Sunday, May 18th

3:00 pm Check-in

6:00 pm Reception *(Lobby)*

7:00 pm Dinner

8:00 pm **Keynote Lecture: Erik M. Jorgensen**, HHMI/University of Utah
Ultrafast endocytosis and perspectives on the field

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, May 19th

Talks are 20 minutes, plus 5 minutes for Q&A

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

9:00 am **Session 1: Tools I**
Chair: Julie Simpson

9:00 am **Peter G. Hegemann**, Humboldt-Universität zu Berlin
Multi-component optogenetics

9:25 am **John Y. Lin**, University of California, San Diego
Assessment of channelrhodopsin variants and other optogenetic technologies

9:50 am **Andrew Woolley**, University of Toronto
Chemical and biochemical photoswitches for neuroscience

10:15 am Break

10:50 am **Session 2: Tools II**
Chair: Luis de Lecea

10:50 am **Chandra Tucker**, University of Colorado School of Medicine
New cryptochrome-derived tools to probe cellular function

11:15 am **Yi Yang**, East China University of Science and Technology
Light-switchable transgene systems

11:40 am **Andreas Möglich**, Humboldt-Universität zu Berlin
Engineering of red light-activated cAMP/cGMP-specific phosphodiesterases

12:05 pm Lunch *(service ends at 1pm)*

1:15 pm Tour *(optional – meet at reception)*

2:30 pm **Session 3: Tools III**
Chair: Andrew Woolley

2:30 pm **Silvana Konermann**, Massachusetts Institute of Technology
Neuroengineering - molecular and optical axes of control

2:55 pm **Richard H. Kramer**, University of California, Berkley
Optogenetic control of endogenous ion channels and receptors in the brain and retina

3:20 pm **Loren Looger**, Janelia Farm Research Campus/HHMI
Trying to engineer directly light-gated, high-conductance ion channels

3:45 pm Break

4:15 pm Discussion on tools and technologies

5:00 pm **Poster Blitz I** ***(6 min / 4 slides max per talk; questions saved for poster session)***

Ratna Chaturvedi, UMass Medical School
Shrivats M. Iyer, Stanford University
Sung Soo Kim, Janelia Farm Research Campus/HHMI
Michael Krashes, National Institutes of Health - NIDDK
Tatsuo Sato, University College London Institute of Ophthalmology
Dong Wang, National Institute on Drug Abuse

6:00 pm Poster Reception

7:30 pm Dinner

8:30 pm Refreshments available at Bob's Pub

Tuesday, May 20th

Talks are 20 minutes, plus 5 minutes for Q&A

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

9:00 am **Session 4: Applications I**
Chair: Peter Hegemann

9:00 am **Edward S. Boyden**, Massachusetts Institute of Technology
Tools for mapping and engineering brain circuits

9:25 am **Hidehiko Inagaki**, Janelia Farm Research Campus/HHMI
Red-shifted opsins for optogenetics in freely behaving flies

9:50 am **Wendell Lim**, HHMI/University of California, San Francisco
Optogenetically interrogating the dynamics of cell signaling

10:15 am **Thomas E. Hughes**, Montana State University
New, robust sensors for cAMP for multiplex measurements of multiple second messengers and the control of cAMP levels in living cells

10:40 am Break

11:10 am **Session 5: Applications II**
Chair: Thomas Hughes

11:10 am **Ehud Isacoff**, University of California, Berkeley
Optical control of synaptic plasticity with light-gated glutamate receptors

11:35 am **Karl Deisseroth**, HHMI/Stanford University
Optical deconstruction of fully-assembled biological systems

12:00 pm **Andreas Neef**, Max Planck Institute for Dynamics and Self-Organization
Continuous dynamic photostimulation

12:25 pm **Bryan W. Luikart**, Geisel School of Medicine at Dartmouth
Pten knockout in newborn neurons increases extrinsic excitability

12:50 pm Lunch *(service ends at 1pm)*

2:30 pm **Session 6: Applications III**
Chair: Richard Kramer

2:30 pm **Michael N. Nitabach**, Yale School of Medicine
Behavioral and physiological genetics approaches to synaptic circuit breaking

2:55 pm **Benjamin H. White**, National Insitute of Mental Health/NIH
Using the side entrance: Exploiting T2A peptide and coding introns to gain genetic access to cells expressing genes of interest

3:20 pm **Alexander Gottschalk**, Johann Wolfgang Goethe University
Unbiased optogenetic functional circuit mapping in Caenorhabditis elegans

3:45 pm **Alipasha Vaziri**, Research Institute of Molecular Pathology (IMP) & University of Vienna
Towards a dynamic map of neuronal circuits

4:10 pm Break

4:40 pm **Poster Blitz II** ***(6 min / 4 slides max per talk; questions saved for poster session)***

Edward J. Hujber, University of Utah
Nachiket Kashikar, University of Sussex
SooHyun Lee, NYU Neuroscience Institute
Qian-Quan Sun, University of Wyoming
Yutaka Yoshida, Cincinnati Children's Hospital Medical Center

5:30 pm Poster Reception

7:00 pm Dinner

8:30 pm Refreshments available at Bob's Pub

Wednesday, May 21st

Talks are 20 minutes, plus 5 minutes for Q&A

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

9:00 am **Session 7: Applications IV**
Chair: Loren Looger

9:00 am **Scott M. Sternson**, Janelia Farm Research Campus/HHMI
Neural circuits and motivational processes for hunger

9:25 am **Luis de Lecea**, Stanford University
Optogenetics of hyperarousal

9:50 am **Peer Wulff**, University of Kiel
Parvalbumin-positive interneurons of the prefrontal cortex support working memory and cognitive flexibility

10:15 am **Joshua A. Gordon**, Columbia University
The functional role of ventral hippocampal inputs to the medial prefrontal cortex

10:40 am Break

11:10 am Closing Discussion *(led by Loren Looger)*

12:00 pm Lunch and Departure

12:30 pm First shuttle to Dulles
1:30 pm Second shuttle to Dulles
2:30 pm Last shuttle to Dulles

HHMI janelia farm research campus