Sunday, October 21st

3:00 pm  Check-in
6:00 pm  Reception (*Lobby*)
7:00 pm  Dinner
8:00 pm  Opening Remarks - Gerry Rubin
8:05 pm  Plenary Talks

8:05 pm  Philipp J. Keller, Janelia Farm Research Campus/HHMI
*Reconstructing neural development*

8:35 pm  Eric Betzig, Janelia Farm Research Campus/HHMI
*Improving the spatiotemporal resolution of optical microscopy*

9:05 pm  Refreshments available at Bob’s Pub

NOTE:
Meals are in the Dining Room
Talks are in the Seminar Room
Posters are in the Lobby
Monday, October 22\textsuperscript{nd}

7:30 am  Breakfast (service ends at 8:45am)

9:00 am  Session 1: Correlated Light and EM Based Methods  
Chair: Winfried Denk

9:00 am  Chairperson's Introduction (10 min)

9:10 am  Jeff W. Lichtman, Harvard University  
Axonal Projection Imaging

9:25 am  Kristina D. Micheva, Stanford University  
Conjugate immunofluorescence and scanning electron microscopy of mouse cortical  
synapses using array tomography

9:40 am  Albert Cardona, Janelia Farm Research Campus/HHMI  
Web-based concurrent cooperative distributed neural circuit reconstruction with  
CATMAID

9:55 am  Stephen J. Smith, Stanford University School of Medicine  
The $1,000 connectome

10:10 am  Roger Y. Tsien, HHMI/University of California, San Diego  
Optogenetic excitation of deep neurons through the intact skull with red light and  
inhibition of synaptic release with blue light

10:25 am  Break

11:10 am  Session 2: Correlated Light and EM Methods (continued)

11:10 am  Randy M. Bruno, Columbia University  
Light-based mapping of synapses across entire dendritic arbors with validation by  
high-throughput electron microscopy

11:25 am  Xiaowei Zhuang, HHMI/Harvard University  
Super-resolution fluorescence imaging of neurons and synapses in the brain

11:40 am  Stephan J. Sigrist, Freie Universität Berlin  
A rational approach to synaptic diversity

11:55 am  Vadim Pinskiy, Cold Spring Harbor Laboratory  
Development of a high-throughput pipeline for neurohistology
12:10 pm  Discussion on Correlated Light and EM Methods  
Leader: Stephen Smith

12:45 pm  Lunch

2:30 pm  Session 3: Informatics and Atlases  
Chair: Giorgio Ascoli

2:30 pm  Chairperson's Introduction (10 min)

2:40 pm  Charles F. Stevens, Salk Institute for Biological Studies  
*Anti-maps in the brain*

2:55 pm  Giorgio A. Ascoli, George Mason University  
*Reconstructing the hippocampus from potential synapses to synaptic potentials*

3:10 pm  Partha P. Mitra, Cold Spring Harbor Laboratory  
*Neuronal tractography in whole mouse brains*

3:25 pm  Eugene W. Myers, Max Planck Institute of Molecular Cell Biology and Genetics  
*Extracting and modeling individual neurons*

3:40 pm  Hanchuan Peng, Janelia Farm Research Campus/HHMI  
*High-throught 3D neuron reconstruction*

3:55 pm  Break

4:35 pm  Session 4: Informatics and Atlases (continued)

4:35 pm  Badri Roysam, University of Houston  
*Quantitative arbor analytics*

4:50 pm  Atsushi Miyawaki, RIKEN Brain Science Institute  
*Three-dimensional reconstruction of neuronal structures in optically cleared mouse brains*

5:05 pm  Hong-Wei Dong, University of California, Los Angeles  
*The iConnectome: A high-throughput approach for characterizing mouse neuronal networks*

5:20 pm  Hongkui Zeng, Allen Institute for Brain Science  
*Creating the Allen Mouse Brain connectivity atlas*

5:35 pm  Maryann E. Martone, University of California, San Diego  
*There will always be more than one: Integration of distributed connectivity resources*
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<th>Time</th>
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<tr>
<td>5:50 pm</td>
<td><strong>Discussion on Informatics and Atlases</strong></td>
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<td><strong>Leader: Gene Myers</strong></td>
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<td>6:25 pm</td>
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Tuesday, October 23rd

7:30 am  Breakfast (service ends at 8:45am)

9:00 am  Session 5: Correlated Light and Function Based Methods
          Chair: Tim Holy

9:00 am  Chairperson's Introduction

9:10 am  Loren Looger, Janelia Farm Research Campus/HHMI
          Advances in fluorescence imaging reagents for neural circuit ANALYSIS

9:25 am  Timothy E. Holy, Washington University School of Medicine
          Large-scale recording and physiological tagging

9:40 am  Pavel Osten, Cold Spring Harbor Laboratory
          Mapping behavior-activated mouse brain circuits by STP tomography

9:55 am  Masateru Hiramoto, The Scripps Research Institute
          Distance map: A versatile method to quantify spatiotemporal neurite dynamics

10:00 am Breakfast

10:10 am Break

10:55 am Session 6: Correlated Light and Function Based Methods  (continued)

10:55 am  Mac Hooks, Janelia Farm Research Campus/HHMI
          Optical mapping of long-range circuits in the mouse sensorimotor system

11:10 am  Jason N. D. Kerr, Max Planck Institute for Biological Cybernetics
          Imaging active neuronal circuits in the freely moving animal: Tracking what they see
          from the eye to the cortex

11:25 am  Discussion on Correlated Light and Function Based Methods
          Leader: Loren Looger

12:15 pm  Lunch

1:00 pm  Tour (optional – meet at reception)
2:00 pm  Session 7: Genetics I
          Chair: Barry Dickson

2:00 pm  Chairperson's Introduction (10 min)

2:10 pm  Gerald M. Rubin, Janelia Farm Research Campus/HHMI
          Building a library of GAL4 drivers for individual cell types in the Drosophila brain

2:25 pm  Barry Dickson, Research Institute of Molecular Pathology, Vienna
          Cellular resolution analysis of neural circuits in the Drosophila brain

2:40 pm  Larry Zipursky, HHMI/University of California, Los Angeles
          A genetic approach to single-cell resolution of synapses at the light microscope level in the fly CNS

2:55 pm  Casey J. Guenthner, Stanford University
          Genetic access to neural populations defined by immediate early gene expression

3:10 pm  James W. Truman, Janelia Farm Research Campus/HHMI
          The use of lineages to define behavioral circuits in Drosophila.

3:25 pm  Tzumin Lee, Janelia Farm Research Campus/HHMI
          Reconstructing Drosophila central brain by cell lineage analysis

3:40 pm  Break

4:20 pm  Session 8: Genetics I (continued)

4:20 pm  Jean Livet, Institut de la Vision
          Approaches for circuit labeling and tracing with Brainbow

4:35 pm  Aljoscha Nern, Janelia Farm Research Campus/HHMI
          Genetic strategies for large-scale single cell labeling and their application to the cellular neuroanatomy of the fly optic lobes

4:50 pm  Rachel O. Wong, University of Washington
          Circuit assembly in the vertebrate retina

5:05 pm  Joshua Sanes, Harvard University
          Mapping retinal circuits

5:20 pm  Discussion on Genetics
          Leader: Rachel Wong
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Wednesday, October 24th

7:30 am  Breakfast (service ends at 8:45am)

9:00 am  Session 9: Genetics II
Chair: Hollis Cline

9:00 am  Chairperson's Introduction (10 min)

9:10 am  Josh Huang, Cold Spring Harbor Laboratory
 Genetic dissection of GABAergic circuits in the cerebral cortex

9:25 am  Hollis Cline, The Scripps Research Institute
 Distinct experience-dependent structural plasticity in GABAergic and glutamatergic
 neurons in the tectum of Xenopus laevis tadpoles

9:40 am  David C. Lyon, University of California, Irvine
 Selectively labeling the inputs to inhibitory or excitatory cortical cell-types using viral
 vectors

9:55 am  Ed Callaway, Salk Institute for Biological Studies
 Technical considerations in using glycoprotein-deleted rabies viruses for neural circuit
 tracing

10:10 am  Break

10:45 am  Closing Discussion
Chair: Gerry Rubin

11:30 am  Lunch and Departure (To-go boxes available from servery for those on first shuttle)

12:00 pm  First shuttle to Dulles
1:00 pm  Second shuttle to Dulles
2:00 pm  Last shuttle to Dulles