THE CENTRE FOR PATTERN ANALYSIS AND MACHINE INTELLIGENCE

IN ASSOCIATION WITH

IEEE ENGINEERING IN MEDICINE & BIOLOGY AND
SIGNAL PROCESSING CHAPTERS OF KW SECTION PRESENTS:

Ultrasound and Computational Image Analysis for Quantitative Cancer Therapy Monitoring

Speaker: Dr. Gregory J. Czarnota Ph.D. M.D.
Sunnybrook Health Science Center, University of Toronto

Date: October 22, 2013
Time: 2:00pm – 3:00pm
Place: EIT-3142 - _Refreshments will be provided_

Abstract: We have developed novel methods to monitor tumour cell death using ultrasound. This methodology utilizes spectroscopic ultrasound methods to detect and quantify ultrasound cell death with high-sensitivity and specificity. Results from preclinical research in vitro, animal models of cancer in vivo, and human translational research will be presented. New image analysis methods in texture analysis which enhance the detection of cell death will be presented. The overall goal is to customize cancer treatments adaptively using feedback from these methods.

Bio: Dr. Czarnota is a Senior Scientist at the Sunnybrook Research Institute and Director of the Cancer Research Program at Sunnybrook Health Sciences Centre. Dr. Czarnota's lab is conducting research focused on using ultrasound imaging and spectroscopy at conventional- and high-frequencies to detect apoptosis and other forms of cell death in response to chemotherapy and radiation therapy. In addition to being a Scientist in the Department of Imaging Research, Dr. Czarnota is a Radiation Oncologist with applied research in breast cancer patients. His basic-science research interests include studies in biochemistry, chromatin biology, biophysics, medicine and oncology. He is also Chief of the Department of Radiation Oncology at Sunnybrook and Head of its Radiation Treatment Program.