Sunday, October 28

3:00 pm	Check-in
6:00 pm	Reception *(Lobby)*
6:30 pm	Dinner
7:30 pm	**Game!** *(Gallery)*
8:30 pm	Social time at Bob's Pub

NOTE:
Meals are in the **Dining Room**
Talks are in the **Seminar Room**
Posters are in the **Lobby**

Monday, October 29

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

9:00 am **Session 1: Anatomy**
Chair: Shanel Pickard

9:00 am Introduction to the session

9:05 am **Nicholas Strausfeld**, University of Arizona
Divergent evolution of the central complex

9:25 am **Stanley Heinze**, Lund University
Connectivity patterns in the bumblebee central complex - how much fly is in the bee?

9:45 am **Joshua Martin**, Colby College
Comparative morphology of the central complex in a diverse lineage of hunting insects (Mantodea:Tarachodidae)

10:05 am Break

10:35 am **Tanya Wolff**, Janelia Research Campus/HHMI
Neuroarchitecture of the drosophila central complex: A catalog of nodulus and asymmetrical body neurons

10:55 am **Paul Tillberg**, Janelia Research Campus/HHMI
Expansion microscopy - scalable super-resolution imaging through uniform specimen expansion

11:25 am **Session 2: Development**
Chair: Ioannis Pisokas

11:25 am Introduction to the session

11:30 am **Luis Sullivan**, University of Oregon
Temporal identity establishes columnar neuron morphology and connectivity

11:50 am **Alice Chou**, University of Maryland Baltimore County
Structure through the stages: Development of the stomatopod central complex

12:10 pm Lunch *(service ends at 1pm)*

2:00 pm **Session 3: Compass Navigation Part 1**
Chair: Uta Pegel

2:00 pm Introduction to the session

2:05 pm **Marie Dacke**, Lund University
As the craw flies and the beetle rolls: Straight-line orientation from behaviour to neurons

2:35 pm **Basil el Jundi**, University of Würzburg
A multimodal orientation compass in the dung beetle's central complex

2:55 pm Break

3:30 pm **Session 4: Vision**
Chair: Timothy Currier

3:30 pm Introduction to the session

3:35 pm **Dan Nilsson**, Lund University
New eyes on the visual world

4:05 pm **Ben Hardcastle**, University of California, Los Angeles
Polarized light coding in the Drosophila anterior visual pathway

4:25 pm **Anna Honkanen**, Lund university
Delineating the optic flow input to the central complex by mapping visually responsive neurons in the bee's protocerebrum

4:45 pm **Siwei Wang**, Hebrew University of Jerusalem
Electrotonic segregation enables encoding about future stimulus without external sensory stimulus

5:05 pm Break

5:35 pm **Group Discussion:** *Matching central complex design and function to visuomotor need*
Panel: *Marie Dacke, Stanley Heinze, Uwe Homberg, Dan Nilsson, Nick Strausfeld*
Moderators: *Hannah Haberkern, Josh Martin*

6:30 pm Dinner

7:30 pm **Poster Reception**

8:30 pm Refreshments available at Bob's Pub

Tuesday, October 30

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

9:00 am **Session 5: Compass Navigation Part 2**
Chair: Uta Pegel

9:00 am Introduction to the session

9:05 am **Uwe Homberg**, Philipps-Universität Marburg
The celestial compass in the central complex of the desert locust

9:25 am **Keram Pfeiffer**, University of Würzburg
Dynamic properties of sky-compass neurons in the bumblebee

9:45 am **Rickesh Patel**, University of Maryland, Baltimore County
Celestial and idiothetic compasses in a path integrating mantis shrimp

10:05 am **Kiah Hardcastle**, Stanford University
Dynamic coding in entorhinal cortex

10:35 am Break

11:05 am **Session 6: Memory and Plasticity**
Chair: Martina Held

11:05 am Introduction to the session

11:10 am **Wolfgang Rössler**, University of Würzburg
Desert ant navigation – sensory cues and related plasticity in the central complex and mushroom bodies during initial calibration

11:40 am **Yvette Fisher**, Harvard Medical School
Burst firing conveys visual signals to a heading direction circuit in Drosophila

12:00 pm **Sung Soo Kim**, Janelia Research Campus/HHMI
Encoding heading information from visual scene via competitive anti-Hebbian plasticity in the Drosophila ellipsoid body

12:20 pm Group photo *(meet in the Lobby)*

12:30 pm Lunch *(service ends at 1pm)*

1:30 pm Tour *(optional - meet at reception)*

2:30 pm **Session 6: Continued**

2:30 pm **Barbara Webb**, University of Edinburgh
A model of vector memory in the central complex supports novel shortcuts and trapline formation

2:50 pm **Vanessa Ruta**, The Rockefeller University
Linking odor assessment and navigation

3:20 pm **Yoshinori Aso**, Janelia Research Campus/HHMI
Cotransmitters of dopaminergic neurons diversify memory dynamics of memory units

3:50 pm Break

4:20 pm **Session 7: Navigation in 2D**
Chair: Tu Anh Ngyen Thi

4:20 pm Introduction to the session

4:25 pm **Manal Shakeel**, National Centre for Biological Sciences
Neural basis of sugar-elicited search behaviour in Drosophila melanogaster

4:45 pm **Itzel Ishida**, The Rockefeller University
Towards a neural understanding of search behavior in Drosophila

5:05 pm **Hannah Haberkern**, Janelia Research Campus/HHMI
Two-dimensional virtual reality with optogenetic reinforcement to study landmark-guided navigation in head-fixed Drosophila

5:25 pm **Cheng Lyu**, The Rockefeller University
A multimodal forward speed signal in the Drosophila central complex

5:45 pm Break

6:15 pm **Group Discussion:** *Multi-sensory navigation and memory*
Panel: *Yoshi Aso, Hannah Haberkern, Gaby Maimon, Wolfgang Rossler, Vanessa Ruta, Barbara Webb*
Moderators: *Basil el Jundi, Yvette Fisher*

7:00 pm Dinner

8:00 pm **Poster Reception**

9:30 pm Refreshments available at Bob's Pub

Wednesday, October 31

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

9:00 am **Session 8: Sleep**
Chair: Frederick Zittrell

9:00 am Introduction to the session

9:05 am **Jeffrey Donlea**, University of California Los Angeles
Recurrent circuitry for balancing sleep need and sleep

9:25 am **Margaret Ho**, Johns Hopkins University
A relay switch mechanism for transmission of homeostatic sleep drive

9:45 am **Session 9: Orienting and Motor Control**
Chair: Lilian Coie

9:45 am Introduction to the session

9:50 am **Katherine Nagel**, New York University
Multimodal control of orientation and navigation in Drosophila

10:10 am **Nicholas Kathman**, Case Western Reserve University
TBD

10:30 am Break

11:00 am **Session 9: Continued**

11:00 am **Roy Ritzmann**, Case Western Reserve University
Central complex influence on prey tracking in the praying mantis

11:20 am **Sasha Rayshubskiy**, Harvard University
Sensory convergence onto descending neurons that control heading direction during walking in Drosophila

11:40 am **Kyobi Skutt-Kakaria**, Harvard University
A circuit bottleneck imparts individuality to context modulation of locomotion

12:00 pm **Group Discussion:** *Paths to understanding the manifold functions of the central complex*
Panel: *Benjamin de Bivort, Basil el Jundi, Yvette Fisher, Kiah Hardcastle, Vivek Jayaraman*
Moderators: *Stanley Heinze, Barbara Webb*

12:45 pm	Lunch and Departure
1:15 pm	First shuttle to Dulles
2:15 pm	Second shuttle to Dulles
3:15 pm	Last shuttle to Dulles