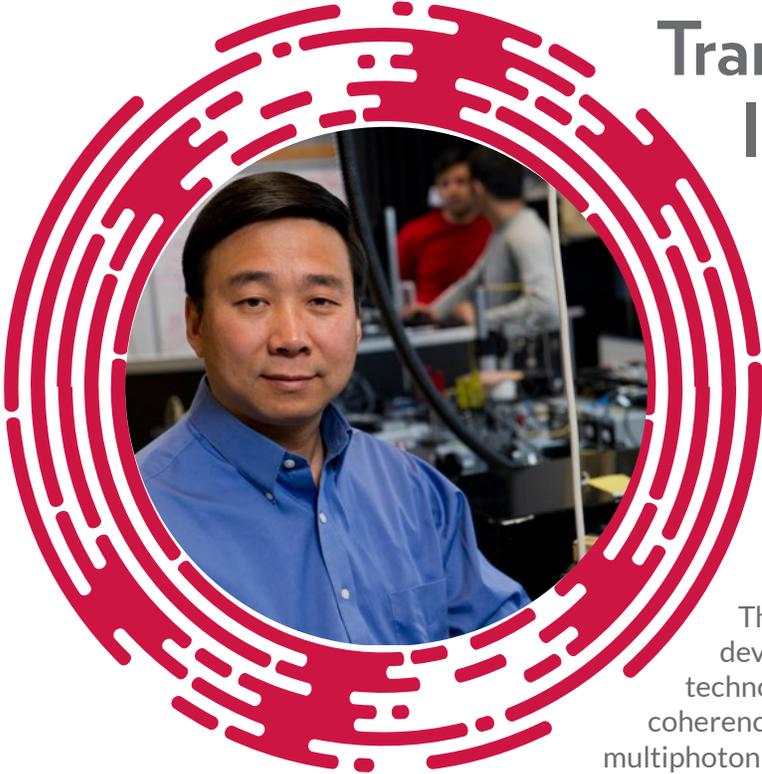




Department of  
Biomedical Engineering  
UNIVERSITY OF WISCONSIN-MADISON

## Spring 2018 Seminar Series

---



# Translational Optical Micro Imaging Technologies towards Histological Imaging of Biological Tissues *in vivo*

**Xingde Li, Ph.D.**  
**Professor of Biomedical Engineering,**  
**Johns Hopkins University**

This presentation will focus on our recent progresses on developing high-resolution biophotonic imaging technologies, particularly second-generation optical coherence tomography (OCT) endoscopy and emerging multiphoton endomicroscopy.

These technologies have shown promising translational potential for direct visualization of tissue microanatomies *in vivo*, *in situ* and *in real time* at a resolution from morphological to cellular and subcellular level, which approaches or at standard histopathology but without the need for tissue removal, staining or processing. The physics principles, engineering challenges and solutions will be briefly discussed, including the development of advanced light sources, MEMS technology, custom optical fiber, and ultracompact, high-performance imaging optics. Representative applications of these optical technologies will be presented, including cancer detection, small airway pathophysiology imaging, preterm birth risk assessment, and intra-operative guidance for neurosurgery. Other potential applications towards basic research, such as functional neuroimaging on freely walking animals, will also be discussed.

*Dr. Xingde Li received his PhD degree in Physics and Astronomy from the University of Pennsylvania in 1998. He has published more than 100 peer-reviewed journal papers, with a total citation ~14,500 and an H-index~50 (Google Scholar). Several of his patents have been licensed and converted to commercial products. He served as the chair of Emerging Technologies Committee of IEEE-EMBS (2006-2010). He has chaired many conferences such as the recent OSA Biomedical Optics Topical Meetings 2010-2014. He serves on several grant review panels for various funding agencies including NIH, NSF, Singapore and EU. He is serving (or served) as a topical editor or associate editor for several international journals including Optics Letters, Biomedical Optics Express, Journal of Biomedical Optics, IEEE Transactions on Biomedical Engineering, (Nature) Light: Science and Applications etc. He is a Fellow of OSA, SPIE, and AIMBE.*



---

**Monday, April 16, 2018**  
**12 PM in Tong Auditorium (1003 Engineering Centers)**