The Singapore Bioimaging Consortium (SBIC)
presents a seminar
on

"Seeing Tissue function in a New Light : Advances in Optoacoustic Imaging"

Speaker: **Vasilis Ntziachristos**
Professor and Chair for Biological Imaging
Director, Institute for Biological and Medical Imaging
Director, Munich School of Bioengineering
Host : **Prof Malini Olivo**
Date : **Thursday, 2 November 2017**
Time : **3.00pm – 4.00pm**
Venue : **SBIC Seminar Room**
11 Biopolis Way
Level 2, Helios Building, Singapore 138667
(Please enter via Level 1)

Abstract

Optical imaging is unequivocally the most versatile and widely used visualization modality in the life sciences. Yet it has been significantly limited by photon scattering, which complicates the visualization of tissue beyond a few hundred microns. For the past few years, there has been an emergence of powerful new optical and optoacoustic imaging methods that offer high resolution imaging beyond the penetration limits of microscopic methods. The talk discusses progress in multi-spectral opto-acoustic tomography (MSOT) and mesoscopy (MSOM) that bring unprecedented optical imaging performance in visualizing anatomical, physiological and molecular biomarkers. Advances in light technology, detection methods and algorithms allow for highly-performing visualization in biology and medicine through several millimetres to centimetres of tissue and real-time imaging. The talk demonstrates implementations in the time and frequency domain, showcase how it is possible to accurately solve fluence and spectral coloring issues for yielding quantitative measurements of tissue oxygenation and hypoxia and demonstrate quantitative *in-vivo* measurements of inflammation, metabolism, angiogenesis in label free mode. In parallel, progress with clinical systems and the complementarity with ultrasound imaging, fluorescence molecular imaging and other modalities is discussed. Finally the talk offers insights into new miniaturized detection methods based on ultrasound detection using optical fibers, which could be used for minimally invasive applications.

About the Speaker

Vasilis Ntziachristos is Professor of Medicine, Professor of Electrical Engineering and Director of the Chair for Biological Imaging (CBI) at the Technical University of Munich, Director of the Institute for Biological and Medical Imaging (IBMI) at the Helmholtz Zentrum Munchen and Director of Bioengineering at the Helmholtz Pioneering Campus. He has received the Diploma in Electrical Engineering and Computer Science from the Aristotle University of Thessaloniki, Greece and the M.Sc and PhD degrees in Bioengineering from the University of Pennsylvania in Philadelphia PA. Prior to his current appointment he was faculty at Harvard University and the Massachusetts General Hospital. Professor Ntziachristos is the Editor of the journal Photoacoustics, regularly Chairs in international meetings and councils and has received numerous awards and distinctions, including the Gold Medal from the Society for Molecular Imaging (2015), the Gottfried Leibnitz prize from the German Research Foundation (2013), the Erwin Schrödinger Award (2012) and was named one of the world's top innovators by the Massachusetts Institute of Technology (MIT) Technology Review in 2004.

Admission is free and all are welcome ---