

# seminar series

---

## Biomedical Engineering Research Seminar

### Taking smart catheters and optical imaging into the operating room: a surgeon-engineer's perspective

**Dr. Victor Yang** (H)BASc, MASc, MD, PhD, PEng, FRCSC  
Neurosurgeon, Department of Surgery, Sunnybrook Health Science Centre  
Associate Professor, Division of Neurosurgery, Faculty of Medicine, University of Toronto  
Lab Affiliations: Biophotonics and Bioengineering Lab, Ryerson University  
Brain Sciences and Physical Sciences, Sunnybrook Research Institute

How does nature's design of sea star tube foot processes influence implementation of conductive polymer based artificial muscle actuation of a smart catheter? Can one apply mask-less two-photon laser micromachining to improve the actuation speed of an artificial muscle contraction? How far are we from using optical imaging to guide tumour resection and cure incurable brain cancer? How can surgeons obtain accurate "see through x-ray vision" without using x-rays during spinal surgery? And finally, why should engineers enter medicine and surgery?

**DATE:** Wednesday June 11, 2014

**TIME:** 2:30 – 3:30

**ROOM:** E5 2004