

Sunday May 2

3:00 pm Check-in

6:00 pm Reception (Lobby)

7:00 pm Dinner

8:00 pm Keynote Address:
Mark H. Ellisman, University of California, San Diego
*Building a brain of visible cells: Tools and technologies for acquiring, placing
and annotating large-scale data*

9:00 pm Refreshments available at Bob's Pub

Monday May 3

- 7:30 am Breakfast
- 9:00 am Session 1: Novel Scanning Strategies**
Chair: Tim Harris
- 9:00 am **Enrico Gratton**, University of California, Irvine
3D particle tracking and imaging at the nanometer scale
- 9:30 am **Dejan Vucinic**, Stanford University
CMOS descanning for faster confocal imaging
- 10:00 am **Rafael Yuste**, HHMI/Columbia University
SLM Microscopy
- 10:30 am Break and Group Photo
- 11:00 am Session 2: Adaptive Optics**
Chair: Carolyn Larabell
- 11:00 am **Delphine Debarre**, Ecole Polytechnique
Image-based aberration correction for nonlinear microscopy
- 11:30 am **Timothy E. Holy**, Washington University School of Medicine
Wavefront sensing and adaptive optics for light sheet microscopy
- 12:00 pm **Na Ji**, Janelia Farm Research Campus/HHMI
Adaptive optics for high resolution imaging in biological tissues
- 12:30 pm Lunch
- 1:00 pm Tour (optional - meet at reception)
- 2:15 pm Session 3: Volume Imaging**
Chair: Rainer Heintzmann
- 2:15 pm **Eric Betzig**, Janelia Farm Research Campus/HHMI
Bessel beam plane illumination microscopy
- 2:45 pm **Ernst H. K. Stelzer**, European Molecular Biology Laboratory (EMBL)
Light sheet based fluorescence microscopy reduces phototoxic effects and intensity modulation estimates the optical scatterin
- 3:15 pm **Tony Wilson**, University of Oxford
Optical sectioning and fast focussing in light microscopy

3:45 pm Break

4:15 pm Session 4: Polarization
Chair: Tony Wilson

4:15 pm **Sanford M. Simon**, The Rockefeller University
Fluorescence polarization microscopy to study the structure and function of the nuclear pore complex

4:45 pm **Rafael Piestun**, University of Colorado at Boulder
Polarization sensitive, three-dimensional, single-molecule imaging of cells with a double-helix system

5:15 pm Poster Reception 1

7:00 pm Dinner

8:00 pm Poster Reception 1 (continued)

Tuesday May 4

- 7:30 am Breakfast
- 9:00 am Session 5: Probes**
Chair: Rafael Yuste
- 9:00 am **Dorus Gadella**, University of Amsterdam
New probe-based strategies for quantitative microscopy of signaling dynamics in single cells
- 9:30 am **George H. Patterson**, National Institutes of Health
*Mutagenesis studies of the *Aequorea victoria* green fluorescent protein photoconversion*
- 10:00 am **Vladislav Verkusha**, Albert Einstein College of Medicine
Engineering of monomeric red fluorescent proteins for live cell imaging
- 10:30 am Break
- 11:00 am Session 6: Resolution 1**
Chair: Mats Gustafsson
- 11:00 am **Christoph Cremer**, University of Heidelberg
Far field localization microscopy of human genome nanostructures
- 11:30 am **Graham Dempsey**, Harvard University
Nanosopic imaging with STORM
- 12:00 pm **Jennifer Lippincott-Schwartz**, National Institutes of Health
PALM-based super-resolution imaging and its applications
- 12:30 pm Lunch
- 2:00 pm Session 7: Resolution 2**
Chair: George Patterson
- 2:00 pm **Harald F. Hess**, Janelia Farm Research Campus/HHMI
Advances and applications of iPALM
- 2:30 pm **Rainer Heintzmann**, Kings College London
Structured illumination and image inversion interferometry
- 3:00 pm **Mats G. L. Gustafsson**, Janelia Farm Research Campus/HHMI
Progress in structured illumination microscopy

- 3:30 pm Break
- 4:00 pm Session 8: Short talks from posters**
Chair: G. Allan Johnson
- 4:00 pm **Eric Wickstrom**, Thomas Jefferson University
Genetic Imaging
- 4:15 pm **Kevin Dean**, University of Colorado
An innovative microfluidic platform for quantitative and high-throughput single-cell photophysics
- 4:30 pm **Shalin Mehta**, National University of Singapore
Quantitative imaging of morphology with partially coherent methods: Forward and inverse analysis of DIC and DPC
- 4:45 pm **Alexa Mattheyses**, The Rockefeller University
A study of single endocytic events reveals protein dynamics unexpected from population analysis
- 5:00 pm **Karen Dehnert**, University of California, Berkeley
Visualizing glycans during early zebrafish development
- 5:15 pm Poster Reception 2**
- 7:00 pm Dinner
- 8:00 pm Poster Reception 2 (continued)**

Wednesday May 5

- 7:30 am Breakfast
- 9:00 am Session 9: Alternative Modes 1**
Chair: Tim Holy
- 9:00 am **Carolyn Larabell**, University of California, San Francisco
Imaging molecules with respect to cell structures at better than 50 nm resolution
- 9:30 am **G. Allan Johnson**, Duke University Medical Center
Magnetic resonance microscopy
- 10:00 am **Scott Fraser**, California Institute of Technology
Intravital imaging of embryonic development
- 10:30 am Break
- 11:00 am Session 10: Alternative Modes 2**
Chair: Jennifer Lippincott-Schwartz
- 11:00 am **Gaudenz Danuser**, Harvard Medical School
Learning cell regulation from image fluctuations
- 11:30 am **Tim Harris**, Janelia Farm Research Campus/HHMI
Neuronal reconstructions using optical array tomography
- 12:00 pm **Christian Freudiger**, Harvard University
The quest for ultimate sensitivity of coherent nonlinear optical bioimaging
- 12:30 pm Lunch (Take out boxes available from servery for those on first shuttle) and Departure
- 1:00 pm First shuttle to Dulles
1:45 pm Second shuttle to Dulles
2:30 pm Last shuttle to Dulles