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FLORIDA INTERNATIONAL UNIVERSITY

Biomedical Engineering
Wallace H. Coulter Foundation
Lecture Series

WALLACE H. COULTER Foundation

"Label-free Optical Micro Imaging of Tissue Histology in vivo"

Dr. Xingde Li
Professor of Department of Biomedical Engineering
Johns Hopkins University

Friday, February 21th, 2014
LECTURE: 1:00 PM - 2:00 PM

ENGINEERING CENTER
ROOM EC 1113
10555 WEST FLAGLER STREET
MIAMI, FL 33174

Abstract: This seminar will present our recent development of high-resolution biophotonic imaging technologies, including optical coherence tomography (OCT) and multiphoton endomicroscopy. These technologies have shown significant translational potential for imaging tissue microanatomies *in vivo* at a resolution approaching or even at standard histopathology but without the need for tissue removal or staining. Thus they can function as a form of noninvasive "optical biopsy". The physics principles, engineering challenges and solutions will be briefly discussed, including the development of advanced lasers, MEMS technology, custom optical fiber, and ultracompact, high-performance imaging optics. Representative applications of these high-resolution technologies will be presented, including cancer detection, airway physiology assessment, preterm birth risk assessment, and intra-operative guidance for neurosurgery. Other potential applications towards basic research such as functional neuroimaging on awake animals will also be discussed.

Biography:
Dr. Xingde Li received his PhD degree in Physics and Astronomy from the University of Pennsylvania in 1998. He is currently a professor at the Department of Biomedical Engineering, Johns Hopkins University. Prior to joining Hopkins, he was with the Department of Bioengineering, University of Washington in Seattle for about 8 years. He has received several awards including The Teacher of the Year Award (BioE at UW), the NSF Faculty Early Career Award, the International Association of Dental Research Innovation in Oral Care Award, and the Hartwell Foundation Individual Biomedical Research Award. He has published more than 80 peer-reviewed journal papers, with a total citation >8,700 and an H-index~40 (according to Google Scholar). He has been chairing many conferences such as the recent OSA Biomedical Optics Topical Meetings 2010-2014 etc.. He currently serves on the editorial board of several international journals in the area of biomedical photonics including the Journal of Biomedical Optics (SPIE), Biomedical Optics Express (OSA), the IEEE Transactions on Biomedical Engineering, Light: Science and Applications (Nature Publishing Group and CIOMP) etc.. He also serves as a charter member of an NIH study section. He is a Fellow of OSA, SPIE, and AIMBE

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