**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

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**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 Nguyen 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

*Revised 10/24/2018*
**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

Revised 10/24/2018
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