Sunday, October 29

3:00 pm Check-in

6:00 pm Reception *(Lobby)*

7:00 pm Dinner

8:10 pm Welcome and Opening Remarks

8:15 pm **Keynote Talk: Leslie Osborne**, University of Chicago
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, October 30

Talks are 15 minutes + 5 minutes for Q&A

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

9:00 am **Session 1**
Chair: Stephanie Palmer

9:00 am **Leopoldo Petreanu**, Champalimaud Foundation
A head fixed motion-discrimination task for probing cortical circuits for motion perception in mice

9:20 am **Alexander Borst**, Max Planck Institute of Neurobiology
How does direction selectivity emerge in fly motion-sensitive neurons?

9:40 am **Wei Wei**, University of Chicago
The synaptic mechanisms underlying contextual modulation in the retinal direction selective circuit

10:00 am Break

10:40 am **Session 2**
Chair: Michael Orger

10:40 am **Jeffrey Diamond**, National Institute of Neurological Disorders and Stroke/NIH
Compartmentalized dendritic signaling in starburst amacrine cells

11:00 am **Martin Egelhaaf**, Universität Bielefeld
Motion as a source of environmental information on timescales determined by behavioral action

11:20 am **Marlene Cohen**, University of Pittsburgh
How cognitive factors improve motion perception

11:40 am Lunch *(service ends at 1:00 pm)*

1:15 pm **Session 3**
Chair: Karin Nordström

1:15 pm **John Maunsell**, University of Chicago
Attention, normalization and motion processing in monkey visual cortex

1:35 pm **Gaby Maimon**, Rockefeller University
Gaze stability and efference copy in Drosophila vision

1:55 pm **Stephanie Palmer**, University of Chicago
Understanding vision through the lens of prediction

2:15 pm **Marion Silies**, European Neuroscience Institute
Genetic dissection of motion vision pathways: From behavior to cellular and circuit function

2:35 pm Break

3:15 pm **Session 4**
Chair: Greg DeAngelis

3:15 pm **David Berson**, Brown University
Direction-selective retinal ganglion cells encode self-motion along the gravitational and body axes

3:35 pm **Marla Feller**, University of California, Berkeley
Developmental plasticity in direction selective circuits

3:55 pm **Tom R. Clandinin**, Stanford University
Dissecting the circuit and algorithmic implementation of motion processing in Drosophila

4:15 pm **Michael B. Orger**, Champalimaud Centre for the Unknown
Identifying the neural circuits responsible for self-motion processing in the larval zebrafish

4:35 pm Short Break

4:50 pm **Poster Blitz *(3 minutes / 3 slides each)***

Terufumi Fujiwara, Champalimaud Centre for the Unknown
Jinglin Li, Universität Bielefeld
Jean-Michel Mongeau, University of California, Los Angeles
Arbora Resulaj, University of California, San Francisco
Peng Sun, University of California, Irvine
Siwei Wang, Hebrew University of Jerusalem
Daniel Wilson, Max Planck Florida Institute for Neuroscience

5:15 pm Poster Reception

7:00 pm Dinner

8:15 pm **Keynote Talk: Simon Laughlin,** University of Cambridge
The economic benefits of a neural circuit motif

9:00 pm Refreshments available at Bob's Pub

Tuesday, October 31

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

9:00 am **Session 5**
Chair: Michael Reiser

9:00 am **John H. Reynolds**, Salk Institute for Biological Studies
Spontaneous cortical waves in Area MT of the awake marmoset modulate neural and perceptual sensitivity

9:20 am **Karin Nordström**, Flinders University
Hoverfly vision in naturalistic surrounds

9:40 am **Jianhua Cang**, University of Virginia
Motion processing in the mouse superior colliculus

10:00 am Break

10:40 am **Session 6**
Chair: Eugenia Chiappe

10:40 am **Stephen Lisberger**, Duke University
Neural mechanisms of Bayesian inference for sensory-motor behavior

11:00 am **Eyal Gruntman**, Janelia Research Campus/HHMI
Simple integration of fast excitation and offset, delayed inhibition computes directional selectivity in Drosophila

11:20 am **William R. Taylor**, University of California, Berkeley
Specific inhibitory pathways mediate saccadic suppression in direction-selective ganglion cells

11:40 am Lunch *(service ends at 1:00 pm)*

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

2:00 pm **Session 7**
Chair: Tom Clandinin

2:00 pm **Fabrizio Gabbiani**, Baylor College of Medicine
Biophysics of object segmentation in a collision-detecting neuron

2:20 pm **Bart Borghuis**, University of Louisville
Temporally diverse excitation generates direction selective responses in ON and OFF-type retinal starburst amacrine cells

2:40 pm **Na Ji**, Janelia Research Campus/HHMI
Thalamus provides layer 4 of primary visual cortex with orientation- and motion-direction-tuned inputs

3:00 pm Break

3:45 pm **Session 8**
Chair: Leslie Osborne

3:45 pm **Gautam Awatramani**, University of Victoria
Synaptic mechanisms underlying contrast invariant direction tuning in the mouse retina

4:05 pm **Damon A. Clark**, Yale University
Two distinct motion detection algorithms regulate walking speed and turning in Drosophila

4:25 pm Group Discussion

5:30 pm Poster Reception

7:15 pm Dinner

8:15 pm **Keynote Talk: Massimo Scanziani,** HHMI/University of California, San Francisco
Mechanism for the emergence of direction selectivity in visual cortex

9:00 pm Refreshments available at Bob's Pub

Wednesday, November 1

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

9:00 am **Session 9**
Chair: Marla Feller

9:00 am **George Sperling**, University of California, Irvine
The three systems for the extraction of visual motion direction

9:20 am **Kevin L. Briggman**, Center of Advanced European Studies and Research
Combinatorial coding of motion stimuli in the larval zebrafish brain

9:40 am **Eugenia Chiappe**, Champalimaud Foundation
Visuomotor interactions for self-movement estimation and course control

10:00 am **David J. Heeger**, New York University
Theory of cortical function

10:20 am Break

11:00 am **Session 10**
Chair: Gaby Maimon

11:00 am **Jeremy N. Kay**, Duke University
The earliest steps in formation of the retinal direction-selective circuit

11:20 am **Gregory C. DeAngelis**, University of Rochester
Neural mechanisms for perceiving object motion during self-motion

11:40 am Concluding Discussion / Final Remarks

12:15 pm Conclusion / Lunch / Departure

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