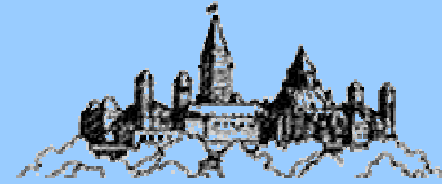




Celebrating 125 Years  
of Engineering the Future

# Ottawa Section

## IEEE 125<sup>th</sup> EMBS Seminar Series



# Clinical Engineering and Ventricular Assist Device (VAD) Program Support: The University of Ottawa Heart Institute Experience

**Timothy Zakutney, MHS, PEng, CCE**

*Director, Biomedical Engineering, The University of Ottawa Heart Institute  
Adjunct Professor, Department of Systems & Computer Engineering, Carleton University*

Clinical Engineering, a subspecialty of Biomedical Engineering, plays a key role in the application and management of clinical technology in the health care environment. With a strong foundation rooted in patient safety; from the initial days of electrical safety in the 1960s to the patient safety aspects of technology management, Clinical Engineering has evolved into the areas of clinical technology planning, information technology, hazard and device alert monitoring, and human factors engineering. The growing Ventricular Assist Device (VAD) program at the University of Ottawa Heart Institute (UOHI) is a comprehensive example of the vast and important role that Clinical Engineering contributes to the healthcare environment. Mechanical circulatory support is an accepted and proven and effective treatment for congestive heart failure (CHF). Although heart transplantation is the preferred course of treatment, the severe limitation of donor heart availability has contributed to the exploration of alternative methods including VADs. The VAD program is a multidisciplinary collaboration between cardiac surgery, cardiology, anesthesiology, perfusion, pathology, critical care nursing, pathology, social work, and clinical engineering. This presentation will review the responsibilities of Clinical Engineering in healthcare, a brief history of Ventricular Assist Devices as treatment for CHF, and a discussion of the various roles and contributions that Clinical Engineering plays in the support of clinical staff, administration, and successful patient outcomes in the VAD program.



**Nov 17, 2011**

*admission is free*

**18:00 – 19:30 pm**

**ME-4342**

**Carleton University**

Mr. Zakutney is a Professional Engineer with a specialty in Systems Design from the University of Waterloo and a Masters in Health Science in Clinical Engineering from the University of Toronto. He is an internationally Certified Clinical Engineer (CCE) and has advised Health Canada and the US Food and Drug Administration on medical device, health technology issues, and patient safety. In 2008, he was awarded the Canadian Medical and Biological Engineering Society's (CMBES) Outstanding Canadian Biomedical Engineer of the Year Award and in 2009, he traveled to Bangladesh at the request of the Canadian Government (Canadian International Development Agency (CIDA)) to provide assistance and guidance for the rational use and management of medical technology in Bangladesh.

Mr. Zakutney holds the position of Director of Biomedical Engineering at the University of Ottawa Heart Institute. He has served as Director and Manager of Biomedical Engineering teams at two major Canadian academic hospitals and, has developed and implemented software systems for several University and Health Care research programs. He currently teaches Clinical Engineering and holds the position of Adjunct Research Professor in the Department of Systems and Computer Engineering at Carleton University. He is a board member of the Canadian Board of Examiners for Certification in Clinical Engineering (CCE) and is Chairman, Awards Committee for the Canadian Medical and Biological Engineering (CMBES).



**IEEE EMBS Ottawa Chapter**

<http://www.ieeeottawa.ca/embs/>

Recipient of the 2011 IEEE EMBS Outstanding Chapter Award

**CU@EMBS**

<http://www.embs.engsoc.org/>

Recipient of the 2011 IEEE EMBS  
Outstanding Performance Award