DEPARTMENT OF PHYSICS

Invites you to attend a seminar by:

Dr. Jahan Tavakkoli

Associate Professor and Assistant Chair
Department of Physics
RYERSON UNIVERSITY

"Ultrasound-guided HIFU: A Research Overview"

Ultrasound is a unique energy-based modality with a number of applications in medicine and biology. Besides widespread diagnostic applications of ultrasound, its therapeutic usage has gained increasing interest in both scientific and clinical communities during past couple of decades. One of the most promising therapeutic ultrasound modalities is high intensity focused ultrasound (HIFU), in which intensive focused ultrasound beams are utilized to induce controlled thermal and/or mechanical lesions deep in tissue in non- or minimally-invasive fashions. This talk presents an overview of speaker's recent research and development activities in the area of ultrasound-guided HIFU. The talk's outline includes:

- Introduction to Biomedical Ultrasound (Diagnostic and Therapeutic)
- Ultrasound Monitoring and Guidance of HIFU Therapy
- HIFU in Neurology and Neurosurgery

Dr. Jahan Tavakkoli obtained a BSc degree in Electrical and Computer Engineering and a MSc degree in Biomedical Engineering, both from Sharif University of Tech., Tehran, Iran. He obtained a PhD degree in Biomedical Engineering from University of Lyon-1, and laboratory of INSERM, in Lyon, France. He is currently an Associate Professor in the Dept. of Physics, Ryerson University, Toronto, Canada, and an Affiliate Scientist in Keenan Research Center, St. Michael's Hospital, Toronto, Canada. He also serves as the Assistant Chair and Undergraduate Program Director, Medical Physics Program, Dept. of Physics, Ryerson University. He is the co- founder and director of the Advanced Biomedical Ultrasound Imaging and Therapy Laboratory in the Dept. of Physics, Ryerson University. His main areas of research interests and activates are in biomedical ultrasound for imaging and therapy applications. He has been holding numerous research grants from Canadian federal and provincial funding agencies including NSERC, ORF- RE, and the United States NIH. He has over 20 years of professional experience in designing, developing and commercializing of biomedical ultrasound imaging and therapy devices and technologies. Prior to joining academia, he was holding R&D positions in several leading high- tech medical device companies including Focus Surgery Inc., Indianapolis, IN; Guided Therapy Systems LLC, Mesa, AZ; and Visualsonics Inc., Toronto, Canada. He is an active member of several professional scientific societies and is in the editorial board of several scientific journals. To date, he has published more than 100 scientific papers in international journals and conferences and has supervised more than 50 graduate and undergraduate students in the areas of his research expertise.

DATE: **FRIDAY, NOVEMBER 4, 2016**

TIME: **2:30 PM**

Room: **CB 4058**

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