

Advanced Imaging Methods in Cell Biology and Neuroscience

Register now at:

<http://biomedsci.creighton.edu/2010symposium>

Registration is free.

Friday, April 30th, 2010

Harper Center, Creighton University, Omaha, Nebraska



8.30 a.m. *Coffee, light snacks.*

9.00 a.m.: *Welcomes.* **Thomas Murray**, Associate Dean for Research, Creighton University School of Medicine; **Richard Hallworth**, Symposium organizer.

9.05 a.m.: **Single Molecule Studies of Protein Folding.** **Ashok Deniz**, Department of Molecular Biology, Scripps Research Institute.

9.40 a.m.: **Real-Time Single Molecule Fluorescence Imaging of Natural and Engineered Nucleic Acid-Protein Nanomachines** **Nils G. Walter**, Department of Chemistry, University of Michigan.

10.15 a.m.: *Coffee break, view the exhibits.*

10.45 a.m.: **Single Molecule Studies of DNA Structure and Function.** **Yuri Lyubchenko**, Department of Pharmaceutical Sciences, University of Nebraska Medical Center.

11.20 a.m.: **Molecular Studies of the Motor Protein Prestin.** **Richard Hallworth**, Department of Biomedical Sciences, Creighton University School of Medicine.

12.00 noon: *Lunch break, view the exhibits, special presentations.*

12.05 p.m.: **New Advances in Automated Microscopy: PerkinElmer's Comprehensive Solution to Cellular Imaging and Analysis.** **Aaron Risinger**, Application Scientist, PerkinElmer.

12.30 p.m.: **High Content Imaging: Taking Cell Analysis to Multiple Dimensions.** **Ting Qian**, Technical Applications Specialist, BD Cell Analysis.

12.55 p.m.: **Can Your Cells Do This? New Basics, Bells and Whistles for Imaging Research from Molecular Probes.** **Daniel Beacham**, Senior Staff Scientist, Research & Development, Life Technologies/Molecular Probes.

1.30 p.m.: **Intracellular Coenzymes as Natural Biomarkers for Metabolism and Mitochondrial Anomalies.** **Ahmed Heikal**, Department of Chemistry and Biochemistry, University of Minnesota-Duluth.

2.05 p.m.: **Use of Two-Photon Microscopy to Image Bacterial Infections in the Central Nervous System.** **Tammy L. Kelian**, Department of Pathology and Microbiology, University of Nebraska Medical Center.

2.40 p.m.: *Break, view the exhibits.*

2.55 p.m.: **Micro-Optics for In-Vivo Multiphoton Microscopy.** **Michael J. Levene**, Department of Biomedical Engineering, Yale University.

3.30 p.m.: **Identification of Intracellular NADH Pools by Two-Photon Fluorescence Lifetime Imaging.** **Michael G. Nichols**, Department of Physics, Creighton University.

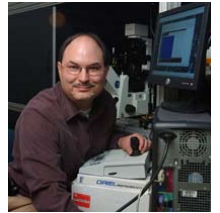
4.00 p.m.: *Questions, final words.*

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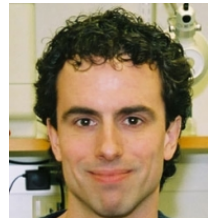
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Nils G Walter, Ph.D. Dr. Walter is a Professor in Department of Chemistry, University of Michigan – Ann Arbor, MI. Dr. Walter's laboratory studies non-coding, often catalytic, RNAs and their roles in cellular regulation. The work relies extensively on the laboratory's expertise in single-molecule fluorescence and related methods.



Ashok Deniz, Ph.D. Dr. Deniz is an Associate Professor in the Department of Molecular Biology at the Scripps Research Institute, La Jolla, CA. The laboratory develops and uses single-molecule fluorescence methods to address key issues in protein, nucleic acid and cellular dynamics and function. The issues include mechanisms of protein folding, assembly of complex biological machines, and pathways of RNA interference.

Michael J. Levene, Ph.D. Dr. Levene is an Assistant Professor in the Department of Biomedical Engineering, Yale University, New Haven, CT. Dr. Levene is a recent alumnus of Watt Webb's laboratory at Cornell University. Since coming to Yale, he has developed innovative applications of multi-photon imaging to in-vivo microscopy and metabolism.



Ahmed Heikal, Ph.D. Dr. Heikal is an Associate Professor in the Department of Chemistry and Biochemistry at the University of Minnesota-Duluth, MN, to which he recently moved from Pennsylvania State University. His laboratory uses microscopic and micro-spectroscopic and analytical techniques to study a diverse range of problems in energy metabolism, membrane assembly, immunoglobulin receptor signaling, and protein dynamics.

Yuri Lyubchenko, Ph.D. Dr. Lyubchenko is a Professor in the Department of Pharmaceutical Sciences of the University of Nebraska Medical Center, Omaha, NE. His laboratory studies molecular interactions at the nanoscale, including DNA structure and dynamics, and protein folding and mis-folding. As a member of the Center for Drug Delivery and Nanomedicine, Dr. Lyubchenko also develops novel drug-delivery methods.



Tammy L. Kelian, Ph.D. Dr. Kelian is an Associate Professor in the Department of Pathology and Microbiology at the University of Nebraska Medical Center, Omaha, NE. Dr. Kelian's research centers on the pathogenesis of bacterial infections in the CNS using a mouse brain abscess model. This talk will emphasize the application of multi-photon imaging and magnetic resonance imaging to the living brain.

Michael G. Nichols, Ph.D. Dr. Nichols is an Associate Professor in the Department of Physics at Creighton University, Omaha, NE. His laboratory studies the application of laser and physical optics to problems in biology and medicine. Of particular interest to Dr. Nichols is multi-photon and fluorescence lifetime studies of cellular metabolism.



Richard Hallworth, Ph.D. 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 in the auditory and vestibular systems. The work to be discussed concerns the use of fluorescence methods, including fluorescence lifetime imaging, 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

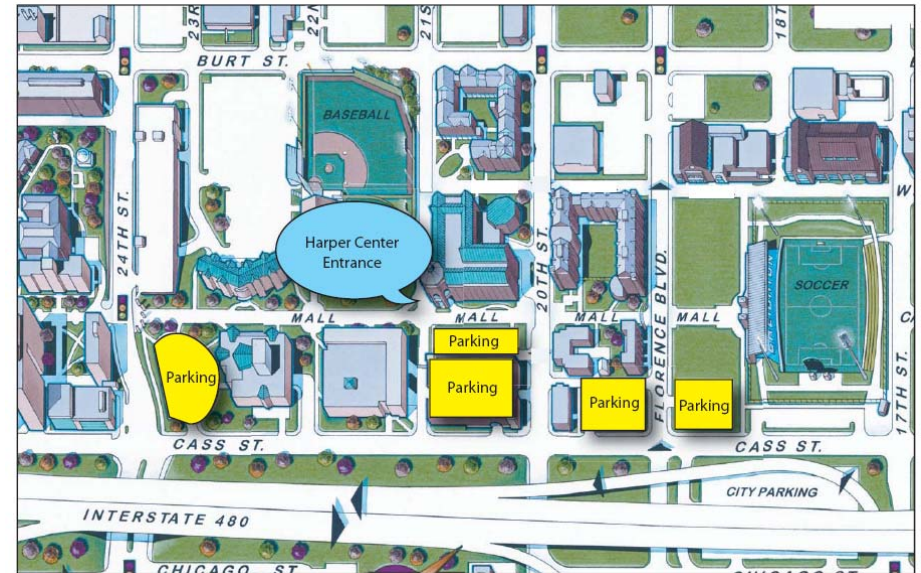
From I-80

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)

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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.