Sunday, November 6

3:00 pm   Check-in

6:00 pm   Reception (*Lobby*)

7:00 pm   Dinner

8:00 pm   Welcome / Opening Remarks

8:05 pm   A Celebration of Roger Tsien
           Remarks by Atsushi Miyawaki (RIKEN) and Stephen Adams (UCSD)

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, November 7

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

9:00 am  Session 1: Fluorescent Proteins I
Chair: Andrew Chisholm

9:00 am  Nathan C. Shaner, Scintillon Institute
Structure-guided design of improved fluorescent proteins

9:20 am  Erik L. Snapp, Janelia Research Campus/HHMI
Unexpected properties of fluorescent proteins in cells

9:40 am  Thomas E. Hughes, Montana State University
Optimizing fluorescent proteins and biosensors for 2 photon microscopy

10:00 am  Robert E. Campbell, University of Alberta
Venturing into the red and beyond to discover the next generation of indicators

10:20 am  Break

10:50 am  Session 2: Fluorescent Proteins II
Chair: Elizabeth Unger

10:50 am  Stefan Jakobs, Max Planck Institute for Biophysical Chemistry
Reversibly photoswitchable fluorescent proteins for live-cell super-resolution microscopy

11:10 am  Peter Dedecker, Katholieke Universiteit Leuven
New photoswitchable fluorescent proteins and structural mechanisms of photoswitching

11:30 am  Gerd Ulrich Nienhaus, Karlsruhe Institute of Technology
mGarnet2 - a far-red emitting fluorescent protein for STED microscopy

11:50 am  Vladislav Verkhusha, Albert Einstein College of Medicine
Near-infrared optical probes engineered from bacterial phytochromes

12:10 pm  Erik A. Rodriguez, University of California, San Diego
A far-red fluorescent protein evolved from a cyanobacterial phycobiliprotein

12:30 pm  Lunch (service ends at 1pm)
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Topic</th>
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</table>
| 2:00 pm| **Session 3: Sensors I**  
Chair: Amit Agarwal | **Gary Yellen**, Harvard Medical School  
*Dynamics of brain metabolism visualized in slice and in vivo by 2p-FLIM of metabolic biosensors* |
| 2:00 pm| **Session 3: Sensors I**  
Chair: Amit Agarwal | **Jin Zhang**, University of California, San Diego  
*New biosensors for dynamic signaling activities* |
| 2:20 pm| **Session 3: Sensors I**  
Chair: Amit Agarwal | **Ryohei Yasuda**, Max Planck Florida Institute for Neuroscience  
*Tools to study biochemical reaction in synapses* |
| 2:40 pm| **Session 3: Sensors I**  
Chair: Amit Agarwal | **Marcel Bruchez**, Carnegie Mellon University  
*FRET-based fluorogenic sensors for physiology in live cells and model organisms* |
| 3:00 pm| **Session 3: Sensors I**  
Chair: Amit Agarwal | Break |
| 3:50 pm| **Session 4: Sensors II**  
Chair: Julius Zhu | **Amy E. Palmer**, University of Colorado at Boulder  
*Quantitative biology with genetically encoded sensors – opportunities and challenges* |
| 4:10 pm| **Session 4: Sensors II**  
Chair: Julius Zhu | **Jennifer Lippincott-Schwartz**, Janelia Research Campus/HHMI  
*Emerging fluorescence technology to study the spatial and temporal dynamics of organelles* |
| 4:30 pm| **Session 4: Sensors II**  
Chair: Julius Zhu | **Takeharu Nagai**, Osaka University  
*Five color variants of bright bioluminescent protein and Ca(2+) indicators for real-time multicolor bioimaging* |
| 4:50 pm| **Session 4: Sensors II**  
Chair: Julius Zhu | **Luke Lavis**, Janelia Research Campus/HHMI  
*Overcoming the tyranny of the ribosome* |
| 5:10 pm| **Session 4: Sensors II**  
Chair: Julius Zhu | **Group Discussion** |
| 5:40 pm| **Session 4: Sensors II**  
Chair: Julius Zhu | Poster Reception |
| 7:15 pm| **Session 4: Sensors II**  
Chair: Julius Zhu | Dinner |
| 8:15 pm| **Session 5: Genetically Encoded Calcium Indicators I**  
Chair: Kimberly Beatty | **Katalin Torok**, St George's University London  
*Development of fast genetically-encoded calcium indicators for monitoring calcium flux* |
8:35 pm  **Haruhiko Bito**, The University of Tokyo Graduate School of Medicine  
*Multiplex imaging of neural activity and signaling dynamics*

8:55 pm  **Douglas Kim**, Janelia Research Campus/HHMI  
*Optimizing red GECIs for imaging neural activity*

9:15 pm  Refreshments available at Bob’s Pub
Tuesday, November 8

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

9:00 am  Session 6: Genetically Encoded Calcium Indicators II / Applications I
Chair: Joel Kralj

9:00 am  Osamu Sadakane, RIKEN Brain Science Institute
Two-photon calcium imaging using genetically-encoded calcium indicator in primate brain

9:20 am  Eric R. Schreiter, Janelia Research Campus/HHMI
Permanent marking and selective manipulation of active neurons

9:40 am  Tim Murphy, University of British Columbia
Automated functional, mesoscopic cortical imaging, self-initiated by GCaMP6 transgenic mice in their home-cage

10:00 am  Spencer L. Smith, University of North Carolina School of Medicine
Multiphoton imaging systems for capturing fast dynamics across large volumes

10:20 am  Break

11:00 am  Session 7: Synaptic Imaging
Chair: Tal Laviv

11:00 am  Yulong Li, Peking University
Spying neurotransmitter release by new genetically-encoded indicators

11:20 am  Lin Tian, University of California, Davis
Genetically encoded indicators for probing synaptic transmission

11:40 am  Akiko Hayashi-Takagi, Gunma University
Mapping of Hebbian synaptic potentiation using synaptic optoprobes

12:00 pm  Jonathan Marvin, Janelia Research Campus/HHMI
Sensors for tracking neurotransmitter release in living animals

12:20 pm  Lunch (service ends at 1pm)

1:00 pm  Tour (optional – meet at reception)

2:00 pm  Session 8: Applications II
Chair: Saumya Saurabh

2:00 pm  Atsushi Miyawaki, RIKEN Brain Science Institute
Fluorescent protein-based probes and hardware/software functions
<table>
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<tr>
<th>Time</th>
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<tbody>
<tr>
<td>2:20 pm</td>
<td><strong>Michelle Baird</strong>, National Institutes of Health</td>
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<td><em>Local pulsatile contractions are an intrinsic property of the myosin 2A motor in the cortex of adherent cell</em></td>
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<td>2:40 pm</td>
<td><strong>Itaru Hamachi</strong>, Kyoto University</td>
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<td><em>Chemical method for labeling and imaging endogenous proteins in live cells</em></td>
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<td>3:00 pm</td>
<td>Break</td>
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<td>3:30 pm</td>
<td><strong>Session 9: Applications III</strong></td>
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<td>3:30 pm</td>
<td><strong>Philipp J. Keller</strong>, Janelia Research Campus/HHMI</td>
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<td><em>Whole-animal imaging with high spatio-temporal resolution</em></td>
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<td>3:50 pm</td>
<td><strong>Darcy S. Peterka</strong>, Columbia University</td>
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<td><em>Controlling light, flexibly</em></td>
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<td>4:10 pm</td>
<td><strong>Na Ji</strong>, Janelia Research Campus/HHMI</td>
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<td><em>Video-rate volumetric functional imaging of the brain at synaptic resolution</em></td>
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<td>4:30 pm</td>
<td><strong>Michael Z. Lin</strong>, Stanford University</td>
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<td><em>Coloring outside the lines with fluorescent proteins: Engineering new applications</em></td>
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<td><strong>Group Discussion</strong></td>
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<td>Poster Reception</td>
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<td>Dinner</td>
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<td>8:00 pm</td>
<td><strong>Session 10: Permanent Marking</strong></td>
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<td>8:00 pm</td>
<td><strong>Alice Ting</strong>, Stanford University</td>
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<td><em>Directed evolution of molecular probes for cell biology and neuroscience</em></td>
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<td>8:20 pm</td>
<td><strong>Jason N. D. Kerr</strong>, Research Center Caesar</td>
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<td><em>Spike detection with biophysical models for GCaMP6 and other multivalent calcium indicator proteins</em></td>
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<td>8:40 pm</td>
<td><strong>Hyungbae Kwon</strong>, Max Planck Florida Institute for Neuroscience</td>
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<td><em>Optogenetic toolkit to label learning-specific neural circuits</em></td>
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<td>9:00 pm</td>
<td><strong>Mark H. Ellisman</strong>, University of California, San Diego</td>
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<td><em>Marking cells, organelles and macromolecules for correlated x-ray, LM and EM</em></td>
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<td>9:20 pm</td>
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11/4/16
Wednesday, November 9

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

9:00 am  Session 11: Voltage sensing I
Chair: Loren Looger

9:00 am  Adam Cohen, HHMI/Harvard University
Optical electrophysiology in intact tissue

9:20 am  Thomas Knöpfel, Imperial College London
Genetically encoded voltage indicator imaging of GABAergic cell classes in the mouse brain

9:40 am  Mark Schnitzer, HHMI/Stanford University
Imaging neural action potentials in awake mice and flies with sub-millisecond temporal resolution

10:00 am  Vincent A. Pieribone, Yale School of Medicine/Pierce Laboratory
Engineering improved voltage indicators

10:20 am  Bradley Baker, Korea Institute of Science and Technology
The mechanism of voltage-induced fluorescence change inspires ratiometric genetically encoded voltage indicators

10:40 am  Break

11:00 am  Session 12: Voltage sensing II
Chair: Luke Lavis

11:00 am  Srdan Antic, University of Connecticut
The best applications for genetically-encoded voltage sensors and intracellular voltage-sensitive dyes with currently available methods

11:20 am  Allison Walker, University of California, Berkeley
The development and application of PeT-based voltage sensitive dyes to study neuronal activity

11:40 am  Meyer Jackson, University of Wisconsin, Madison
hVOS Imaging of Voltage in Axons and Cre-Targeted Neurons

12:00 pm  Group Discussion

12:30 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

11/4/16