New Horizons in Research Imaging
Friday, April 20th, 2012
Harper Center, Creighton University, Omaha, Nebraska

Register now at: http://ois2012.creighton.edu
Registration is free.

8.30 a.m. Coffee, light snacks.
9.00 a.m.: Welcomes. Thomas Murray, Vice-President of Research for Health Sciences, Creighton University

Session 1: Deep Tissue Imaging
9.05 a.m.: Imaging microglial interactions with synapses in vivo. Ania K. Majewska, Department of Neurobiology and Anatomy, University of Rochester School of Medicine.

9.45 a.m.: Longitudinal dynamic tracking of in vivo immunity and tissue responses with two-photon microscopy. Alex Y. Huang, Department of Pediatrics, and the Departments of Pathology and Biomedical Engineering, Case Western Reserve University School of Medicine.

10.25 a.m.: Coffee break, view the exhibits.

Session 2: Metabolic and Related Imaging
10.40 a.m.: Fluorescence lifetime techniques in neurosurgery. Laura Marcu, Department of Biomedical Engineering, University of California, Davis.

11.20 a.m.: Multiphoton microscopy unveils the impact of endogenous cochlear metabolism on ototoxic hearing loss. Heather Jensen-Smith Imaging Specialist at the Integrated Biomedical Imaging Facility, Creighton University.

12.00 noon: Lunch break, view the exhibits.

Session 3: Single Molecule Imaging
1.30 p.m.: Single-molecule super-resolution imaging: From live bacteria cells to novel nanomaterials. Julie Biteen, Department of Chemistry, University of Michigan.

2.10 p.m.: Lateral movements of individual L-type calcium channels in presynaptic terminals of retinal photoreceptors and bipolar cells. Wallace B. Thoreson, Department of Ophthalmology. University of Nebraska Medical Center

2.50 p.m.: The single molecule approach to membrane protein stoichiometry. Richard Hallworth, Department of Biomedical Sciences, Creighton University School of Medicine.

3.30 p.m.: Questions, final words.
Laura Marcu, Ph.D. *Fluorescence lifetime techniques in neurosurgery.* Dr. Marcu is Professor, Department of Biomedical Engineering, University of California, Davis. Dr. Marcu’s laboratory studies in vivo optical spectroscopy and imaging for enhanced detection of disease in human tissue.

Julie Biteen, Ph.D. *Single-molecule super-resolution imaging: From live bacteria cells to novel nanomaterials* Dr. Biteen is Assistant Professor in the Department of Chemistry, University of Michigan. Her laboratory is focused on single-molecule imaging and nanophotonics applications to biology, with particular emphasis on applications of super-resolution and ultrasensitive imaging to live cells.

Alex Y. Huang, M.D., Ph.D. *Longitudinal dynamic tracking of in vivo immunity and tissue responses with two-photon microscopy.* Dr. Huang is an Assistant Professor, Department of Pediatrics, and the Departments of Pathology and Biomedical Engineering, Case Western Reserve University School of Medicine, Cleveland, OH. Dr. Huang’s research interest is the application of multi-photon microscopy to the study of immune responses and T cell-mediated memory immunity.

Ania K. Majewska, Ph.D. *Imaging microglial interactions with synapses in vivo.* Dr. Majewska is an Associate Professor in the Department of Neurobiology and Anatomy, University of Rochester Medical Center School of Medicine and Dentistry. Her research concerns how visual activity shapes the structure and function of connections between neurons in the visual cortex, using in vivo patch clamp and imaging methodologies.

Wallace B. Thoreson, Ph.D. *Lateral movements of individual L-type calcium channels in presynaptic terminals of retinal photoreceptors and bipolar cells.* Dr. Thoreson is a Professor in the Department of Ophthalmology, University of Nebraska Medical Center, Omaha, Nebraska. His research focuses on basic mechanisms of visual information processing by the retina, particular at synapses.

Heather Jensen-Smith, Ph.D. *Multiphoton microscopy unveils the impact of endogenous cochlear metabolism on ototoxic hearing loss.* Dr. Jensen-Smith is the Research Imaging Specialist at the Integrated Biomedical Imaging Facility at Creighton University, Omaha, Nebraska. Her research applies confocal imaging, particularly metabolic imaging, to studies of the fate of cochlear hair cells.

Richard Hallworth, Ph.D. *The single molecule approach to membrane protein stoichiometry.* Dr. Hallworth is a Professor in the Department of Biomedical Sciences at Creighton University School of Medicine, Omaha, Nebraska. His laboratory studies the function of hair cells of the auditory and vestibular systems. The work to be discussed here concerns the use of fluorescence methods to study the structure and function of a unique membrane-based motor protein.
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Directions to the Harper Center, 602 N. 20th Street, Omaha

From I-80
1. Take exit 452 to I-480/Hwy 75 North toward Eppley Airfield/Downtown (get into right lanes)
2. Take exit 2A, Dodge/Harney Streets
3. Turn right onto Douglas (one-way, eastbound)
4. Turn left onto 24th Street, keep right
5. Turn right onto Burt Street (north of campus)
6. Turn right onto 20th Street (about 0.1 mile)
7. Turn right into Parking Lot (south side of Harper Center)

Parking
Free public parking will be available in the lots marked in yellow. Modestly priced parking is also available nearby in the Cass Street City parking lot.

Refreshments and Food
Morning coffee will be available on-site. The Harper Center has a range of inexpensive coffee and food service options, including Billy Blues Alumni Grill, the Bird Feeder Convenience Store, both on the first floor, and the Brew Jay Coffee Shop on the second (entrance) floor.

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