCT12.2	142	Schweikard, Achim	WePoS-22.3	22
Scalera, Jonathan	WePoS-13.10	17	Schwemmer, Michael	WeAT6.3	2
Scandurra, Anna	WePoS-11.5	16	Sciacchitano, Alessio	ThAT4.4	40
Scebba, Gaetano	SaCT10.4	142	Sciaraffa, Nicolina	SaAT2.5	127
Schaan, Kim	WePoS-24.4	23	Scilingo, Enzo Pasquale	WePoS-02.8	12
Schachter, Steven	SaBT18.1	CC		WePoS-06.4	14
Schaefer, Pierre-Loup	FrPoS-17.4	109		WePoS-10.7	16
Schäfer, Friederike	SaDT20.2	149		WePoS-11.5	16
Schäfer, Patrick Johannes	WePoS-28.12	35		ThAT2.4	39
Schaff, James	FrPoS-28.5	114		FrBT7.4	91
Scheideler, Olivia J.	ThPoS-24.49	78		FrBT7.6	91
Scheidl, Stefan	WePoS-05.9	14		SaAT2.3	127
Scheikl, Paul	SaBT14.2	137	Scott, Richard	WePoS-21.3	21
Scheiwe, Christian	FrBT1.6	89	Se Yeong, Lee	WePoS-27.50	34
Schembri, Martina	SaCT10.2	142	Seamans, Taylor	WePoS-04.8	13
	SaCT10.3	142	Seara-Aguilar, Germán	FrPoS-10.6	106
Scheme, Erik	SaBT9.6	136	Seda, Robinson	SaDT14.1	147
	SaCT9.2	142	Sederberg, Per	WeAT6.3	2
Schena, Emiliano	ThCT18.2	57	Seeger-Zybok, Rebekka K	WePoS-29.18	38
	FrAT17.2	87	Seelig, Georg	SaAT20.4	133
	SaCT18.1	144	Seepold, Ralf	WeBT4.2	7
Schiavon, Michele	WeBT12.4	9	Sefati, Shahriar	FrCT13.1	100
	SaAT15.4	132	Seguin, Fabrice	FrAT14.2	86
Schiavone, Giuseppe	ThCT10.1	54	Segura, Manuel	ThPoS-13.4	64
	ThCT10.3	54	Sehgal, Abhishek	FrAT16.1	87
Schick, Fritz	ThCT7.2	53	Seibel, Eric	FrCT17.4	101
Schickling, Benedikt	FrPoS-04.6	103	Seidlits, Stephanie	SaBT18.6	139
Schieber, Marc	SaBT6.5	135	Seino, Kimihiro	WePoS-25.1	26
Schiecke, Karin	WePoS-03.7	13	Sejdic, Ervin	SaBT17.2	138
Schifitto, Giovanni	FrPoS-31.30	123	Sejnowski, Terrence J.	WePoS-04.4	13
Schiller, Yitzhak	ThPoS-15.6	66	Seki, Takashi	FrPoS-32.34	126
Schimmöeller, Tyler	WePoS-23.3	23	Sekine, Katsuhisa	WePoS-25.39	28
Schindhelm, Klaus	ThAT18.1	43	Sekine, Masaki	ThAT14.2	42
Schlachta, Christopher	FrCT13.6	100	Sekine, Masashi	FrPoS-28.46	116
Schlemper, Jo	ThBT5.1	46		FrPoS-31.23	122
Schlink, Bryan	ThPoS-25.33	80	Sekino, Masaki	WePoS-26.50	32
Schmalstieg, Dieter	WePoS-16.2	18		WePoS-28.17	35
Schmalz, Klaus	SaDT4.5	146		ThCT10.5	54
Schmidlin, Eric	ThCT10.1	54	Sekitani, Tsuyoshi	ThPoS-22.22	71
Schmitt, Claus	WePoS-10.5	16	Seko, Sarah	ThBT18.5	49
Schmitt, Maximilian	SaAT9.3	130		ThCT12.5	55
Schnabel, Julia	ThBT5.1	CC	Selkirk, Stephen	ThPoS-25.39	80
	ThBT5.2	46			
Schneider, Christoph	SaAT5.3	128			

Selvaraj, Nandakumar	ThBT17.6	49	Shah, Syed Ahmar	ThCT8.3	53
	ThCT18.1	C		ThPoS-16.6	67
	ThCT18.6	57		SaDT16.1	C
	SaAT17.5	132		SaDT16.1	148
Selvaraj, Sakthivel	WePoS-26.49	32	Shah, Vibhuti	FrCT10.6	99
Semenova, Oksana	SaCT7.2	141	Shahbazi, Mahya	FrCT13.6	100
Semin, Gun Refik	WePoS-11.5	16		SaAT3.4	128
Semprini, Marianna	ThAT4.1	CC	Shahin, Mostafa	WePoS-09.5	15
	ThAT4.1	40	Shahrokhi, Amin	ThPoS-14.14	65
	ThAT4.2	40		ThPoS-21.6	69
	FrBT8.2	91		ThPoS-21.7	70
Sen, Debashis	WePoS-23.9	23		ThPoS-21.9	70
Sen, Shreyas	FrCT18.4	101	Shahzadi, Aeman	WePoS-08.4	15
	SaBT17.6	138	Shaimerdenova, Madina	FrPoS-18.2	109
Seneviratne, Aruna	SaCT17.6	144	Shaji, Ashly	ThPoS-24.24	76
Sengupta, Nilapratim	SaCT20.1	145	Shakil, Sadia	WePoS-06.5	14
Sengupta, Partho	SaBT14.6	137	Shalish, Wissam	SaAT16.6	132
Sengupta, Shantanu	SaBT14.6	137	Shallal, Christopher	FrPoS-06.3	104
Sengur, Abdulkadir	WePoS-07.3	15	Shamout, Farah	ThAT13.1	42
Senthilnathan, Chendur	ThAT11.5	42	Shamsi, Foroogh	ThPoS-08.7	61
Seo, Hee Won	ThPoS-22.36	72	Shamsir, Samira	FrPoS-17.7	109
	ThPoS-23.42	75	Shamsollahi, Mohammad J	SaAT14.5	131
Seo, Hyein	ThCT5.5	52	Shan, Xiang	WePoS-28.28	36
Seo, Hyeon	FrBT8.6	91	Shanbehzadeh, Jamshid	SaDT5.3	146
Seo, Jiwon	ThCT5.1	52	Shand, Fiona	WeAT8.5	3
Seo, Ji-Won	FrAT18.4	88	Shandhi, Md. Mobashir Hasan	ThAT15.5	43
	FrPoS-29.37	118	Shanechi, Maryam	ThPoS-09.20	62
Seo, Jong Mo	ThPoS-07.2	61		FrAT6.4	83
Seo, Joohyun	FrPoS-01.7	102		FrAT6.5	83
Seo, Jungmin	ThCT13.2	55		FrCT20.4	101
	ThPoS-24.34	77	Shang, Zhongxia	SaDT9.1	147
Seo, Kangmoon	ThPoS-07.2	61	Shankar, Nikhil	WePoS-07.4	15
	FrPoS-28.17	114		SaCT2.3	140
Seo, Seong Won	ThPoS-26.14	81	Shanta, Aysha Siddique	FrPoS-17.7	109
Seo, Soonmin	FrPoS-30.8	119	Shari, Forbes	SaAT18.3	133
Seoane, Fernando	ThAT7.1	C	Shariat, Mohammad Hassan	SaAT12.4	131
	ThAT7.3	40	Sharif, Hajar	WePoS-29.17	38
	FrPoS-10.3	106	Sharif, Hamid	FrPoS-32.47	126
Seok, Chunkyun	ThCT17.3	56	Sharifi, Neda	ThPoS-06.2	60
Seol, Hye Yoon	WePoS-26.29	30	Sharma, Ashish	FrPoS-11.4	106
	WePoS-26.31	31	Sharma, Gaurav	WeAT6.1	C
Sepulveda, Francisco	ThPoS-09.22	63		WeAT6.3	2
Ser, Wee	WePoS-16.4	19		WeAT6.4	2
	FrBT19.3	95		WeAT6.6	2
	FrPoS-08.2	104	Sharma, Karan	FrPoS-28.8	114
Serag El Din, Nermeen	ThPoS-03.3	59	Sharma, Manuja	FrCT17.4	101
Serdijn, Wouter A.	FrBT1.2	89	Sharma, Utkarsh	FrPoS-32.16	125
Sergio, Manzano	WePoS-25.8	26	Shashikumar, Supreeth Prajwal	FrPoS-11.4	106
Serowy, Steffen	ThCT6.1	52	Shaw, Susan J.	SaAT8.2	129
Serrai, Hacene	SaCT5.3	141	Shawn, Hochman	ThCT17.5	56
Serrano, Claudia	FrPoS-29.7	117	She, Qi	ThPoS-19.5	68
Sessa, Salvatore	ThCT15.4	56	Shearin, Staci	ThBT18.6	50
Sethi, Amit	WeAT6.4	2	Sheet, Debdoot	SaBT2.4	134
Setola, Roberto	SaCT18.1	144	Sheffield, James	WePoS-27.48	34
Setteli, Megan	WeBT5.2	8	Sheikhhattar, Alireza	WeAT2.1	1
Settisara Janney, Srivarna	ThPoS-22.14	71	Shen, Dinggang	ThBT9.4	47
Sevak, Brinda Nishith	SaCT20.5	145	Shen, I-Ting	WePoS-28.29	36
Seyed Vahedein, Yashar	WePoS-25.19	27	Shen, Jun	WePoS-22.2	22
	SaBT12.1	136	Shen, Lu	FrBT10.4	92
Seymour, John P.	WeBT5.1	C	Shen, Rebecca	WePoS-16.10	19
	WeBT5.6	8	Shen, Ting	WeBT3.2	7
Sezen, A. Serdar	FrCT4.6	97		WePoS-18.2	20
Sgorbini, Micaela	WePoS-10.7	16	Shen, Xiling	ThPoS-18.1	68
Sha, Ying	FrPoS-09.7	105		ThPoS-18.2	68
Sha, Zhiyi	FrBT7.2	91		SaAT20.1	133
Shabanian, Ardavan	FrPoS-24.1	112	Shen, Yang	ThPoS-02.3	58
Shade, John	FrAT19.3	88	Sheng Yue, Yue	ThPoS-08.3	61
Shadfan, Raed	FrPoS-02.6	102	Sheng, Xinjun	ThPoS-15.5	66
Shafai, Cyrus	WePoS-07.5	15		SaCT9.5	142
Shafer, Benjamin	ThPoS-19.6	68	Shenoy, Krishna V.	WeBT1.6	6
	ThPoS-24.17	76		WePoS-25.24	27
Shafique, Muhammad	ThPoS-04.5	59		ThAT1.2	39
Shah, Ashesh	ThPoS-14.15	65	Shepherd, John	WeAT10.3	3
Shah, Disheet	ThPoS-24.30	77	Sher, Alexander	ThBT6.1	46
Shah, Malay Ilesh	FrPoS-27.8	114	Sher, David	FrCT16.3	101
Shah, Syed	WePoS-16.5	19	Sherer, Eric A.	FrPoS-28.34	115

Shergill, Harleen	ThPoS-24.18	76	Shin, Seung-chul	FrPoS-31.11	122
Shi, Bertram E.	WePoS-04.10	13	Shin, Soowon	ThPoS-24.34	77
	ThCT15.3	56	Shin, Taemin	WePoS-26.15	29
	ThPoS-09.19	62	Shin, Wonseok	FrPoS-21.8	111
Shi, Caiyun	WeBT6.6	8	Shin, Yeongcheol	FrPoS-29.35	118
	FrAT5.4	83	Shin, Young Seok	WePoS-26.27	30
Shi, Chengyu	FrPoS-30.38	120		ThPoS-23.32	74
Shi, Ji	ThPoS-26.8	81		FrPoS-32.11	124
Shi, Jian	FrPoS-32.39	126	Shindo, Yasuhiro	ThPoS-22.42	72
Shi, Jianing	ThPoS-23.41	75		ThPoS-22.43	72
Shi, Jun	WeAT3.4	2		FrBT14.2	93
	WePoS-13.8	17	Shinn, Tyler	FrBT20.6	95
	WePoS-22.1	22	Shinoda, Hiroyuki	SaBT17.5	138
	FrBT10.2	92	Shinohara, Mai	ThPoS-24.38	77
	FrBT10.4	92	Shinohara, Shuji	WePoS-24.28	25
Shi, Peiwen	WePoS-21.2	21		WePoS-24.49	26
Shi, Weiwei	FrPoS-28.3	114		WePoS-25.6	26
Shi, Wen	FrBT19.1	C		WePoS-25.9	26
	FrBT19.3	95		WePoS-25.37	28
Shi, Yang	FrBT9.3	91	Shintaku, Yuta	WePoS-06.1	14
Shiba, Kenji	FrPoS-30.34	120	Shintate, Ryo	SaAT10.3	130
	FrPoS-30.35	120	Shinya, Shimada	WePoS-28.5	35
	FrPoS-30.36	120	Shiode, Nobuo	FrPoS-30.44	120
Shibata, Hideki	FrAT14.6	87	Shiozawa, Naruhiro	WePoS-25.42	28
Shibata, Mahoko	WePoS-25.25	27		WePoS-26.45	31
Shibata, Masahiro	FrPoS-29.11	117		WePoS-28.39	37
Shibui, Toyohito	WePoS-25.28	27		ThPoS-24.38	77
Shiga, Nobuyasu	WePoS-26.25	30	Shipeng, Han	FrCT13.5	100
Shigeta, Masahiro	ThPoS-04.8	60	Shirafuji, Shouhei	ThPoS-25.26	79
	ThPoS-23.38	75	Shirahama, Naruki	WePoS-24.45	26
Shigwedha, Paulus Kapundja	FrPoS-31.25	122	Shiraishi, Ryoichiro	SaDT6.1	146
Shiina, Tsuyoshi	ThBT15.3	49	Shiraishi, Yasuyuki	WePoS-26.37	31
Shikama, Maiko	ThPoS-25.32	80		FrPoS-32.34	126
Shils, Jay	ThAT10.1	CC	Shirazi, Elham	ThPoS-11.14	64
	ThAT10.1	41	Shirazi, Seyed Yahya	ThPoS-11.14	64
	ThAT10.3	41		ThPoS-25.15	79
	ThAT10.5	41	Shirbani, Fatemeh	WeAT14.1	4
Shim, Chaeyun	FrAT8.4	84		ThAT14.3	42
Shim, Eun Bo	FrPoS-26.6	113		FrAT12.2	85
Shim, Shinyong	ThCT13.2	55		FrCT12.4	99
	ThPoS-07.2	61	Shirsat, Vikram Rajas	FrAT18.3	88
	FrPoS-28.17	114	Shishido, Toshiaki	WePoS-27.47	34
Shim, Youngbo	FrBT13.1	93	Shitanda, Isao	WePoS-27.40	34
	FrPoS-30.26	120		FrPoS-32.48	126
	FrPoS-31.6	121	Shivaram, Suganti	SaDT7.3	147
	FrPoS-32.9	124	Shivdasani, Mohit N.	ThCT1.5	51
	FrPoS-32.10	124	Shkel, Andrei	ThPoS-14.11	65
Shima, Keisuke	FrPoS-10.8	106	Shmuel, Amir	WePoS-19.10	21
Shimada, Shigenobu	ThPoS-22.6	70	Shoaran, Mahsa	FrCT14.5	100
Shimada, Takamasa	WePoS-24.10	24	Shoji, Kento	FrPoS-28.44	116
Shimatani, Koji	ThPoS-11.3	63		FrPoS-29.26	118
	FrPoS-10.8	106	Shokoueinejad, Mehdi	SaDT12.3	147
Shimatani, Yuichi	ThPoS-23.5	73	Shon, Ahnsei	ThPoS-25.1	78
	ThPoS-23.6	73	Shoorangiz, Reza	FrBT6.3	90
Shimauchi, Suehiro	SaCT12.5	142	Shorter, Amanda	WeBT9.1	9
Shimayoshi, Takao	FrPoS-26.5	113		FrBT6.5	90
Shimazaki, Shota	FrAT16.6	87	Shou, Guofa	WePoS-26.26	30
Shimazaki, Takunori	FrPoS-19.2	110		WePoS-27.16	32
Shimizu, Takuya	FrBT12.3	93		ThPoS-08.5	61
Shimoda, Kunio	ThPoS-04.8	60		ThPoS-08.9	61
Shimomura, Yoshihiro	FrPoS-31.23	122	Shoukat, Arslan	FrAT19.4	88
Shimura, Koichi	FrCT12.5	100	Shreedhar Bhat, Gautam	WePoS-07.4	15
Shin, Bangho	WeBT20.1	11		SaCT2.3	140
Shin, Daehyeon	FrPoS-15.3	108	Shrey, Daniel W.	WePoS-12.3	17
Shin, Dong Hoon	FrPoS-31.22	122	Shu, Xiaokang	ThPoS-15.5	66
Shin, Eui Seok	ThCT15.1	56	Shuang, Dongsu	WePoS-26.20	30
Shin, Hangsik	FrPoS-29.24	117		WePoS-26.21	30
	FrPoS-29.28	118	Shukuzawa, Kota	FrPoS-32.29	125
Shin, Henry	ThCT10.2	54	Shustak, Shiran	ThBT8.4	47
Shin, Hyogeun	WeBT19.2	11	Si, Dong	WePoS-05.7	14
Shin, I Su	WePoS-26.27	30		FrPoS-16.7	109
	ThPoS-23.32	74		SaBT16.6	138
	FrPoS-32.11	124	Siddharth, Siddharth	WePoS-04.4	13
Shin, Jaeyoung	FrPoS-30.29	120	Siddiquee, Masudur R.	FrPoS-06.7	104
Shin, Jennifer Hyunjong	WePoS-28.34	36	Siddiqui, Tasnuba	FrAT19.6	88
Shin, Sang-Hoon	FrPoS-30.14	119	Sideris, Dimitrios	SaBT14.5	137

Siecinski, Szymon	SaCT12.6	142	Sivaprakasam, Mohanasankar	WeAT14.4	4
Siegel, Eric	FrBT2.2	89		WePoS-23.2	23
Siegel, Matthew	SaCT16.1	143		WePoS-23.11	23
Sigalas, Evangelos	WeBT2.2	7		WePoS-26.49	32
Signorini, Maria G.	SaDT2.4	145		WePoS-27.1	32
Sigurdsson, Stefan Alexis	ThPoS-25.38	80		ThCT18.5	57
Sijobert, Benoît	FrCT6.5	97		FrAT10.4	85
Sikdar, Debdeep	ThCT9.4	54		FrPoS-27.4	113
	SaBT2.3	134		FrPoS-27.7	114
Silawan, Nawatt	ThCT18.1	57		FrPoS-27.8	114
Silva, Carlos Alberto Batista	FrPoS-02.2	102		FrPoS-32.37	126
Silva, Joana Raquel	FrCT7.2	98		SaCT4.5	141
Silva, Luis Filipe Branco Alves da	FrPoS-15.6	108	Siyuan Fang, Tony	WePoS-22.9	22
Silva, Luiz Eduardo Virgilio	ThAT12.3	42	Skodda, Sabine	ThCT9.2	54
Silva, Maria Eduarda	WePoS-11.4	16	Skomrock, Nicholas	WeAT6.3	2
Silva, Marina	SaAT5.3	128	Skubic, Marjorie	WePoS-09.4	15
Silveira, Carolina	ThCT1.3	51		FrPoS-04.1	103
	ThPoS-20.1	69	Slaney, Malcolm	SaCT18.4	144
	ThPoS-20.3	69	Slaughter, Gymama	FrAT18.1	88
Silversmith, Daniel	SaCT1.3	139		SaAT4.6	128
Sim, Joo Yong	ThPoS-24.13	76		SaDT15.1	CC
	FrPoS-30.31	120		SaDT15.5	148
Sim, Kheng Leng David	FrPoS-25.1	112	Slipher, Geoffrey A.	ThAT16.5	43
Similä, Heidi	ThCT14.4	55		ThAT16.6	43
	ThPoS-11.8	63		SaAT17.4	132
	SaCT16.2	143	Slutzky, Marc	WePoS-28.21	35
Simões, João Carlos Gomes	FrPoS-02.2	102		ThPoS-21.4	69
	FrPoS-02.3	102		SaDT9.4	147
	FrPoS-02.5	102	Smail, Bruce	WePoS-14.7	18
Simon Herrera, Pedro David	SaBT18.5	138	Smeets, Christophe	WePoS-09.1	15
Simon, Jesse	FrCT14.4	100	Smiley, Aref	FrBT4.6	90
Simon, Jonathan Z.	WeAT2.1	1	Smith, Brandon	WePoS-27.30	33
Simoni, Virginia	SaCT14.2	143	Smith, Brendan W.	ThPoS-21.14	70
Sims, Andrew	WePoS-26.5	29	Smith, Corinna	FrCT10.6	99
	FrPoS-31.33	123	Smith, Michael	FrAT14.1	C
	FrPoS-31.35	123		FrAT14.3	86
Sims, Jeffrey	SaCT3.1	140		FrPoS-04.5	103
Simunic, Dina	ThAT20.4	44		FrPoS-30.19	119
Sinclair, Matthew	WePoS-17.2	19	Smith, Peter Alex	FrPoS-25.3	112
	WePoS-22.4	22		FrPoS-25.4	112
	ThBT9.2	47		FrPoS-25.6	113
	ThBT9.6	47	Smith, Rachel J.	WePoS-12.3	17
Sindi, Suzanne	ThCT5.3	52	Smith, Roland Theodore	WePoS-16.13	19
Singapogu, Ravikiran	FrPoS-12.8	107	Smith, Sandra	WePoS-17.2	19
Singh, Aparna	ThPoS-21.4	69		ThBT9.6	47
Singh, Balbir	FrCT2.4	96	Smolle-Jüttner, Freyja-Maria	WePoS-05.9	14
Singh, Gurpreet	WePoS-27.31	33	Smuck, Matthew	SaBT19.5	139
Singh, Narinder	WePoS-29.15	38	Snarrenberg, Shana	SaCT20.5	145
Singh, Rahul	FrPoS-21.4	111	Snowdon, Jane	FrCT3.3	96
	FrPoS-30.1	118	So, Rosa	ThBT1.6	45
Singh, Rituraj	WePoS-10.3	16		ThPoS-09.15	62
Singh, Tania	SaDT14.4	148		ThPoS-09.16	62
Sinha, Aniruddha	FrPoS-09.1	105	Sobayo, Tiwalade	ThPoS-15.3	66
	FrPoS-09.2	105		ThPoS-19.3	68
Siniatchkin, Michael	WePoS-01.1	11	Sobhani Tehrani, Ehsan	WeBT10.1	9
	WePoS-01.4	12		ThPoS-24.31	77
	WePoS-29.11	38	Sodini, Charles	ThBT17.4	49
Siogkas, Panagiotis	WePoS-22.7	22		FrPoS-01.7	102
	FrPoS-27.3	113		SaDT4.1	146
Sircar, Tushar	SaBT18.1	138	Soeta, Yoshiharu	ThBT1.3	45
Sirivisoot, Sirinrath	FrPoS-15.7	108	Sofer, Laurel	WePoS-29.8	37
Sirlapu, Tejaswini	ThCT15.5	56	Soga, Kohei	ThPoS-04.8	60
Siroen, Karen	FrCT13.6	100	Soh, Zu	FrPoS-19.3	110
Sison, Shiloh	ThPoS-11.1	63		FrPoS-23.1	112
	ThPoS-22.20	71		SaCT7.3	141
Siu, Ricardo	WeBT16.4	10	Sohn, Erik	WePoS-27.49	34
Siu, Vince	WePoS-24.42	25	Sohn, Jangjay	WeBT14.3	10
Siva Baala Sundaram, Divaakar	SaDT7.3	147		FrPoS-31.39	123
			Sohn, Lydia	ThPoS-24.49	78
			Sola, Josep	WeAT14.3	4
				WePoS-25.8	26
			Solà-Soler, Jordi	SaBT13.5	137
			Soldani, Giorgio	FrCT13.2	100
			Soleimani, Maryam	ThPoS-21.9	70
			Soleymanpour, Rahim	ThPoS-09.21	63
			Soliz, Peter	SaDT5.5	146

Solon, Amelia	ThPoS-22.46	72	Sowers, Richard	WeBT1.3	6
	FrAT1.5	82	Sozzani, Rosangela	WePoS-20.4	21
Soltan zadi, Armin	FrAT9.6	85	SP, Preejith	ThCT18.5	57
	FrPoS-29.21	117	Spada, Danilo	ThAT2.4	39
Soltanian-Zadeh, Somayyeh	ThPoS-23.27	74	Spadaro, Savino	FrPoS-31.10	121
Soltanzadeh, Ramin	WePoS-07.5	15	Spalletti, Cristina	FrPoS-31.24	122
Somers, Tamara	FrPoS-19.8	110	Spanakis, Emmanouil G.	WePoS-26.3	29
Son, Bukun	WePoS-29.16	38		WePoS-26.4	29
Son, Choonghyun	ThPoS-21.3	69		FrAT19.5	88
	FrCT11.4	99	Sparacino, Giovanni	WeAT2.2	1
Son, Hyewon	ThPoS-23.45	75		WePoS-05.5	14
	ThPoS-26.10	81		FrCT12.2	99
	FrPoS-15.3	108	Spasov, Simeon	ThCT3.5	51
	FrPoS-28.28	115	Speacht, Toni	ThPoS-03.5	59
Son, Jeongeun	SaBT20.2	139	Spencer, James T.	WePoS-26.2	29
Son, Jongsang	ThPoS-15.10	67	Spencer, Thomas	ThCT1.5	51
	SaAT6.1	128	Spendiff, Sally	ThPoS-20.1	69
Song, Andrew	WeAT2.3	1	Sperrin, Matthew	FrPoS-21.1	111
Song, Cheol	WePoS-21.8	22	Sperry, Zachariah	WeBT5.6	8
Song, Dong	ThAT6.1	40	Sponsler, Michael Bradley	WePoS-26.2	29
	ThCT8.2	53	Springett, Kate	FrPoS-07.2	104
	ThCT8.4	53	Spungen, Ann	FrAT13.5	86
	ThPoS-24.12	76	Sram, Jaroslav	FrPoS-30.9	119
	FrBT9.1	C		FrPoS-30.10	119
	SaAT1.6	127	Sridar, Sangita	WePoS-26.18	30
	SaBT2.1	CC		WePoS-26.19	30
	SaDT19.4	149	Sridhar, Arvind	FrPoS-32.35	126
	SaDT19.6	149	Sridharan, Sridha	WePoS-05.3	14
Song, Ho Jun	FrPoS-32.40	126		FrCT10.1	99
Song, Hyun-Geun	WePoS-24.43	25	Srimathveeravalli, Govindarajan	ThCT14.1	C
Song, Jiahui	WePoS-26.8	29		FrCT14.1	CC
Song, Jiangling	ThPoS-17.5	68	Srinivasan, Shriya	WePoS-24.43	25
Song, Jiyeon	ThPoS-04.4	59	Srinivasan, Tara	ThPoS-18.2	68
Song, Shaoli	WePoS-17.4	19	Srivastav, Rohit	FrPoS-01.8	102
Song, Soohwa	FrPoS-31.22	122	Srivastava, Ruchir	ThAT19.2	44
Song, WenZhan	FrBT9.3	91		FrPoS-29.4	116
Song, Won Hoon	FrPoS-26.1	113	St. John, Maie	FrPoS-28.41	116
Song, Xiangfen	ThPoS-24.25	77	Stadnik, Adriana Maria Wan	WePoS-19.6	21
Song, Xubo	WePoS-16.8	19		WePoS-19.7	21
Song, Yang	FrPoS-17.7	109		FrPoS-04.3	103
Song, Yeongtak	ThPoS-25.48	81		FrPoS-04.4	103
Song, Yilin	FrCT4.3	96	Stadnik, Paul	WeAT20.3	6
	SaAT1.2	127		FrPoS-03.3	103
Song, Ying	SaDT3.4	145	Stankovic, Konstantina M.	FrAT7.3	84
Song, Yong-Joon	WePoS-25.13	27	Stanley, Garrett	WeBT18.2	11
Song, Yoon-Kyu	ThPoS-07.2	61	Stansby, Gerard	WePoS-26.5	29
Song, Yulin	ThPoS-25.7	78	Staples, Naomi	SaCT1.2	139
	FrPoS-30.38	120	Starkov, Pierre	WePoS-25.8	26
Song, Yun Seong	ThPoS-23.37	74	Stashuk, Daniel William	FrAT7.2	84
Songkakul, Tanner	FrAT17.5	87	Stavisky, Sergey	WeBT1.6	6
Sonkusale, Sameer	WePoS-26.6	29	Stawicki, Piotr	ThPoS-09.2	62
	SaCT15.1	CC	Stecca, Matteo	ThCT11.4	54
	SaCT15.5	143	Steinberg, Stanislav	ThBT8.4	47
Soomro, Sanam	WePoS-21.1	21	Steins, Helen	FrBT4.2	89
Soraghan, John J	SaAT9.5	130	Stella, Martha	ThPoS-07.3	61
Sorensen, Helge B D	WeBT13.1	9		FrPoS-26.4	113
	WePoS-09.3	15	Stepanov, Evgeny A.	WePoS-05.10	14
	WePoS-29.18	38	Stephani, Ulrich	WePoS-01.4	12
	FrCT16.4	101	Stephen, Emily	SaAT7.6	129
	FrPoS-28.33	115	Stephens, Andrew	FrCT4.1	96
	SaAT16.1	132	Stephenson, Robert	SaBT9.5	136
	SaDT9.3	147	Steppacher, Inga	ThPoS-08.8	61
Soriano, Jaymar	WePoS-28.19	35	Sterr, Annette	ThBT8.6	47
Sorosh, Fariborz	WePoS-20.3	21	Steve, Jiang	FrCT16.3	101
Soroshmehr, S.M.Reza	WeAT3.2	1	Stiber, Michael	WePoS-05.7	14
	WeAT3.5	2	Stickle, Matthew	SaCT18.4	144
	WeAT3.6	2	Stieglitz, Thomas	ThPoS-24.27	77
	WeBT3.3	7		FrBT1.1	89
	WePoS-19.9	21		FrBT1.3	89
	ThCT3.6	51		FrBT1.6	89
	FrCT3.4	96		FrPoS-24.1	112
	SaBT5.3	135		SaAT1.3	127
	SaDT3.5	145		SaAT1.5	127
Soto Eguibar, Enrique	SaDT15.4	148		SaBT1.1	134
Sousa, Inês	FrCT7.2	98	Stockmann, Jason P.	WeAT20.4	6
Souza, Mirayr	WePoS-15.5	18		SaAT8.3	129

Stoddard, Marcus	ThCT7.6	53	Sui, Jing	WePoS-13.4	17
Stofella, Paolo	FrPoS-27.3	113		FrPoS-12.3	107
Stolley, Danielle	ThPoS-18.5	68		SaAT3.2	127
Stone, Scellig	FrAT20.5	89	Suinesiaputra, Avan	WePoS-14.2	17
	SaAT5.2	128	Sujit, Prabhu	FrBT7.2	91
Storebakke, Trond	FrPoS-15.6	108	Sukumar, Santhosh Kumar	WePoS-27.1	32
Storlie, Curtis	SaDT16.6	148	Sul, Onejae	ThPoS-22.16	71
Stotts, Larry	WeAT20.3	6	Sulas, Eleonora	WePoS-22.11	22
	FrPoS-03.3	103	Suliman, Ahmad	WePoS-10.8	16
Stoyanov, Danail	FrBT5.1	90		ThCT19.4	57
Straessle, Rahel	FrPoS-32.35	126		FrPoS-19.7	110
Stramaglia, Sebastiano	ThAT12.5	42	Sullivan, Jane	ThCT10.4	54
Strauss, Daniel J.	WePoS-27.18	33	Sultan, Malik Saad	FrBT10.1	92
	WePoS-27.19	33		FrCT3.1	96
	WePoS-28.12	35		FrCT10.2	99
	WePoS-28.47	37	Sumi, Chikayoshi	FrPoS-29.15	117
	ThPoS-25.30	80	Suminski, Aaron	SaAT8.4	129
	ThPoS-25.36	80	Sumsky, Stefan	ThPoS-15.9	66
	FrCT10.3	99	Sun, Bin	FrPoS-15.8	108
Struszczyk, Marcin	WePoS-24.11	24	Sun, Chang	FrCT6.1	97
Stuart, Samuel	FrBT6.4	90	Sun, Chenglu	ThCT4.6	52
Stubbs, Scott	FrCT14.2	100	Sun, Dongdong	WePoS-24.8	24
Stuijk, Sander	SaBT4.2	135	Sun, Fangmin	FrPoS-31.43	123
	SaDT4.3	146	Sun, Fuchun	ThBT1.1	44
Su, Fei	FrPoS-30.43	120	Sun, Guanghao	WePoS-12.4	17
	SaDT3.1	145		FrPoS-20.6	111
Su, Huan	FrCT8.4	98		FrPoS-28.23	115
Su, Steven Weidong	ThPoS-15.1	66		FrPoS-30.32	120
	SaAT18.3	133		SaBT14.3	137
Su, Xi	WePoS-26.20	30	Sun, Han	FrPoS-20.3	110
	WePoS-26.21	30	Sun, Haoqi	ThPoS-17.5	68
Su, Yi	ThCT3.3	51		SaAT9.2	130
	FrPoS-25.1	112	Sun, Jianqi	WePoS-16.7	19
	FrPoS-25.2	112		FrBT14.5	93
Su, Yung-Chih	WePoS-06.2	14	Sun, Jingpeng	SaDT12.4	147
Suaning, Gregg	ThBT6.3	46	Sun, Junpeng	ThPoS-06.3	60
	ThBT6.6	46	Sun, Li	SaAT3.2	127
	ThCT1.1	C	Sun, Mingfei	SaBT7.5	136
	ThCT1.1	50	Sun, Nian	ThPoS-14.17	66
	ThCT1.6	51	Sun, Shuchen	SaDT12.4	147
	ThPoS-14.21	66	Sun, Songping	WePoS-27.25	33
Suarez Castellanos, Ivan	SaDT14.4	148		ThPoS-26.2	81
Subbaraju, Vigneshwaran	SaCT3.6	140	Sun, Stephanie	ThBT17.1	49
Subbaroyan, Jeyakumar	WeBT5.3	8	Sun, Sukkyu	FrPoS-28.45	116
Subbian, Vignesh	FrPoS-10.7	106	Sun, Wen-Hsien	FrPoS-30.45	121
Subhan, Saqib	FrPoS-17.5	109	Sun, Xiaoyan	ThPoS-26.16	81
Subramanian, Sandya	WeAT2.4	1	Sun, Xinchun	FrPoS-31.44	123
Subramanian, Thyagarajan	WePoS-22.5	22	Sun, Xu	ThPoS-24.39	77
	ThCT1.4	51		FrPoS-32.1	124
Subsol, Gérard	FrPoS-12.1	107		SaDT5.6	146
Succi, Antonio	ThAT4.1	40	Sun, Yirui	FrAT16.5	87
Sudo, Daiki	WePoS-26.23	30	Sun, Yong	ThPoS-25.20	79
Sudo, Naoki	WePoS-26.43	31	Sun, Yu	WePoS-03.8	13
Sudo, Tamami	ThPoS-24.6	75		ThPoS-26.16	81
Sueishi, Tomohiro	FrPoS-32.41	126	Sun, Yubing	ThAT9.1	41
Suematsu, Gregory	FrPoS-28.41	116	Sunada, Shohei	FrPoS-30.35	120
Suga, Kazuhiro	ThPoS-04.8	60	Sunagawa, Genya	WePoS-25.10	26
Sugano, Hidenori	ThPoS-22.25	71		WePoS-25.11	26
Sugano, Shigeki	ThPoS-01.2	58		WePoS-25.12	27
	ThPoS-07.7	61	Sunagawa, Kenji	WePoS-25.10	26
Sugawara, Hisayoshi	ThPoS-11.13	64		WePoS-25.11	26
Sugaya, Kiminobu	SaBT1.5	134		WePoS-25.12	27
Sugaya, Midori	FrPoS-29.3	116		FrBT20.1	CC
Sugimoto, Chika	ThCT15.6	56		FrCT12.1	99
Sugimoto, Keita	WePoS-25.32	28	Sunayama, Wataru	ThAT19.3	44
Sugimoto, Koichiro	ThPoS-02.7	58	Sundaram, Suresh	SaCT3.6	140
Sugimoto, Ryosuke	WePoS-24.34	25	Sundararajan, Narasimhan	SaCT3.6	140
Sugita, Norihiro	ThBT14.2	48	Sunderam, Sridhar	ThAT1.4	39
Sugiura, Suguru	WePoS-26.30	30		ThCT8.5	53
Sugrue, Alan	WePoS-24.36	25		ThPoS-19.7	68
Suh, Myung-Whan	ThPoS-24.9	76		ThPoS-25.41	80
	FrPoS-29.32	118	Sundnes, Joakim	SaBT20.1	139
Suh, Seungbeum	ThPoS-04.4	59	Sung, Chang Yub	FrPoS-32.40	126
	SaDT20.6	149	Sung, David	WePoS-28.35	36
Sühn, Thomas	WePoS-25.47	28	Sung, Dongsuk	FrAT4.4	83
			Sung, Hyunji	ThPoS-25.48	81





Tamai, Akira	ThPoS-11.9	63	Tang, Tong Boon	WeAT1.5	1
Tamaki, Airi	ThPoS-22.31	72		WePoS-16.5	19
Tameji, Tomoya	ThPoS-25.37	80		ThCT14.2	55
Tamura, Marcus	ThAT17.2	43	Tang, Weidi	ThPoS-25.20	79
Tamura, Norihisa	FrPoS-32.36	126	Tang, Xiaoli	ThPoS-25.7	78
Tamura, Toshiyo	WePoS-25.30	27		FrPoS-30.38	120
	WePoS-25.36	28	Tang, Yingying	ThBT13.2	48
	ThAT14.1	42	Tang, Yu-Hsiang	WePoS-26.17	30
	ThAT14.2	42	Tang, Zhenchao	WeBT3.5	7
	FrPoS-28.24	115		FrAT3.3	82
Tamura, Yuichi	SaAT19.1	133		FrPoS-12.4	107
Tan, Bhing-Leet	WePoS-27.36	34	Tangcharoen, Tarinee	ThBT3.3	45
Tan, Chuangqi	ThBT1.1	44	Tanghe, Emmeric	ThPoS-14.1	65
Tan, Huiling	ThCT8.3	53	Tani, Kenjiro	FrBT12.4	93
Tan, Isabella	WeAT14.1	4	Tani, Kentaro	ThPoS-22.40	72
	ThAT14.3	42		ThPoS-23.12	73
	FrAT12.2	85	Taniguchi, Hironari	FrPoS-28.38	116
	FrCT12.4	99		FrPoS-32.2	124
Tan, Jack Wei Chieh	WePoS-26.20	30	Tanimura, Nozomi	FrPoS-32.22	125
	WePoS-26.21	30	Tanis, Daniel	ThPoS-24.1	75
	WePoS-26.42	31		SaCT6.3	141
Tan, Jingqian	ThPoS-20.7	69	Tankasala, Divya	FrPoS-04.5	103
	FrPoS-18.6	110	Tansley, Geoff	FrCT4.1	96
Tan, Joo Kooi	ThBT19.5	50		SaBT12.6	137
Tan, Ju Le	ThBT3.3	45	Tao, Anna	WePoS-27.25	33
	FrPoS-25.1	112	Tao, Chunjing	WePoS-24.2	23
Tan, Ru San	WePoS-14.5	18	Tao, Linkai	ThCT4.6	52
	WePoS-26.20	30	Tao, Tangfei	FrPoS-06.2	104
	WePoS-26.21	30	Tao, Wanjun	FrPoS-31.44	123
	WePoS-26.42	31	Tao, Xing	ThBT17.2	49
	ThBT3.3	45	Taoping, Liu	SaAT18.3	133
	FrPoS-25.1	112	Taraldsen, Kristin	FrPoS-28.20	115
	FrPoS-25.2	112	Tarassenko, Lionel	FrPoS-22.2	111
Tan, Swee Yaw	WePoS-26.20	30		SaDT16.1	148
	WePoS-26.21	30	Tarigoppula, Aditya	WeBT1.1	6
	WePoS-26.42	31	Tarnaud, Thomas	ThPoS-14.1	65
Tan, Tan-Hsu	WePoS-24.26	25	Tarniceriu, Adrian	SaAT13.1	131
	WePoS-27.10	32	Tartaglini, Daniela	FrAT19.1	88
Tan, Tele	WePoS-03.1	12	Tarumi, Shinji	WePoS-25.14	27
	FrAT11.4	85	Taruno, Kanae	WePoS-26.50	32
Tan, Ying	ThPoS-21.2	69	Tateyama, Naoki	WePoS-25.7	26
	ThPoS-21.12	70	Taurino, Irene	FrPoS-02.1	102
	FrBT13.2	93	Tavakolian, Kouhyar	ThAT15.4	43
Tanaka, Akira	ThBT14.1	CC	Tavassolian, Negar	FrPoS-01.4	102
	ThBT14.2	48		SaBT19.4	139
	ThBT14.3	48	Tayama, Takashi	ThPoS-02.7	58
Tanaka, Hideyuki	FrPoS-10.1	105	Taylor, Doris	FrCT4.2	96
Tanaka, Hirokazu	ThPoS-22.47	72	Taylor, John	FrBT1.4	89
	FrPoS-30.44	120	Taylor, Sara	WeAT12.4	4
Tanaka, Hiroki	WePoS-24.44	25		ThBT17.5	49
	ThAT1.1	39		FrPoS-31.49	124
Tanaka, Kazutoshi	WePoS-29.21	38	Taylor, Terrie	SaDT5.5	146
	ThCT6.2	52	Taylor, Zachary	FrPoS-28.41	116
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	ThCT6.5	53	Tchoumbiap Fohom, Daniele Raissa	FrPoS-30.7	119
	ThCT6.6	53	Tchuente Kemdjo, Franck Fabrice	FrPoS-28.25	115
Tanaka, Kentaro	FrBT12.4	93	Tchuente, Maurice	FrPoS-30.7	119
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Tanaka, Mai	FrPoS-30.19	119	Teatini, Andrea	ThPoS-06.4	60
Tanaka, Masayuki	SaCT12.1	142	Techaniyom, Pichayada	FrPoS-15.7	108
Tanaka, Naoto	FrPoS-30.47	121	Tedesco, Mariateresa	ThPoS-25.11	79
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Tanaka, Toshiyuki	WePoS-24.5	23		SaBT17.1	138
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Tanaka, Yo	WePoS-26.34	31	Teixeira, César	FrPoS-09.5	105
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Tang, Jianbin	SaBT2.5	134	Temko, Andriy	FrPoS-19.6	110
Tang, Julia	ThPoS-08.9	61		SaAT14.4	131
Tang, Shih-Tsang	WePoS-07.1	15		SaCT7.2	141
Tang, Stephen	FrPoS-01.3	102		SaDT2.1	145
			Tempel-Brami, Catherine	FrAT20.4	88

Teo, Sin Gee	WePoS-14.6	18	Tian, Jie	WeBT3.5	7
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Teo, Soo Kng	WePoS-26.20	30		FrPoS-12.4	107
	WePoS-26.21	30	Tian, Kaibing	WeBT3.5	7
Teodoro, George	WePoS-20.2	21	Tian, Lin	FrPoS-12.3	107
	FrCT3.2	96	Tian, Sen	ThPoS-09.12	62
	SaAT3.5	128	Tian, Xin	SaBT16.1	138
Teoh, Jeremy Yuen-Chun	FrPoS-08.1	104	Tian, Xincheng	ThPoS-11.2	63
Teoh, Kean H	WePoS-15.4	18		ThPoS-19.4	68
Terada, Tsutomu	ThPoS-26.1	81	Tian, Ye	WeAT9.2	3
	FrPoS-31.19	122	Tian, Zhaoyin	WePoS-25.30	27
Terai, Kenta	ThPoS-24.3	75		WePoS-25.36	28
Teramoto, Atsushi	WePoS-25.35	28	Timm, Gerald W.	FrCT4.6	97
	WePoS-27.17	33	Tin, Chung	SaDT19.2	149
	ThBT19.6	50	Ting, Jordyn	WeAT6.3	2
	ThPoS-23.11	73	Ting-Yu, Ho	ThPoS-25.35	80
	FrPoS-31.21	122	Tinkhauser, Gerd	ThPoS-16.6	67
Terashi, Hiroo	WePoS-24.28	25		FrCT20.1	101
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Terenzi, Michela	SaAT2.5	127	Tiseo, Carlo	ThPoS-02.1	58
Terius-Padron, Jose G.	WePoS-24.23	24		ThPoS-06.1	60
Terrill, Philip Ian	ThAT18.2	44	Titus, Albert	FrPoS-05.5	104
Terrones, Mauricio	SaDT15.1	148	Tiwari, Vijay Narayan	SaAT18.2	133
Terry, Jefferson	FrCT5.6	97		SaAT19.2	133
Terse, Trupti	WePoS-26.6	29		SaBT18.1	138
Tesei, Marco	SaCT18.1	144	Tkacz, Ewaryst	SaCT12.6	142
Tessadori, Jacopo	ThPoS-25.11	79	Toda, Hiroyuki	WePoS-24.28	25
Tey, Hongliang	FrPoS-29.4	116		WePoS-25.37	28
Thakor, Nitish	WeBT2.2	7	Todaka, Koji	FrCT12.1	99
	WePoS-03.8	13	Toffolo, Gianna	ThPoS-18.4	68
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	FrPoS-06.3	104		SaCT14.4	143
Thanapongpibul, Chalaisorn	FrPoS-15.9	108	Tognetti, Alessandro	FrPoS-21.7	111
Thanopoulou, Anastasia	WePoS-28.20	35	Togo, Hiroyoshi	FrPoS-31.16	122
Thanou, Maya	WePoS-23.4	23	Toh, Valerie	ThBT1.6	45
Tharion, George	ThPoS-25.23	79		ThPoS-09.16	62
Thatcher, Jeffrey	WePoS-16.12	19	Tohmeh, Annas	WePoS-28.8	35
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Thatte, Nitish	FrPoS-15.9	108	Tojiki, Hajime	WePoS-25.49	29
Thedrattanawong, Chitinart	ThAT1.3	39	Tokgoz, Serkan	FrCT9.1	98
Theil Sørensen, Allan	FrBT11.3	92	Tokito, Shizuo	FrPoS-32.48	126
Theodorou, Evangelos	FrAT8.1	84	Tokouts, Zoi	WePoS-27.27	33
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Thibault, Guillaume	WePoS-16.8	19	Tokuno, Shinichi	WePoS-24.28	25
Thibodeau, Linda	ThBT11.3	48		WePoS-24.49	26
Thielscher, Axel	WeAT20.5	6		WePoS-25.6	26
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Thinnes, David	WePoS-27.18	33	Tolkacheva, Elena	FrAT12.1	85
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	WePoS-28.12	35		SaDT7.2	147
Thirumuruganathan, Saravanan	FrPoS-11.5	106	Tolks, Christian	SaCT19.1	144
Thiyagarajah, Nishanth	WeBT5.4	8	Tomaiuolo, Leonardo	WePoS-10.1	16
Thoma, George	WePoS-17.3	19	Tomas-Fernandez, Xavier	FrAT20.5	89
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Thomas, Chris	ThPoS-16.11	67	Tomassoni, Lorenzo	ThPoS-17.3	68
	FrBT8.4	91	Tombe, Takafumi	WePoS-24.46	26
	FrCT8.6	98	Tomic, Goran	ThPoS-21.4	69
Thomas, Dennis C.	WePoS-23.9	23	Tomizuka, Masayoshi	ThPoS-01.6	58
Thomas, Diana	WeAT10.2	3	Tong, Kai Yu, Raymond	WePoS-03.2	12
Thomas, Emily	WePoS-14.1	17		ThAT3.3	39
Thomas, Ilias	SaBT19.1	139		ThPoS-16.10	67
Thomas, John	FrBT11.2	92		ThPoS-16.12	67
Thomas, Peter	SaBT12.5	136		ThPoS-21.13	70
Thompson, David	WePoS-10.8	16	Tong, Michael C. F.	ThPoS-20.7	69
	ThPoS-09.11	62	Tong, Shanbao	WeAT1.6	1
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Thyagarajan, Sridevi	FrAT12.4	86	Töreyin, Hakan	FrPoS-29.22	117
			Torous, John	WeAT8.1	C
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Torres, Abel	FrBT20.2	95	Tsuji, Toshio	WePoS-29.10	38
	FrBT20.4	95		FrPoS-19.3	110
Toschi, Nicola	WePoS-13.11	17		FrPoS-23.1	112
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Tosi, Jacopo	FrPoS-17.1	109		SaBT7.4	136
Tosun, Pinar Deniz	ThPoS-22.19	71		SaBT7.5	136
Toth, Daniel	WePoS-14.1	17	Tsujimoto, Masakazu	WePoS-25.35	28
	ThBT3.2	45		ThBT19.6	50
Toth, Janos	FrCT16.2	100	Tsujimura, Seiya	FrPoS-32.48	126
Totsuka, Kiyohito	ThPoS-02.7	58	Tsuijuchi, Nobutaka	FrPoS-06.4	104
Totsuka, Masaaki	SaCT7.3	141		FrPoS-28.35	115
Totten, Douglas	ThPoS-25.10	79	Tsukada, Shingo	FrPoS-31.16	122
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Toyama, Hiroshi	WePoS-25.35	28	Tsukahara, Takahiro	FrBT12.4	93
	ThBT19.6	50		FrPoS-28.37	116
Toyoda, Kentaroh	ThCT16.1	56	Tsukamoto, Tetsuya	ThBT19.6	50
Tran, Anh Le	WeBT20.6	11		ThPoS-23.11	73
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Tran, Minh Ha	FrCT11.1	99	Tu, Liyun	ThBT9.3	47
Tran, Son	FrCT16.6	101	Tu, Yanshuai	SaAT3.1	127
Tran, Tracie	FrCT11.6	99	Tu, Zhi	SaAT10.5	130
Traver, Vicente	WeBT2.4	7	Tucker, Emerson	FrPoS-10.5	106
	FrBT16.4	94	Tuli, Sayema	FrPoS-17.6	109
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Treeby, Bradley E.	SaCT14.1	143	Tung, Kuei-Ling	ThPoS-18.2	68
Tremblay, Mike	FrPoS-11.2	106		SaAT20.1	133
Trew, Mark L.	WePoS-14.7	18	Tunik, Eugene	FrBT8.3	91
	FrAT9.2	84	Tuninetti, Daniela	ThPoS-14.7	65
	SaAT12.1	130	Turianikova, Zuzana	SaCT7.1	141
Triandafilou, Kristen M.	ThBT7.2	46	Turki, Ahmad Fawzi	FrPoS-29.21	117
Triantis, Iasonas	SaBT14.5	137	Turner, Robert	SaBT18.5	138
Tridandapani, Srini	ThAT15.2	43	Tüshaus, Laura Margarete	SaCT10.4	142
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Tripathy, Soumya Ranjan	FrPoS-09.2	105	Twibell, Ashlyn	FrPoS-01.8	102
Tripoliti, Evanthia	FrPoS-04.2	103	Tyler, Dustin	ThAT5.3	40
Trivedi, Kishor	SaBT16.5	138	Tyrer, Harry	FrPoS-16.6	109
Tromberg, Bruce	FrAT15.4	87	Tzioufas, Athanasios	FrPoS-11.3	106
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Truccolo, Wilson	ThBT1.4	45			
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Truex, Don	FrAT13.1	86			
Trumpis, Michael	SaAT1.4	127			
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Truong, Bao C. Q.	FrPoS-03.2	103			
Tsai, Chia-Fen	WePoS-25.15	27			
Tsai, David	ThPoS-14.21	66			
Tsai, Ming-Dar	WePoS-23.12	23			
Tsai, Ming-Hong	FrPoS-31.18	122			
Tsai, Tsung Tso	FrPoS-30.45	121			
Tsao, Yu	WePoS-07.1	15			
	ThPoS-20.5	69			
Tseng, Chih-Hsin	FrPoS-28.27	115			
Tseng, Ning-Hsuan	ThAT9.1	41			
Tseng, Ting-Chen	FrPoS-31.18	122			
Tsiouris, Kostas	FrCT2.2	96			
Tsompou, Panagiota	WePoS-22.7	22			
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Udaya, Parampalli	WePoS-19.1	20
Udotong, Isaiah	SaCT17.2	144
Ueda, Kazutaka	WePoS-25.7	26
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Uemura, Munenori	WePoS-29.14	38
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Ueshima, Kazuo	FrPoS-31.29	123
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Ukil, Arijit	WePoS-10.3	16		ThPoS-11.6	63
Ulbricht, Leandra	FrPoS-04.4	103	Valigi, Paolo	ThPoS-17.3	68
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Ullrich, Roman	ThCT13.4	55	van de Ruit, Mark	WeBT10.3	9
Um, Ji-Yong	FrPoS-29.8	117		WeBT10.4	9
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Umemura, Guilherme Silva	SaAT14.3	131	Van Hoecke, Sofie	WePoS-16.6	19
Umetani, Tomohiro	SaAT19.1	133	van Kessel, Theodore	FrPoS-32.35	126
Umezaki, Taizo	SaAT19.3	133	Van Leeuwen, Spencer Richard	SaDT20.4	149
Umezu, Mitsuo	WeAT18.2	5	Van Steenkiste, Tom	WePoS-09.1	15
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Umezu, Tomohiro	WePoS-27.39	34	Van Waarde, Jeroen Antonius	ThBT20.3	50
Ung, Wei Chun	ThCT14.2	55	van Wingen, Guido	ThBT20.3	50
Unger, Laura Anna	WePoS-10.5	16	van Wingerden, Jan-Willem	WeBT10.3	9
	SaBT20.1	139	Van, Kinh Nguyen	WePoS-12.4	17
Uo, Motohiro	ThPoS-04.8	60	Vandecasteele, Florian	WePoS-16.6	19
Upputuri, Paul Kumar	WeAT13.2	4	Vandersmissen, Baptist	WePoS-16.6	19
Uraguchi, Maki	WePoS-26.16	30	Vanello, Nicola	WePoS-02.8	12
Uraguchi, Tomotaka	WePoS-25.9	26		SaAT2.3	127
Urbano, Diamond	ThPoS-08.9	61	Vangelatos, Zacharias	ThPoS-03.7	59
Urbini, Mike	WeAT6.4	2	VanGenderen, Brandon	FrPoS-28.12	114
Urdaneta, Morgan E	WeAT17.1	5	Vanrumste, Bart	SaCT4.4	141
Urfer, Alex	ThCT12.3	55	Vaquerizo-Villar, Fernando	WeBT13.2	9
Urman, Noa	ThCT20.5	58		WeBT13.4	10
Urru, Monica	WePoS-22.11	22	Vargas, Luis	ThPoS-14.6	65
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	SaAT14.5	131	Varnava, Giorgos	FrPoS-23.4	112
Utsumi, Yuria	FrPoS-08.10	105	Varnfield, Marlien	ThCT16.5	56
Uygun, Korkut	FrBT10.3	92	Varsa, Petri	SaAT18.4	133
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Vai, Mang I.	FrPoS-03.1	103	Vazquez-Payno, Alberto	ThPoS-25.5	78
Vaidya, Mukta	WePoS-28.21	35	Vedagiri Pushpanathan, Karthik	FrPoS-32.37	126
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Vainikainen, Sari	SaCT16.2	143	Veiga, Diana	FrCT3.1	96
Valdovinos, John	ThCT13.6	55		FrCT10.2	99
	FrPoS-18.5	109	Veihl, Marjorie	SaBT16.5	138
Vale, Luke	WePoS-26.5	29	Veitch, Brian	FrPoS-32.50	126
Valencia Murillo, Jose Fernando	ThAT12.2	42	Vela, Patricio A.	ThPoS-13.6	65
Valencia, Lisa	FrPoS-19.4	110	Velardo, Carmelo	FrPoS-22.2	111
Valenza, Gaetano	WePoS-02.8	12		SaDT16.1	148
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	WePoS-10.7	16	Velázquez, José-Miguel	ThCT9.2	54
	WePoS-11.5	16	Velickovski, Filip	ThCT16.3	56
	ThAT2.1	CC	Vellidou, Eleftheria	ThPoS-23.21	74
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	FrBT2.1	C	Vempada, Ramu Reddy	FrPoS-16.4	109
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	FrBT7.6	91	Vempala, Vibhavari	FrPoS-06.5	104
	SaAT2.3	127	Vendrame, Martina	WePoS-04.6	13
	SaCT7.5	142	Venema, Boudewijn	WePoS-21.5	21
			Venkatachalam, K.L.	WePoS-24.36	25
			Venkatasubramanian, Ganesan	ThPoS-16.11	67
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Verghese, George	FrBT20.5	95		SaAT13.5	131
	FrPoS-01.1	102	Voß, Samuel	ThCT6.1	52
	SaBT12.4	136	Vrba, Jan	SaBT17.3	138
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	FrAT17.1	87		SaCT6.4	141
Verkruysse, Wim	SaBT4.2	135	Vullings, Rik	ThCT11.2	54
Verma, Vijay Kumar	ThAT9.2	41		SaDT12.1	147
Veroy, Karen	WePoS-27.27	33	Vupputuri, Anusha	WePoS-18.3	20
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Vettoretti, Martina	WeAT2.2	1			
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Vicory, Jared	SaCT18.3	144			
Victor B., Xie	ThCT7.1	53			
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Vidotto, Marco	ThPoS-13.7	65			
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Vieira Guimaraes, Leticia	WePoS-15.5	18			
Vieira Pigatto, Andre	FrPoS-16.3	109			
Viergever, Max A.	ThBT5.4	46			
Viezel-Mathieu, Alex	WePoS-23.7	23			
Viga, Reinhard	ThPoS-23.7	73			
Vigotsky, Andrew	ThCT12.1	55			
Vijande, Javier	SaDT20.3	149			
Vijayakumar, Sethu	FrCT20.3	101			
Vila, Gael	ThBT2.2	45			
Villa Montoya, Luisa Fernanda	WePoS-12.1	16			
Villafana-Ibarra, Bernardo	FrPoS-28.11	114			
	FrPoS-32.5	124			
Villalon Reina, Julio Ernesto	ThPoS-25.16	79			
Villamar, Mauricio	ThPoS-19.7	68			
Villanueva-Mascato, Samanta	WePoS-24.20	24			
Villard, Benjamin	ThPoS-22.4	70			
Villaroman, Andrea	WePoS-29.15	38			
	FrCT16.5	101			
Vince, Geoff	ThCT9.5	54			
Vincent, Filoteo	FrBT19.1	94			
Vincent, Marion	ThPoS-14.12	65			
Vinchhi, Bakul	FrPoS-05.6	104			
Vinehout, Kaleb	FrAT14.1	86			
Vinjamuri, Ramana	SaAT11.2	130			
Viotti, Rodrigo	FrPoS-27.5	113			
Viraraghavan, Venkata Subramanian	FrPoS-16.4	109			
	SaAT18.5	133			
Visagie, Dallas	FrPoS-28.12	114			
Visentin, Roberto	WeBT12.4	9			
	SaAT15.4	132			
Viswanath, Varun	SaCT2.2	140			
Vitiello, Nicola	FrPoS-31.24	122			
Vitiello, Tyler	FrBT11.4	92			
Viventi, Jonathan	FrCT1.1	95			
	SaAT1.4	127			
	SaBT1.3	134			
Vlaisavljevich, Eli	SaDT14.5	148			
Vlajinic, Branislav	WePoS-24.36	25			
Vo, Jesse	FrBT4.3	90			
Vogel, Dorian	ThPoS-14.15	65			
Vogel, Jörn	ThPoS-02.5	58			
	ThPoS-13.1	64			
Vogt, Marcel	SaBT14.2	137			
Voleti, Venkatakaushik	FrAT15.2	87			
Vollero, Luca	FrAT19.1	88			
Volosyak, Ivan	ThPoS-09.2	62			
Volta, Carlo Alberto	FrPoS-31.10	121			
Vomero, Maria	FrPoS-24.1	112			
Von Arx, Jeffrey	WeAT20.3	6			
	FrPoS-03.3	103			

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Wach, Benoît	ThPoS-02.4	58
Wada, Daijiro	ThPoS-23.48	75
Wada, Yuki	WePoS-21.7	22
Wadamori, Naoki	ThCT17.4	56
Wade, Eric	ThPoS-21.10	70
	FrBT11.5	92
	FrBT17.1	94
	FrPoS-29.12	117
Wadehn, Federico	FrAT6.1	83
Wadi, Husam	WePoS-23.10	23
Wadnap, Soham	FrPoS-30.41	120
Wagatsuma, Hiroaki	FrCT2.4	96
Wagner, Fabien	ThCT10.3	54
Wahid, Md. Ferdous	WePoS-27.15	32
Wakabayashi, Satoshi	WePoS-26.41	31
Wald, Lawrence L.	WeAT20.4	6
	SaAT8.3	129
Wall, Samuel	SaBT20.1	139
Wallace, John	SaBT18.5	138
Wallner, Jürgen	WePoS-16.2	18
Walsh, Conor	WeAT18.6	5
Walter, Marian	ThAT8.4	41
	FrCT9.3	98
Walter, Peter	ThPoS-23.7	73
Walton, Joseph	ThCT1.2	51
Walz, J. Matthias	WePoS-24.31	25
Wan, Bai-kun	FrAT1.1	82
Wan, Sen	WePoS-25.21	27
Wan, Shanshan	SaDT14.5	148
Wan, Yuqing	ThPoS-22.20	71
Wander, Miah	FrPoS-31.33	123
Wang, Anran	SaBT14.4	137
Wang, Boshi	SaAT10.5	130
Wang, Boshuo	ThPoS-15.2	66
Wang, Charles	FrCT1.1	95
Wang, Chen	WePoS-27.11	32
Wang, Chenyu	ThPoS-25.12	79
Wang, Chuanchu	WePoS-04.9	13
	ThPoS-09.13	62
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Wang, Chuanmeizhi	FrAT6.4	83
Wang, Ergang	SaAT20.1	133
Wang, Fa	SaDT12.3	147
Wang, Faqi	WePoS-03.5	12
Wang, Feng	FrBT17.4	94
Wang, Fusheng	WePoS-20.2	21
	SaAT3.5	128
Wang, Guanjin	FrPoS-08.1	104
Wang, Guijin	FrAT2.1	CC
	FrAT2.2	82
	FrAT2.3	82
	FrAT9.1	84
Wang, Guoxing	WeBT17.2	11
	FrBT2.3	89
	FrCT9.5	98

Wang, Haifeng	WeBT6.6	8	Wang, Shuo	WeBT3.5	7
	WePoS-18.1	20		FrAT3.3	82
	FrAT5.4	83		FrPoS-12.4	107
Wang, Haiqing	FrAT9.1	84	Wang, Sikai	WePoS-08.3	15
Wang, Haofei	ThPoS-09.19	62	Wang, Siqi	SaAT13.4	131
Wang, Hao-Jen	WePoS-28.13	35	Wang, Taylor	FrBT7.2	91
Wang, Hengbing	FrAT16.5	87	Wang, Tianfu	WePoS-18.7	20
Wang, Hongmei	ThPoS-24.39	77		ThCT3.1	51
	FrPoS-31.15	122	Wang, Tianyi	FrPoS-30.21	119
	FrPoS-32.1	124	Wang, Tong	ThPoS-22.41	72
Wang, Hongzhang	FrAT17.4	87		FrCT8.5	98
Wang, Hui	WePoS-06.3	14	Wang, Tza-Huei	FrPoS-24.4	112
	ThCT7.6	53		SaBT15.4	137
	FrPoS-18.6	110		SaBT15.5	137
	SaAT4.5	128	Wang, Weiqun	WePoS-27.11	32
Wang, Huifang	FrPoS-28.21	115		ThPoS-16.2	67
Wang, Jiang	FrBT9.2	91	Wang, Xi	FrBT1.6	89
Wang, Jianqing	ThPoS-23.29	74	Wang, Xianping	FrPoS-15.1	108
Wang, Jiaying	ThPoS-16.2	67		FrPoS-15.2	108
Wang, Jie	WePoS-14.6	18		SaCT15.1	143
	WePoS-16.14	19	Wang, Xiaojun	ThPoS-16.10	67
Wang, Jing	FrCT16.3	101		ThPoS-21.13	70
	FrPoS-22.4	111	Wang, Xiaoni	ThBT13.3	48
Wang, Jingying	ThPoS-25.47	81	Wang, Xiaoyan	WePoS-18.1	20
Wang, Karen	WePoS-28.31	36	Wang, Xin	ThAT3.3	39
Wang, Ke	WeBT3.5	7		ThPoS-16.12	67
Wang, Kuanquan	SaBT20.5	139		ThPoS-21.13	70
Wang, Kun	WePoS-02.3	12		FrPoS-18.6	110
	WePoS-03.5	12	Wang, Xing	ThPoS-14.19	66
Wang, Kuocheng	WePoS-27.32	33		ThPoS-20.6	69
Wang, Lei	WePoS-06.3	14	Wang, Xiqing	SaBT4.3	135
	ThPoS-20.4	69	Wang, Xiu Ying	WePoS-17.4	19
	ThPoS-20.5	69		SaDT16.3	148
	FrCT13.5	100	Wang, Xiuyuan	ThCT3.4	51
	SaAT17.6	132	Wang, Xuelin	FrBT17.1	C
Wang, Li	ThBT9.4	47		FrBT17.4	94
	ThCT3.3	51	Wang, Xurong	SaBT16.4	138
Wang, Liang	WeBT3.5	7	Wang, Yalin	WeBT3.1	7
Wang, Lihui	FrPoS-31.3	121		SaAT3.1	127
Wang, Lin	FrCT7.3	98	Wang, Yaming	ThPoS-13.2	64
Wang, Ling	WePoS-03.5	12	Wang, Yan	WePoS-18.6	20
	WePoS-25.22	27		ThBT13.1	48
Wang, Ludi	WePoS-11.3	16	Wang, Yang	FrAT18.5	88
Wang, May D.	ThCT5.6	52		FrPoS-18.1	109
	FrPoS-09.7	105	Wang, Yanli	SaBT3.2	134
Wang, Min	FrBT2.3	89	Wang, Yao	WePoS-03.9	13
	FrPoS-31.44	123		ThCT3.4	51
Wang, Minghui	WePoS-24.8	24		ThPoS-11.7	63
	WePoS-24.9	24		SaBT3.5	134
Wang, Mingshan	ThCT15.5	56	Wang, Yaoyao	ThPoS-13.2	64
Wang, Mixia	FrCT4.3	96	Wang, Yaxin	FrPoS-25.3	112
	SaAT1.2	127		FrPoS-25.4	112
Wang, Po T.	WePoS-28.21	35		FrPoS-25.6	113
	ThPoS-19.8	68	Wang, Yijun	ThCT4.5	52
	FrCT11.6	99		ThPoS-09.12	62
	SaAT8.2	129		FrAT1.2	82
	SaDT9.4	147	Wang, Yingying	FrBT17.5	94
Wang, Po-Min	SaCT1.5	140	Wang, Yinong	ThPoS-09.3	62
Wang, Qiang	WePoS-25.22	27	Wang, Yiwen	WePoS-01.3	12
Wang, Qiaoli	WePoS-25.31	28		ThPoS-09.19	62
Wang, Qifan	WePoS-21.6	22		SaDT19.3	149
Wang, Qing	ThPoS-24.25	77	Wang, You-Yu	WePoS-28.22	36
	FrPoS-30.43	120	Wang, Yuan	WePoS-03.9	13
Wang, Qining	FrBT13.4	93	Wang, Yuehang	WeAT13.1	4
	FrPoS-06.1	104	Wang, Yufeng	SaAT3.2	127
Wang, Qun	FrAT16.4	87	Wang, Yunlong	ThPoS-23.26	74
	SaBT16.1	138	Wang, Yunmei	FrAT3.3	82
Wang, Rosalind	SaAT18.3	133	Wang, Yushan	ThPoS-14.3	108
Wang, Ruikang	SaBT4.2	135		SaAT5.1	128
Wang, Ruofan	FrBT9.2	91	Wang, Yu-Te	WeBT1.5	6
Wang, Ruoshi	WePoS-14.6	18		ThPoS-09.10	62
Wang, San-Ping	ThPoS-16.8	67	Wang, Zeyu	ThCT4.6	52
Wang, Shangxian	ThCT19.4	57		FrAT16.5	87
Wang, Shouyan	ThPoS-25.47	81	Wang, Zhaoxiang	WePoS-25.40	28
				ThPoS-14.4	65



Wang, Zhenchang	ThPoS-22.21	71	Weiland, James	WeBT17.4	11
	ThPoS-22.37	72		ThBT6.4	46
Wang, Zheng	WePoS-25.22	27		ThCT1.1	CC
Wang, Zhigong	ThPoS-15.2	66		ThPoS-24.18	76
	ThPoS-23.26	74		ThPoS-24.26	77
	FrPoS-31.44	123		FrAT1.1	C
Wang, Zhiguang	ThPoS-14.17	66		FrBT1.5	89
Wang, Zhihui	SaCT20.2	145		FrCT6.4	97
Wang, Zhilong	SaAT3.3	127		FrPoS-31.34	123
Wang, Zhiwei	ThPoS-07.4	61	Weimer, James	FrPoS-03.4	103
Wang, Zhongpeng	FrAT1.1	82	Weinberg, Uri	ThCT20.5	58
Wang, Zi	SaBT20.3	139	Weir, Richard	WeBT5.5	8
Wang, Ziheng	ThPoS-04.7	59	Weiskopf, Nikolaus	WeAT20.1	6
Waraich, Atif	FrPoS-01.3	102	Weiss, Jeffrey	WeAT6.1	2
Ward, Kevin	WeAT3.2	1	Weiss, Jonas	FrPoS-32.35	126
Wardell, Karin	ThPoS-14.15	65	Weitz, Andrew	ThBT6.4	46
Warfield, Simon K.	FrAT20.5	89	Welle, Elissa	WeAT17.5	5
	SaAT5.2	128	Welling, Theodore	SaDT14.5	148
Waris, Asim	SaBT9.2	136	Wellman, David Andrew	ThAT18.2	44
Warnapura, Chamari	FrAT10.5	85		SaAT9.6	130
Warren, Steve	WePoS-10.8	16	Wells, Kevin	FrCT6.6	97
	ThCT19.4	57	Weltman Hirschberg, Ahuva	ThAT6.1	40
	FrPoS-19.7	110	Wen, Chengfeng	WeBT3.1	7
Wartman, William	WeAT20.2	6		SaAT3.1	127
Waschkowski, Florian	ThPoS-23.7	73	Wenger, Cornelia	ThCT20.5	58
Wasemiller, David	SaAT13.4	131		FrAT20.4	88
Waser, Markus	SaDT9.3	147	Wensheng, Fan	WePoS-16.12	19
Watabe, Koichi	WePoS-29.9	38		WePoS-17.5	20
Watanabe, Ai	SaCT18.5	144	Werginz, Paul	ThBT6.2	46
Watanabe, Hiroki	ThAT1.1	39		ThPoS-20.2	69
Watanabe, Kei	FrPoS-28.4	114	Wesley, Bolch	WeBT20.2	11
Watanabe, Kento	SaCT4.6	141	Wessel, Jan	FrBT4.5	90
Watanabe, Ryusuke	ThAT19.4	44		SaDT4.5	146
Watanabe, Satoshi	WePoS-24.45	26	Westawski, Sean	WePoS-27.42	34
Watanabe, Satsuki	WePoS-27.43	34		ThPoS-25.42	80
Watanabe, Shogo	ThPoS-22.15	71	Westenberg, Jos	ThBT3.3	45
	ThPoS-22.17	71	Westlund Schreiner, Melinda	ThBT13.6	48
	ThPoS-22.18	71		FrAT11.1	85
Watanabe, Yoshiaki	WePoS-28.6	35		SaAT9.4	130
Watanabe, Yoshihiro	FrPoS-32.41	126	Westover, Brandon	ThPoS-17.5	68
Watenpugh, Donald	FrAT9.6	85		FrBT11.2	92
Watkins, Gregory Douglas	ThCT1.1	50		FrCT2.3	96
Watkins, Nathan G.	FrPoS-11.9	106		SaAT9.2	130
Watson, Paul	FrPoS-32.39	126		SaAT9.2	130
Webb, Jeffrey	WePoS-26.12	29	Wex, Cora	WePoS-25.47	28
Weber, Arthur	FrCT1.2	95	Wheeler, Bruce	ThCT19.1	C
Weber, Douglas	WeAT6.4	2	White, Austin	WeAT1.4	1
Weber, Marcus J.	FrBT4.3	90		ThAT20.6	44
Weber, Thilo	FrAT6.1	83	White, David P	ThAT18.2	44
Webster, John G	ThCT19.5	57	White, John	WeBT18.1	C
	FrCT4.4	97		WeBT18.1	11
	SaDT12.3	147	White, Kevin A.	SaBT1.5	134
Webster-Wood, Victoria	WePoS-27.20	33	White, Shane	FrPoS-30.1	118
Weddell, Stephen J.	FrBT6.3	90	Whitehead, William	WePoS-21.4	21
Wee, Seng Kwee	FrPoS-15.5	108	Whitmore, Mariah	ThAT11.1	42
Weeks, William A.	SaCT4.2	140	Whittle, Andrew Brian	WePoS-22.8	22
Wei, Dan	WePoS-20.1	21	Whitworth, Avon	FrPoS-30.25	119
Wei, Jinwen	FrCT6.1	97	Wi, Hun	WeAT4.2	2
Wei, Li	FrPoS-18.3	109		ThBT4.3	46
Wei, Na	ThPoS-11.2	63	Wick, Carson A	ThAT15.2	43
	ThPoS-19.4	68	Wickramasuriya, Dilranjan	FrCT9.4	98
Wei, Wei	WeBT3.5	7	Widge, Alik	FrAT20.1	88
	FrAT3.3	82		SaAT7.5	129
	FrPoS-12.4	107	Widmann, Jim	FrPoS-32.3	124
Wei, Xile	WeBT18.3	11	Wieczorek, Tyler	ThPoS-13.4	64
	FrBT9.2	91	Wieselthaler, Georg	WePoS-29.1	37
Wei, Xunbin	WePoS-20.1	21	Wiest, Joachim	ThBT10.1	C
Wei, Zhong, Zheng	WePoS-07.1	15		ThBT10.2	47
				ThBT10.3	48
				ThBT10.4	48
			Wigdahl, Jeffrey	SaDT5.5	146
			Wiggins, Harvey	WePoS-27.26	33
			Wijesuriya, Mahen	FrAT10.5	85
			Wilcox, Matthew	ThCT7.4	53
			Wilkes, Scott	WePoS-26.5	29
			Willett, DuWayne	WePoS-28.31	36

Willett, Francis	WeBT1.6	6	Worlikar, Tejaswi	SaDT14.5	148
Williams, Ashley	SaAT1.4	127	Wright, John	FrBT5.3	90
	SaBT1.3	134	Wright, Steven M.	ThCT7.1	C
Williams, Cranos	WePoS-20.4	21		ThCT7.5	53
Williams, Haleigh	WeAT12.3	4	Wright, Zachary	ThBT7.5	47
	WePoS-28.33	36		ThPoS-21.11	70
Williams, Justin	SaAT8.4	129	Wtorek, Jerzy	SaCT19.2	144
Williams, Keith	SaDT4.2	146	Wu, Chien-Te	WePoS-25.15	27
Williams, Rhys	ThPoS-01.7	58	Wu, Chueh-Hung	ThPoS-23.39	75
Williams, Ryan	WePoS-29.1	37	Wu, Derek	SaCT19.3	144
Williamson, Craig	WeBT3.3	7	Wu, Ed X.	ThCT7.1	53
	SaDT3.5	145		SaCT3.3	140
Williamson, James	WePoS-28.14	35		SaCT3.4	140
Wilson, Christopher	SaBT12.5	136	Wu, Edzer L.	ThPoS-24.47	78
Wilson, Robert	FrAT15.4	87	Wu, Eric	SaBT12.6	137
Wind, Alexander	ThAT11.3	42	Wu, Guorong	SaBT3.2	134
Winkler, Alexander	FrPoS-10.5	106	Wu, Holden	ThPoS-26.3	81
Winkler, Jeff	WePoS-07.5	15	Wu, Huiyi	SaAT9.5	130
	ThPoS-22.9	70	Wu, Jian	ThPoS-26.5	81
	FrPoS-30.16	119	Wu, Jianfeng	SaAT3.1	127
Winsky-Sommerer, Raphaelle	ThPoS-22.19	71	Wu, Jie	WePoS-26.22	30
Winston, Flaura	FrPoS-08.5	105		ThCT4.1	52
Winters-Stone, Kerri	FrPoS-05.1	103	Wu, Joyce	FrBT9.6	92
Wirth, Christopher	ThPoS-08.6	61	Wu, Kai	WePoS-16.11	19
Wirth, Markus	FrCT7.1	97	Wu, Le	FrPoS-29.5	116
	SaAT17.3	132	Wu, Li-Qun	FrCT7.4	98
Wise, Richard G.	ThAT2.5	39	Wu, Ming	ThPoS-16.1	67
Witters, Donald	WeAT7.1	C		ThPoS-16.9	67
	WeAT7.3	3	Wu, Qingjiang	SaCT5.1	141
Wittig, Tilmann	ThAT20.5	44	Wu, Shun Chi	WePoS-06.2	14
Woiias, Peter	ThPoS-15.4	66	Wu, Songwei	WePoS-28.10	35
Wojkiewicz, Jean-Luc	FrAT14.2	86	Wu, Taiyang	SaAT4.3	128
Wolahan, Stephanie M	WePoS-16.1	18	Wu, Tianzhun	ThPoS-07.4	61
Wolbrecht, Eric	SaAT15.6	132		FrCT1.6	96
Wolf, Martin	ThCT13.3	55		FrPoS-15.8	108
Wolfart, Stefan	ThAT8.4	41	Wu, Xiang	WePoS-22.9	22
Wolff-Hughes, Dana	FrAT19.3	88	Wu, Xun	FrCT5.4	97
Wolkowicz, Kelilah	FrPoS-20.3	110	Wu, Yi-Ju	ThPoS-24.42	78
Wolterink, Jelmer Maarten	ThBT5.4	46	Wu, Yongsheng	FrPoS-11.8	106
Won, Chang-Hee	SaAT18.1	133	Wu, Yu Fang	WePoS-28.30	36
Won, Kyungho	WePoS-09.6	15	Wu, Yu-Dong	WePoS-25.31	28
Won, Sul Mui	FrPoS-31.11	122		ThPoS-23.28	74
Wong, Aaron Sung Lung	WePoS-26.20	30	Wu, Yunan	WePoS-05.1	13
	WePoS-26.21	30	Wu, Zhen	WeBT3.5	7
	WePoS-26.42	31	Wu, Zhongpan	ThAT17.3	43
Wong, Aloysius	WeBT12.3	9	Wyller, Vegard Bruun	SaCT7.5	142
Wong, Damon	ThAT19.2	44			
	FrPoS-07.1	104			
	FrPoS-29.4	116			
Wong, Eric T	ThCT20.4	57			
Wong, Hei Sunny	FrPoS-12.7	107			
Wong, Philip	WePoS-26.20	30			
	WePoS-26.21	30			
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Wong, Seng Fat	ThPoS-24.4	75			
Wong, Tak-Man	ThPoS-22.29	72			
Wong, Tien Yin	WePoS-21.11	22			
Wong, Ting Hway	FrPoS-30.15	119			
Wong, Tom	ThBT3.5	45			
Wong, Wan-wa	WePoS-03.2	12			
	ThAT3.3	39			
Wong, Yan Tat	FrBT8.5	91			
	FrCT20.4	101			
Woo, Eung Je	WeAT4.2	2			
	WePoS-28.3	34			
	ThBT4.3	46			
Woo, Jihwan	WePoS-26.31	31			
Woo, Sam Yong	WeAT15.4	5			
Wood, Alexander	WeAT3.2	1			
	FrCT3.4	96			
Woodbridge, Diane	SaAT17.1	132			
Woods, Adam J.	FrBT8.4	91			
Woodward, Richard	ThPoS-12.8	64			
	SaAT6.3	129			
Woolrich, Mark	ThCT8.3	53			
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Xi, Yan	FrAT5.5	83
Xi, Yutao	FrCT4.2	96
Xia, Haibo	SaAT10.2	130
Xia, Hu	WePoS-21.9	22
Xia, Jun	WeAT13.1	4
Xia, Kai	FrPoS-15.8	108
Xia, Maogeng	SaCT3.2	140
Xia, Tian	WePoS-15.7	18
Xia, Wei	ThAT19.5	44
Xia, Zhourui	FrAT9.1	84
Xiao, Chi	WePoS-15.3	18
	SaBT3.3	134
Xiao, Chun	SaDT16.3	148
Xiao, Guihua	FrCT4.3	96
	SaAT1.2	127
Xiao, Qiwei	WePoS-24.32	25
Xiao, Ran	FrCT16.5	101
Xiaogang, Xiong	ThPoS-07.1	60
Xie, Chong	WeAT17.4	5
Xie, Fei	FrPoS-15.1	108
Xie, Guoxi	WeBT6.6	8
	FrAT5.4	83
Xie, Jing Yu	FrAT18.5	88
Xie, Katherine	WePoS-29.8	37
Xie, Lizhe	SaCT5.1	141

Xie, Pengwei	FrAT2.2	82
	FrAT2.3	82
	FrAT9.1	84
Xie, Qing	FrCT8.5	98
	SaBT6.6	135
Xie, Qingsong	FrBT2.3	89
	FrCT9.5	98
Xie, Qiwei	WePoS-15.3	18
	SaBT3.3	134
Xie, Xiaobo	FrPoS-31.32	123
Xie, Xiao-Liang	WePoS-25.31	28
	ThPoS-23.28	74
	FrPoS-15.4	108
Xie, Yingqiu	ThAT2.6	39
Xifra-Porxas, Alba	WePoS-21.2	21
Xin, Jingmin	FrAT3.2	82
Xin, Liang	ThPoS-08.2	61
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Xiong, Shanshan	FrCT1.6	96
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Xu, Colin	WePoS-29.8	37
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Xu, Huijing	ThAT6.1	40
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Xu, Kaibin	ThAT3.1	39
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Yang, Hangao	FrCT1.6	96	Yao, Dezhong	WePoS-28.23	36
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