

Special Session Title:

#25 EMBC2020 Clinical Engineering Initiatives in Canada

Special Session Organizer Name & Affiliation:

Mike Capuano, Hamilton Health Sciences

Special Session Speaker Name & Affiliation 1:

Mike Capuano, Hamilton Health Sciences, Hamilton

Special Session Speaker Name & Affiliation 2:

Sarah Kelso, Health Sciences Centre, Winnipeg

Special Session Speaker Name & Affiliation 3:

Andrew Ibeu, The Ottawa Hospital, Ottawa

Special Session Speaker Name & Affiliation 4:

Martin Poulin, VIHA, Victoria

Special Session Speaker Name & Affiliation 5:

Frank Giallotti, Niagara Health System, St. Catharines, ON

Theme:

- 01. Biomedical Signal Processing
- 02. Biomedical Imaging and Image Processing
- 03. Micro/ Nano-bioengineering; Cellular/ Tissue Engineering &
- 04. Computational Systems & Synthetic Biology; Multiscale modeling
- 05. Cardiovascular and Respiratory Systems Engineering
- 06. Neural and Rehabilitation Engineering
- 07. Biomedical Sensors and Wearable Systems
- 08. Biorobotics and Biomechanics
- 09. Therapeutic & Diagnostic Systems and Technologies
- 10. Biomedical & Health Informatics
- 11. Biomedical Engineering Education and Society
- 12. Translational Engineering for Healthcare Innovation and Commercialization

Special Session Synopsis— Max 2000 Characters

This special session is developed to showcase key clinical engineering initiatives in Canadian hospitals. Processes and services that reveal creativity and industry leadership are to be highlighted. Hospital biomedical and clinical engineering departments throughout Canada are similar in many ways but differ in some key areas such as device and human factors evaluation, prioritization of equipment replacement, the handling and investigation of internal incidents, the tracking and distribution of medical device warnings and recalls, and the servicing of high-end medical devices and systems (e.g. radiology and imaging). Attendees interested in clinical engineering benefit from this type of session and allows them to interact with the presenter.

Speaker 1 - An In-House Ultrasound Service Program

Mike Capuano, Hamilton Health Sciences, Hamilton

Abstract— This presentation provides an overview of the critical elements required to implement a comprehensive service program in support of all diagnostic ultrasound systems at a hospital facility. It covers the cost-benefit analysis, readiness factors, and special considerations. A review of the process put in-place to ensure client satisfaction is also explained. Test procedures, documentation, and data security are also covered.

Speaker 2 – A Process to Prioritize Equipment for Replacement

Sarah Kelso, Health Sciences Centre, Winnipeg

Abstract— This presentation describes criteria developed to create a tool for Health Sciences Centre in Winnipeg, Manitoba; a major academic hospital system. The key is to review its existing equipment and make recommendations for the acquisition of replacement items. When considering a comprehensive planning technique, the resulting information must be easy to understand and navigate. The merits of simplicity can be appreciated when considering the resources required to accomplish a detailed analysis. Engaging the services of clinical engineering provides the best alternative to accomplish this. By leveraging the data contained in their equipment CMMS, objective and defensible recommendations can be made. From this, an estimate of capital funding, justification of items already perceived to be at end-of-life, and high-priority items for replacement, are objectively identified.

Speaker 3 – An In-House Imaging Support Program

Andrew Ibey, the Ottawa Hospital, Ottawa

Abstract— This presentation provides an overview of the Imaging Support Program at the Ottawa Hospital. There is a team of eight specialists that cover everything from injectors, MR, CT, Xray, Portables, BMD, Gamma Cameras, PET/CT, Ultrasounds, etc. Considerations and challenges related to costs, technical training, and vendor supports are explained. Monitoring of quality and client satisfaction are also discussed.

Speaker 4 – Developing Policies and Procedures for Cybersecurity of Medical Technology

Martin Poulin, Vancouver Island Health Authority, Victoria, BC

Abstract— This presentation provides an overview of the work conducted at Vancouver Island Health Authority, Biomedical Engineering towards the development of policies and procedures to ensure the cybersecurity of medical technology.

Speaker 5 – 3D Printing and Clinical Collaboration

Frank Gigliotti, Niagara Health System, St. Catharines, ON

Abstract— The Biomedical Engineering Department at Niagara Health has created a 3D printing program with the goal of increasing operational efficiencies and extending the life of unsupported medical devices. This has proven to be a viable exercise particularly where devices are no longer supported by the manufacturer, parts do not exist, or an improvement can be realized. In addition, the program has expanded to 3D printing of anatomical models utilized for patient education and physician training. There are lessons learned along the way and we are reaching out to explore future directions within the Biomedical community.