

**Sunday, November 5**

- 3:00 pm      Check-in
- 6:00 pm      Reception (*Lobby*)
- 7:00 pm      Dinner (*table assignments noted in Dining Room*)
- 8:00 pm      Science Speed Dating! (*Lobby*)**
- 9:00 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, November 6**

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

**9:00 am Session 1: Tools for interrogating neuronal network activity in primates**  
**Chair: Philipp Keller**

9:00 am **Maria Angela Franceschini**, Harvard Medical School  
*Functional near infrared spectroscopy: Enabling routine human brain imaging*

9:30 am **Bijan Pesaran**, New York University  
*Imaging the non-human primate brain on a large scale*

10:00 am Break

**10:30 am Session 2: Tools for interrogating neuronal network activity in rodents (I)**  
**Chair: Elizabeth Hillman**

10:30 am **Michael Hausser**, University College London  
*TBD*

11:00 am **Fritjof Helmchen**, University of Zurich  
*Mesoscale imaging of brain network dynamics in behaving mice*

11:30 pm **David Kleinfeld**, University of California, San Diego  
*Two-photon and fMRI measurements of activity-dependent, single-vessel dynamics across rodent cortex*

12:00 pm Lunch (*service ends at 1:00 pm*)

**1:30 pm Session 3: Tools for interrogating neuronal network activity in rodents (II)**  
**Chair: Charles Gilbert**

1:30 pm **Short talk: Alex Song**, Princeton University  
*Volumetric two-photon imaging via stereoscopy and two-photon calcium imaging simulator*

1:45 pm **Alipasha Vaziri**, Rockefeller University  
*Optical tools for unraveling whole-brain and large-scale neuronal circuit dynamics across model systems*

2:15 pm **Tim Harris**, Janelia Research Campus/HHMI  
*High channel count electrophysiology: Data is getting bigger*

2:45 pm **Na Ji**, Janelia Research Campus/HHMI  
*Video-rate volumetric functional imaging of the brain at synaptic resolution*

Emerging Tools for Acquisition and Interpretation of Whole-Brain Functional Data

- 3:15 pm Break
- 3:45 pm Poster Blitz! (3 minutes / 3 slides each)**
- Katie Ferguson**, Yale University  
**Joshua Glaser**, Northwestern University  
**Andrew Leifer**, Princeton University  
**Wenze Li**, Columbia University  
**Mikhail Rubinov**, Janelia Research Campus/HHMI  
**Seth Shipman**, Harvard Medical School  
**Henning Voss**, Weill Cornell Medical College
- 4:15 pm Poster Reception
- 6:00 pm Dinner
- 7:15 pm Session 5: Tools for interrogating neuronal network activity in rodents (IV)**  
**Chair: Winrich Freiwald**
- 7:15 pm **Chris Xu**, Cornell University  
*Multiphoton imaging of mouse brain*
- 7:45 pm **Short talk: Kaspar J. Podgorski**, Janelia Research Campus/HHMI  
*Megapixel two-photon imaging at kHz framerates*
- 8:00 pm **Short talk: Lei Sun**, The Hong Kong Polytechnic University  
*Precise control of neuronal activity by ultrasound: Fundamentals and toolkits*
- 8:15 pm Refreshments available at Bob's Pub

**Tuesday, November 7**

- 7:30 am Breakfast (*service ends at 8:45 am*)
- 9:00 am Session 6: Tools for interrogating neuronal network activity in small model systems**  
**Chair: Alipasha Vaziri**
- 9:00 am **Elizabeth M. Hillman**, Columbia University  
*SCAPE microscopy for whole-brain functional imaging*
- 9:30 am **Hari Shroff**, National Institute of Biomedical Imaging and Bioengineering/NIH  
*Mapping functional and structural neurodevelopment in worms and flies*
- 10:00 am **Quan Wen**, University of Science and Technology of China  
*Rapid whole brain imaging of neural activity in freely behaving larval zebrafish*
- 10:30 am Break
- 11:00 am Session 7: Biological questions and applications (I)**  
**Chair: Na Ji**
- 11:00 am **Rafael Yuste**, Columbia University  
*The mind of a Cnidarian: Non-overlapping networks in *Hydra vulgaris**
- 11:30 am **Karl Deisseroth**, HHMI/Stanford University  
*Brainwide structural and functional analysis*
- 12:00 pm **Katsuhiko Mikoshiba**, RIKEN Brain Science Institute  
*Molecular and Ca<sup>2+</sup> signaling network that regulates cell function*
- 12:30 pm Lunch (*service ends at 1:15 pm*)
- 1:15 pm Tour (*optional - meet at reception*)
- 2:15 pm Session 8: Biological questions and applications (II)**  
**Chair: Michael Hausser**
- 2:15 pm **Misha B. Ahrens**, Janelia Research Campus/HHMI  
*TBD*
- 2:45 pm **Philipp J. Keller**, Janelia Research Campus/HHMI  
*Reconstructing circuit development in the zebrafish embryonic spinal cord at the single-cell level*
- 3:15 pm **Aravinthan Samuel**, Harvard University  
*Multi-neuronal imaging of *C. elegans* courtship and mating*

## Emerging Tools for Acquisition and Interpretation of Whole-Brain Functional Data

- 3:45 pm Break
- 4:15 pm Panel Discussion (TBD)**
- 5:30 pm Poster Reception
- 7:00 pm Dinner
- 8:00 pm Session 9: Biological questions and applications (III)**  
**Chair: Dmitri Chklovskii**
- 8:00 pm **Winrich Freiwald**, Rockefeller University  
*Dissecting the Primate social brain*
- 8:30 pm **Charles Gilbert**, Rockefeller University  
*Circuit dynamics of visual cortex*
- 9:00 pm Refreshments available at Bob's Pub

## Wednesday, November 8

- 7:30 am Breakfast (*service ends at 8:45 am*)
- 9:00 am Session 10: Theory, modeling and data analysis tools (1)**  
**Chair: Aravi Samuel**
- 9:00 am **Kristin M. Branson**, Janelia Research Campus/HHMI  
*TBD*
- 9:30 am **Dmitri Chklovskii**, Simons Foundation  
*Similarity alignment - a principle of neural computation*
- 10:00 am **Shaul Druckmann**, Janelia Research Campus/HHMI  
*Relating circuit dynamics to computation: Robustness and dimension-specific computation in cortical dynamics*
- 10:30 am Break
- 11:00 am Session 11: Theory, modeling and data analysis tools (1)**  
**Chair: Bijan Pesaran**
- 11:00 am **Eftychios Pnevmatikakis**, Flatiron Institute  
*Online analysis of calcium imaging data in real time*
- 11:30 am **Short talk: Mark A. Reimers**, Michigan State University  
*Advanced image pre-processing methods make a substantial difference to resolution of optical imaging data*
- 11:45 am **Short talk: Srini C. Turaga**, Janelia Research Campus/HHMI  
*All optical circuit mapping by Bayesian inference of spikes and connectivity*
- 12:00 pm **Short talk: Manjari Narayan**, Stanford University  
*Statistical challenges in investigating perturbed functional coupling using probabilistic graphical models*
- 12:15 pm Closing Remarks
- 12:20 pm Lunch and Departure
- 1:00 pm First shuttle to Dulles  
2:00 pm Second shuttle to Dulles  
3:00 pm Last shuttle to Dulles