

Metropolitan Biophotonics Symposium
Technical Program, April 6th 2009

8:30 AM - 8:40 AM Chair Welcome

Session 1: Light-Tissue Interaction
8:40 AM – 10:00 AM

Session Chair: Dr. Baohong Yuan

A. **Numerical modeling of reflectance-based measurement of optical properties in layered tissue,** Mr. Quanzeng Wang (Pfefer group), FDA, Silver Spring, MD.
B. **Modified tissue optical properties using mechanical loading,** Dr. Chris Rylander, Virginia Tech, Blacksburg, VA.
C. **Direct curvature correction for non-contact imaging modalities - applied to multi-spectral imaging,** Jana Kainerstorfer (Amir G group), NICHD/NIH, Bethesda, MD.
D. **Light interaction with the nervous system,** Dr. Juanita Anders, USUHS, Bethesda, MD.
E. **Low intensity He-Ne laser induced biological modulations in cellular metabolic activity,** Dr. Darrell Tata (Ilev group), FDA, Silver Spring, MD.

10:00 AM - 10:20 AM Coffee Break

Session 2: Microscopy and Optical Coherence Tomography
10:20 AM - 12:00 PM

Session Chair: Dr. Jason Zara

A. **Imaging epithelial cancers with optical coherence tomography,** Dr. Jason Zara, George Washington Univ., Washington, DC.
B. **Applications of OCT in neursurgery and cardiac surgery,** Dr. Cha-Min Tang, Univ. Of Maryland Medical School, Baltimore, MD.
C. **TBA,** Dr. Mohamed Ibrahim (Nguyen group), Johns Hopkins Univ. Medical School., Baltimore, MD.
D. **Common-path OCT for guided robotic interventions in retinal surgery,** Dr. Jin Kang, Johns Hopkins Univ., Baltimore, MD.
E. **Imaging protein-protein interaction in living cells: FRET microscopy,** Dr. Yuansheng Sun (Periasamy group), Univ. of Virginia, Richmond, VA.
F. **Fiber-optic confocal microscopy methods for various imaging modalities,** Dr. Do-Hyun Kim (Ilev group), FDA, Silver Spring, MD.

12:00 PM - 1:00 PM Lunch

1:00 - 1:30 PM Plenary Talk

Biophotonics: Where Does It Fit?
Dr. Robert Nordstrom
Cancer Imaging Program Director
National Cancer Institute, NIH

Session 3: Nanophotonics and Molecular Imaging
1:30 PM - 3:00 PM

Session Chair: Dr. Ilko Ilev

A. **Integrated OCT and fluorescence molecular imaging for cancer detection,** Dr. Yu Chen, University of Maryland, College Park, MD.
B. **Visualizing head and neck tumors *in vivo* using near-infrared fluorescent transferrin conjugate,** Dr. Paul Wang, Howard Univ., Washington, DC.
C. **Novel nanostructures for combinatorial photothermal and photochemical cancer therapy,** Dr. Nichole Rylander, Virginia Tech, Blacksburg, VA.
D. **Delivery and intracellular fate of quantum dot nanoassemblies,** Dr. James Delehanty, US Naval Research Lab, Washington DC.
E. **Nanooptic metrology of novel nanocrystal probes towards imaging dynamic cellular processes,** Dr. Jeeseong Hwang, NIST, Gaithersburg, MD.
F. **SERS nanoimaging probe for dynamic, sub-diffraction limited chemical imaging of cellular surfaces,** Mr. John Kiser (Cullum group), Univ. of Maryland Baltimore County, Baltimore, MD.

3:10 PM - 3:30 PM Coffee Break

Session 4: Macro Imaging
3:30 PM - 5:10 PM

Session Chairs: Dr. Amir Gandjbachke & Dr. Victor Chernomordik

A. **Quantification of HER2 receptor expression *in vivo* by near infrared optical imaging,** Dr. Hassan Moinuddin (Amir G group), NIH/NICHD, Bethesda, MD.
B. **Retinal oximetry with a multi-aperture camera,** Dr. Paul Lemaillet, Catholic Univ., Washington DC. (Ramella-Roman group)
C. **Laser speckle imaging of microvascular architecture and function,** Mr. Abhishek Rege (Thakor group), Johns Hopkins Univ., Baltimore, MD.
D. **Using fMRI and NIRS to study neuronal processing,** Dr. John VanMeter, Georgetown University, Washington, DC.
E. **TBA**, Dr. James Jang, Washington Medical Center, Washington, DC.
F. **Ultrasound-modulated fluorescence based on a fluorophore-quencher labeled microbubble system,** Dr. Baohong Yuan, Catholic Univ., Washington, DC.

5:10 PM – 7:00 PM Dinner & Discusion