Sunday, April 26

3:00 pm Check-in

6:00 pm Reception *(Lobby)*

7:00 pm Dinner

8:00 pm **Keynote Lecture**
Clay Reid, Allen Institute for Brain Science
tbd

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, April 27

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

9:00 am **Session 1: Visual circuits I**
Chair: László Acsády

9:00 am **Martin Usrey**, University of California, Davis
Organization and dynamic properties of neural circuits interconnecting thalamus and cortex

9:15 am **Jose-Manuel Alonso**, SUNY College of Optometry
Thalamocortical function and visual perception

9:30 am **Leopoldo Petreanu**, Champalimaud Foundation
Multilaminar networks of interconnected pyramidal neurons spanning granular and supragranular layers of mouse visual cortex receive common input from the dLGN

9:45 am **Massimo Scanziani**, HHMI/University of California, San Diego
Generation of direction selective visual responses at the thalamo-cortical synapse

10:00 am **Judith A. Hirsch**, University of Southern California
Evolutionarily conserved principles of sensory processing in the visual thalamus

10:15 am Break

10:45 am **Session 2: Visual circuits II**
Chair: Louise Parr-Brownlie

10:45 am **Na Ji**, Janelia Research Campus/HHMI
Lateral geniculate nucleus provides layers 1 through 4 of primary visual cortex with orientation- and direction-selective inputs

11:00 am **Cristopher M. Niell**, University of Oregon
Visual coding and behavior in thalamic pathways of the mouse

11:15 am **Sonja Hofer**, University of Basel
Functional characterization of higher-order thalamic input into mouse visual cortex

11:30 am **Gabe Murphy**, Janelia Research Campus/HHMI
Motion sensitive neurons in the superior colliculus are a key node in the extrageniculate pathway from retina to visual cortex

11:45 am **Xiao Jing Wang**, New York University
Thalamocortical circuit in cognition

12:00 pm Discussion

12:15 pm Lunch *(service ends at 1:00 pm)*

1:00 pm Tour *(optional - meet at reception)*

2:00 pm **Session 3: Higher-order visual circuits**
Chair: Michael Beierlein

2:00 pm **S. Murray Sherman**, University of Chicago
Transthalamic cortical pathways: Feedforward and feedback?

2:15 pm **Vivien A. Casagrande**, Vanderbilt University
Illuminating the role of the visual thalamus in interactions with cortex

2:30 pm Discussion

2:45 pm Break

3:15 pm **Session 4: Motor circuits I**
Chair: Carmen Varela

3:15 pm **Robert S. Turner**, University of Pittsburgh
Basal ganglia-thalamic communication in the macaque motor circuit

3:30 pm **Dieter Jaeger**, Emory University
The basal ganglia receiving zone of motor thalamus - Interactions with cortex and the basal ganglia

3:45 pm **Jesse Goldberg**, Cornell University
Motor thalamic circuits underlying motor exploration during learning

4:00 pm **Zengcai Guo**, Janelia Research Campus/HHMI
Maintenance of persistent activity in premotor cortex by thalamocortical reciprocal connections

4:15 pm **Robert H. Wurtz**, National Institutes of Health
A contribution of the thalamus to visual perception

4:30 pm Break

5:15 pm Poster Reception

6:45 pm Dinner

8:00 pm **Session 5: Motor circuits II**
Chair: Martin Usrey

8:00 pm **Minoru Kimura**, Tamagawa University
Neural basis of cognitive control of behavior in the centromedian nucleus of thalamus and its projection to the striatum

8:15 pm **Masaki Tanaka**, Hokkaido University School of Medicine
Transformation of temporally-specific cerebellar signals through the thalamocortical pathways

8:30 pm **László Acsády**, Institute of Experimental Medicine, Hungary
The role of intralaminar thalamic nuclei in motor control

8:45 pm Discussion

9:00 pm Refreshments available at Bob's Pub

Tuesday, April 28

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

9:00 am **Session 6: Primary somatosensory thalamus**
Chair: Jesse Goldberg

9:00 am **Barry W. Connors**, Brown University
Corticothalamic switching: Synaptic and intrinsic mechanisms

9:15 am **Garrett Stanley**, Georgia Institute of Technology
Timing and the neural code of the thalamocortical circuit

9:30 am **Diego Gutnisky**, Janelia Research Campus/HHMI
Neural coding transformation in the thalamocortical circuit

9:45 am **David Kleinfeld**, University of California, San Diego
A single pathway from trigeminus to cortex carries both reafferent and exafferent signals for vibrissa active touch

10:00 am Break

10:30 am **Session 7: Higher-order somatosensory systems**
Chair: Karel Svoboda

10:30 am **Martin Deschênes**, Centre de Recherche Universite Laval Robert-Giffard
The role of the paralemniscal pathway

10:45 am **Rasmus S. Petersen**, University of Manchester
Population coding of whisker motion in the thalamus

11:00 am **Tess Oram**, Weizmann Institute of Science
VPM and POm activity in freely-moving mice

11:15 am **Randy M. Bruno**, Columbia University
Gating of superficial cortical layers by secondary somatosensory thalamus

11:30 am Discussion

11:45 am Lunch *(service ends at 1pm)*

2:15 pm **Session 8: State-dependent processing I**
Chair: Cris Neill

2:15 pm **Anita Luthi**, University of Lausanne
Sleep spindles: Where they come from, what they do

2:30 pm **John Huguenard**, Stanford University
Evidence for chemical inhibitory connectivity within the thalamic reticular nucleus

2:45 pm **Michael Beierlein**, University of Texas Medical School
Asymmetrical synaptic connectivity limits synchronous firing in thalamic networks

3:00 pm **Michael Halassa**, NYU Neuroscience Institute
State-dependent architecture of thalamic reticular subnetworks

3:15 pm Discussion

3:30 pm Break

4:30 pm Poster Reception

6:00 pm Dinner

7:30 pm **Session 9: State-dependent processing II**
Chair: Judith Hirsch

7:30 pm **Jeanne Paz**, University of California, San Francisco
Thalamic drive of cortical rhythms and an on-line control of loss of consciousness

7:45 pm **Carmen Varela**, Massachusetts Institute of Technology
Sleep thalamo-cortico-hippocampal interactions

8:00 pm **David McCormick**, Yale School of Medicine
State dependent activity in thalamocortical systems

8:15 pm **Harvey Swadlow**, University of Connecticut
Awake brain states and thalamocortical communication

8:30 pm **Ferenc Matyas**, Institute of Experimental Medicine, Hungary
Direct control of the arousal by midline thalamic networks

8:45 pm Discussion

9:00 pm Refreshments available at Bob's Pub

Wednesday, April 29

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

9:00 am **Session 10: Clinical approaches**
Chair: Anita Luthi

9:00 am **Nicholas Schiff**, Weill Cornell Medical College
tbd

9:15 am **Louise Parr-Brownlie**, University of Otago
Correcting abnormal motor thalamus activity in parkinsonian rats improves movements

9:30 am **Anatol Kreitzer**, Gladstone Institutes/UCSF
Pathway-specific remodeling of thalamostriatal synapses in parkinsonian mice

9:45 am **Andres Lozano**, University of Toronto
Using deep brain stimulation to control rogue circuits

10:00 am **Rodolfo R. Llinas**, NYU Langone Medical Center
The thalamocortical dysrhythmias

10:15 am Break

10:45 am **Session 11: Limbic systems**
Chair: David Kleinfeld

10:45 am **Hee-Sup Shin**, Institute for Basic Science (IBS)
The superior colliculus-mediodorsal thalamic circuit is involved in fear memory extinction/erasure in the mouse

11:00 am **Fabricio H. Do Monte**, University of Puerto Rico
Recruitment of corticothalamic-amygdalar circuits for retrieval of fear memory

11:15 am **Adrien Peyrache**, New York University
Thalamic mechanisms of the head direction sense

11:30 am **Bo Li**, Cold Spring Harbor Laboratory
ErbB4 regulation of a thalamic reticular nucleus circuit for sensory selection

11:45 am Closing Discussion / Final Remarks

12:15 pm Lunch and Departure

12:45 pm First shuttle to Dulles
1:45 pm Second shuttle to Dulles
2:45 pm Last shuttle to Dulles