

Schedule at a Glance

Sunday April 5th

3:00 pm Check-in
 6:00 pm Reception
 7:00 pm Dinner
 8:00 pm Welcome Address / Opening Remarks
 8:10 pm Session 1: Biomedical Applications
 9:00 pm Refreshments available at Bob's Pub

Monday April 6th

7:30 am Breakfast
 8:30 am Session 2: Electron Microscopy
 10:10 am Break and Group Photo
 10:40 am Session 3: Light Microscopy
 12:20 pm Lunch
 1:15 pm Tour (optional)
 2:30 pm Session 4: Signal Processing
 4:10 pm Break
 4:40 pm Session 5: Software Highlights
 6:00 pm Reception
 7:00 pm Dinner
 8:00 pm Poster and Software Demo Reception
 10:00 pm Refreshments available at Bob's Pub

Tuesday April 7th

7:30 am Breakfast
 8:30 am Session 6: Biomedical Images
 10:10 am Break
 10:40 am Session 7: Cellular Processes and Models I
 12:20 pm Lunch
 1:30 pm Session 8: Cellular Processes and Models II
 3:10 pm Break
 3:40 pm Session 9: Group Discussions
 6:00 pm Reception
 7:00 pm Dinner
 8:00 pm Poster and Software Demo Reception
 10:00 pm Refreshments available at Bob's Pub

Wednesday April 8th

7:30 am Breakfast
 8:30 am Session 10: Informatics and Modeling
 9:45 am Break
 10:15 am Session 11: Reports of Discussion Groups
 12:20 pm Closing Remarks
 12:30 pm Lunch (take-out boxes from servery available for those on first shuttle)
 12:45 pm First shuttle to Dulles
 1:30 pm Second shuttle to Dulles
 2:15 pm Last shuttle to Dulles

NOTE:

All meals are in the **Dining Room**
 All talks are in the **Auditorium**
 Posters are located in the **Synapse Room and Gallery**

Full Schedule

Sunday April 5th

3:00 pm Check-in

6:00 pm Reception

7:00 pm Dinner

8:00 pm Welcome Address / Opening Remarks

8:10 pm Session 1: Biomedical Applications
Chair: Hanchuan Peng

8:10 pm **Polina Golland**, Massachusetts Institute of Technology
Modeling anatomical heterogeneity in populations

8:35 pm **Zena Werb**, University of California, San Francisco
Multiscale analysis of branching morphogenesis

9:00 pm Refreshments available at Bob's Pub

Monday April 6th

- 7:30 am Breakfast
- 8:30 am Session 2: Electron Microscopy**
Chair: Maryann Martone
- 8:30 am **Stephan Nickell**, Max-Plank-Institute of Biochemistry
Cryo-electron microscopy: From molecules to systems
- 8:55 am **Manfred Auer**, Lawrence Berkeley National Lab
3D architecture of macromolecular machines in their cellular context
- 9:20 am **Mark H. Ellisman**, University of California San Diego
Multi-scale imaging of the nervous system - Filling gaps in our knowledge framework
- 9:45 am **Brad J. Marsh**, The University of Queensland
Multi-resolution spatio-temporal analysis of mammalian cells reconstructed in 3D by electron microscope tomography
- 10:10 am Break and Group Photo
- 10:40 am Session 3: Light Microscopy**
Chair: B. S. Manjunath
- 10:40 am **Michael Liebling**, University of California, Santa Barbara
Multi-modality and multi-timescale imaging of cardiac development: Prospects of a dynamic heart atlas
- 11:05 am **Michael Hawrylycz**, Allen Institute for Brain Science
Bioimage informatics in 4D for a developmental gene expression atlas of the mouse brain
- 11:30 am **Hanchuan Peng**, Janelia Farm Research Campus/HHMI
BrainAligner and AtlasBuilder: The Janelia 3D brain image analysis pipeline
- 11:55 am **Badri Roysam**, Rennselaer Polytechnic Institute
Methods for representing and analyzing spatio-temporal associations in multi-dimensional biological images
- 12:20 pm Lunch
- 1:15 pm Tour (optional)

- 2:30 pm** **Session 4: Signal Processing**
Chair: Bob Murphy
- 2:30 pm **Rainer Heintzmann**, Kings College London
Blind deconvolution constrained by an optical model of the point spread function
- 2:55 pm **Pavel Tomancak**, Max-Planck-Institute of Cell Biology and Genetics
SPIM image processing - A new paradigm for analyzing developing biological systems
- 3:20 pm **Jelena Kovacevic**, Carnegie Mellon University
Modern signal processing tools for bioimaging
- 3:45 pm **Karl Rohr**, University of Heidelberg and Deutsches Krebsforschungszentrum
Registration and tracking approaches for analyzing cell microscopy images
- 4:10 pm Break
- 4:40 pm** **Session 5: Software Highlights (short talks)**
Chair: Manfred Auer
- 4:40 pm **Matthew Baker**
Modeling protein structure at near-atomic resolutions with Gorgon
- 4:48 pm **Fuhui Long**
VANO: a Volume-Object Image Annotation System
- 4:56 pm **Kris Kvilekval**
Bisque
- 5:04 pm **Hanchuan Peng**
V3D: A swiss army knife for analysis and visualization of 3D images
- 5:12 pm **Sean Megason**
GoFigure
- 5:20 pm **Bob Murphy**
SLIF, PSLID, PUnmix and SLML Suite
- 5:28 pm **Badri Roysam**
FARSIGHT
- 5:36 pm **Chaohong Wu**
Robust morphological analysis of high-content screening images of primary neuron cell culture

- 5:44 pm **Talapady Bhat**
Image informatics web tools for metadata capture and navigation
- 5:52 pm **Nick Hamilton**
iCluster: Visualising the relationships in large bio-image and data sets
- 6:00 pm Reception
- 7:00 pm Dinner
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- 10:00 pm Refreshments available at Bob's Pub

Tuesday April 7th

7:30 am Breakfast

**8:30 am Session 6: Biomedical Images
Chair: Gene Myers**8:30 am **Arthur W. Toga**, University of California, Los Angeles
*Brain mapping the structure and function of mice and men*8:55 am **Carl-Fredrik Westin**, Harvard Medical School
*Brain connectivity from diffusion MRI*9:20 am **R. Mark Henkelman**, Hospital for Sick Children
*Quantitative phenotyping from MR imaging in the mouse*9:45 am **James S. Duncan**, Yale University
Model-based strategies for biomedical image analysis

10:10 am Break

**10:40 am Session 7: Cellular Processes and Models I
Chair: Arthur Toga**10:40 am **Gaudenz Danuser**, The Scripps Research Institute
*One in one thousand*11:05 am **Ambuj K. Singh**, University of California, Santa Barbara
*Probabilistic analysis of scientific images*11:30 am **Eugene W. Myers**, Janelia Farm Research Campus/HHMI
*Atlases from images*11:55 am **Jason Swedlow**, University of Dundee
Development of neural cells

12:20 pm Lunch

**1:30 pm Session 8: Cellular Processes and Models II
Chair: Michael Hawrylycz**1:30 pm **Jan T. Liphardt**, University of California, Berkeley
The E. coli chemotaxis system: A test case for generating and interpreting data from super-resolution light microscopy

- 1:55 pm **Ivo F. Sbalzarini**, Swiss Federal Institute of Technology (ETH), Zurich
Reconstruction and characterization of the shapes and dynamics of sub-cellular structures in live cells
- 2:20 pm **Robert F. Murphy**, Carnegie Mellon University
Automated proteome-wide determination and modeling of subcellular location for systems biology
- 2:45 pm **Stephen T. Wong**, The Methodist Hospital, Weill Cornell Medical College
Image-based systems biology for drug repositioning
- 3:10 pm Break
- 3:40 pm Session 9: Group Discussions (topics and locations TBA)**
- 6:00 pm Reception
- 7:00 pm Dinner
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- 10:00 pm Refreshments available at Bob's Pub

Wednesday April 8th

- 7:30 am Breakfast
- 8:30 am Session 10: Informatics and Modeling**
Chair: Jason Swedlow
- 8:30 am **Eric Mjolsness**, University of California, Irvine
Plant image analysis for developmental modeling
- 8:55 am **B. S. Manjunath**, University of California, Santa Barbara
Bisque: A web based database infrastructure to store, organize and analyze bioimages
- 9:20 am **Maryann E. Martone**, University of California, San Diego
The cellular knowledge base: Ontology-based annotation and query of electron tomography data
- 9:45 am Break
- 10:15 am Session 11: Reports of Discussion Groups**
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