WAYNE STATE UNIVERSITY

School of Medicine
Department of Radiology

The WSU Program for Traumatic Brain Injury Research

presents a Special Topic Seminar

Leslie Ying, Ph.D.

Associate Professor, Department of Biomedical Engineering
Department of Electrical Engineering, University at Buffalo

"High-speed Magnetic Resonance Imaging via Sub-Nyquist Sampling"

Abstract: Magnetic Resonance Imaging (MRI) is a clinically used medical imaging modality to reveal the structure, physiology, and function of internal organs of human or biological objects. MRI is known to be slow in data acquisition, which limits imaging of moving organs and causes patient discomfort. Because the MRI acquisition time is directly related to the amount of data to be acquired, to address this issue of acquisition speed, we have developed mathematical models and algorithms that allow the MR images to be reconstructed from data acquired far below the Nyquist rate. In this talk, Dr. Ying will present some of her work using multi-channel sampling theory, sparsity-based compressed sensing, and kernel-based manifold learning to accelerate MRI in a number of applications such as cardiac imaging, perfusion imaging, and quantitative tissue imaging. The results demonstrate the importance and promise of mathematical modeling in speeding up MRI to meet the needs in clinical applications.

Bio: Dr. Ying received her B.E. in Electronics Engineering from Tsinghua University, China in 1997 and both her M.S. and Ph.D. in Electrical Engineering from the University of Illinois at Urbana - Champaign in 1999 and 2003, respectively. She was an Assistant and then Associate Professor of Electrical Engineering and Computer Science at the University of Wisconsin - Milwaukee (UWM) from 2003 to 2011. She joined the University at Buffalo in Spring 2012. Her research interests include magnetic resonance imaging, compressed sensing, and image reconstruction. She received a CAREER award from the National Science Foundation in 2009. She was also a recipient of the UWM Research Foundation and the Graduate School Research Award. She served as an Associate Editor of IEEE Transactions on Biomedical Engineering and was on the Administrative Committee of IEEE Engineering in Medicine and Biology Society and the Steering Committee of IEEE Transactions on Medical Imaging. She is now a Deputy Editor of Magnetic Resonance in Medicine and an editorial board member of Scientific Reports.

Date: Thursday, November 3rd, 2016
Time: 12:00pm – 1:00pm
Location: 3125 Scott Hall – 540 E. Canfield, Detroit, MI

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