**CMBEC46 (Call for Papers) - Abstract**

**Title: Evolution of Clinical Engineering with the Growing Pressures on Healthcare and the Changing Landscape of Information, Communication and Automation Technology**

A few decades ago in the Canadian hospital sector, Clinical Engineering (CE) and Information Technology (IT) were on disparate trajectories such that underlying connectivity technologies, management approaches and strategic planning were generally not aligned between these departments. Beginning in the early 2010s however, there has been a steady and now accelerating convergence and alignment between the two.

During the same time period, healthcare organizations have also been facing increasing pressures on both the labour and financial fronts. In particular, labour shortages, high prices for technology, equipment, supplies and services, as well as cost increases to treat sicker patients over longer stays have all been ballooning hospital expenses. From that perspective, while healthcare is one the most labour intensive industries in the economy, strategic digital health investments in this information-intensive industry can possibly improve productivity and reduce stress on the system as a whole.

Now, with the convergence of CE & IT, as medical technology continues to become integrated into systems and the line between medical, communication, and information systems continues to blur, there is an opportunity to expand CE activities within this digital health transformation with a special focus on information, communication and automation technology (ICAT). That is, considering the intersection of its roles and responsibilities between patient safety, financial stewardship and medical technology, clinical engineers are well positioned and have the appropriate set of skills and expertise to lead the various phases required to plan for/design/build/operationalize ICAT to: improve quality of care outcomes; improve patient and staff safety; improve patient experience and staff satisfaction; generate efficiencies (e.g., virtual Care, automation, clinical decision support, data analytics, mobility); enable effective communication between healthcare staff; allow for effective alarm management; improve data availability for research; enhance patient flow management capabilities. Hence, clinical engineers can become key contributors in reducing the two main pressures within our healthcare system through a well thought-out ICAT strategy. Sinai Health’s CE team has started expanding their activities to support digital health transformation through some recent work: remote patient monitoring; alarm management and secondary alarming; secure messaging and communication device planning.