

Functional Anatomy of the Arthropod Central Complex & Motor System

Schedule at a Glance

Sunday May 11th

3:00 pm	Check-in
6:00 pm	Reception
7:00 pm	Dinner
8:00 pm	Welcome
8:15 pm	Keynote Presentation

Monday May 12th

8:00 am	Breakfast
9:00 am	Session 1: Comparative Anatomy/ Evolution of the Central Complex
10:00 am	Break and Group Photo
10:30 am	Session 1 continued
11:00 am	General Discussion
11:30 am	Tour (optional)
12:00 pm	Lunch
1:30 pm	Session 2: Development and Anatomy
2:45 pm	Break
3:15 pm	Session 2 continued
4:15 pm	General Discussion
5:00 pm	Report from the Nomenclature Committee
6:00 pm	Reception
7:00 pm	Dinner
8:00 pm	Session 3: Imaging, Recording, and Manipulation Neurons
9:15 pm	Poster Reception

Tuesday May 13th

8:00 am	Breakfast
9:00 am	Session 4: Vision and the Central Complex
11:00 am	General Discussion
12:00 pm	Lunch
1:30 pm	Session 5: Locomotion
3:10 pm	Break
4:15 pm	Session 5 continued
5:00 pm	General Discussion
6:00 pm	Dinner
8:00 pm	Keynote Presentation
9:00 pm	Poster Reception

Wednesday May 14th

8:00 am	Breakfast
9:00 am	Session 6: Thoracic Ganglion
10:30 am	Break
11:00 am	Session 6 continued
12:00 pm	General Discussion
12:30 pm	Future Meeting Discussion
1:00 pm	Lunch (Boxed lunch & shuttles to Dulles available)
1:15 pm	First shuttle to Dulles
2:00 pm	Second shuttle to Dulles
2:45 pm	Last shuttle to Dulles

NOTE:

All meals are in the **Dining Room**
All talks are in the **Auditorium**
Posters are located in the **Gallery** and the
Synapse Room

Full Schedule

Sunday May 11th

- 3:00 pm Check-in
- 6:00 pm Reception
- 7:00 pm Dinner
- 8:00 pm Welcome
Julie Simpson
- 8:15 pm Keynote Presentation

Nick J. Strausfeld, University of Arizona
*Mid-Line neuropils: Homologies and functional convergence across
Arthropods*

Monday May 12th

- 8:00 am Breakfast
- 9:00 am Session 1: Comparative Anatomy/ Evolution of the Central Complex**
Chair: Nick Strausfeld
- 9:00 am **Rudi Loesel**, Institut of Biology II
Evolutionary origin of the central complex
- 9:30 am **Clifton Ragsdale**, University of Chicago
Sensory maps in octopus brain
- 10:00 am Break and Group Photo
- 10:30 am **Michael Kunst**, Institute for Zoology
Neural circuits in the central complex mediating sound production in grasshoppers
- 10:45 am **Makoto Mizunami**, Tohoku University
In which brain areas are sensory signals converted into motor commands for behavioral responses?
- 11:00 am General Discussion
- 11:30 pm Tour (optional)
- 12:00 pm Lunch
- 1:30 pm Session 2: Development and Anatomy**
Chair: Kei Ito
- 1:30 pm **Kei Ito**, The University of Tokyo
Organization of the Drosophila central complex
- 2:00 pm **George S. Boyan**, Biozentrum der Ludwig-Maximilians-Universität
Building the embryonic central complex of the grasshopper
- 2:15 pm **Heinrich Reichert**, University of Basel
Central complex development: Amplification of neural proliferation by intermediate progenitor cells
- 2:30 pm **Takeshi Awaskai**, University of Massachusetts Medical School
Development of the central complex in Drosophila
- 2:45 pm Break

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- 3:15 pm **Volker Hartenstein**, University of California, Los Angeles
Larval development and metamorphosis of the central complex
- 3:30 pm **Douglas Armstrong**, University of Edinburgh
Mapping the structure and development of the Drosophila central complex
- 3:45 pm **Alberto Ferrús**, Instituto Cajal (CSIC)
Developmental, ultrastructural and functional analyses of the Drosophila ellipsoidal body
- 4:00 pm **Markus Noll**, University of Zurich
Poxn brain functions regulating Drosophila courtship behavior
- 4:15 pm General Discussion
- 5:00 pm Report from the Nomenclature Committee
- 6:00 pm Reception
- 7:00 pm Dinner
- 8:00 pm** **Session 3: Imaging, Recording, and Manipulation Neurons**
Chair: Julie Simpson
- 8:00 pm **Vivek Jayaraman**, Janelia Farm Research Campus/HHMI
A physiological investigation of the Drosophila central complex
- 8:15 pm **Jean-Rene Martin**, CNRS, UPR
Long term in-vivo visualisation of both neuronal or glial cells activity of the whole brain of Drosophila, by bioluminescence
- 8:30 pm **Michael N. Nitabach**, Yale School of Medicine
In vivo analysis of physiological roles of ion channels and neuropeptides in circadian control of locomotion
- 8:45 pm **Fumika Hamada**, Brandeis University
An internal sensor for ambient warming in Drosophila
- 9:00 pm **Julie H. Simpson**, Janelia Farm Research Campus/HHMI
Genetic manipulation of neural activity to perturb motor behavior
- 9:15 pm Poster Reception

Tuesday May 13th

8:00 am Breakfast

9:00 am Session 4: Vision and the Central Complex

Chair: Aike Guo

9:00 am **Uwe Homberg**, Universitaet Marburg
The central complex in the brain of the desert locust: An internal celestial compass

9:30 am **Michael Reiser**, Janelia Farm Research Campus/HHMI
*The role of visual feedback in regulating straight flight by *Drosophila**

10:00 am **Li Liu**, Chinese Academy of Sciences
*Visual pattern memory requires the fan-shaped body in *Drosophila**

10:30 am **Martin Heisenberg**, University of Wuerzburg
*Towards a circuit model of retinal position invariance for visual pattern recognition in *Drosophila**

11:00 am General Discussion

12:00 pm Lunch

1:30 pm Session 5: Locomotion

Chair: Roland Strauss

1:30 pm **Ansgar Büschges**, Zoological Institute
Neural control of stick insect walking - from joint control to adaptive locomotor behavior

2:00 pm **Roy Ritzmann**, Case Western Reserve University
Dealing with barriers: Behavioral choice, local changes and multi-sensory responses in the central complex

2:30 pm **Thomas Collett**, University of Sussex
Route navigation in ants when landmarks are missing

2:50 pm **Frederic Libersat**, Ben-Gurion University of the Negev
Parasitoid wasp injects venom in the brain of its insect prey to manipulate its motivation to move

3:10 pm Break

Functional Anatomy of the Arthropod Central Complex & Motor System

- 3:40 pm **David J. Anderson**, California Institute of Technology
*Negative regulation of locomotor hyperactivity by dopaminergic input to the central complex in *Drosophila melanogaster**
- 4:00 pm **Krishna Bhat**, UT Medical Branch at Galveston
*Mutational analysis of the synaptic connections using motor system in *Drosophila**
- 4:20 pm **Barbara Webb**, University of Edinburgh
Control of directional walking in crickets and robots
- 4:40 pm **Ryohei Kanzaki**, The University of Tokyo
*Insect-machine hybrid system for understanding and evaluating the motor control by sex pheromone in *Bombyx mori**
- 5:00 pm General Discussion
- 6:00 pm Dinner
- 8:00 pm Keynote Presentation
- Roland H. Strauss**, Johannes Gutenberg-Universitaet Mainz
Plasticity in goal-oriented walking
- 9:00 pm Poster Reception

Wednesday May 14th

- 8:00 am Breakfast
- 9:00 am Session 6: Thoracic Ganglion**
Chair: David Shepherd
- 9:00 am **David Shepherd**, University of Southampton
The development and functional organization of the Drosophila thoracic nervous system
- 9:30 am **James W. Truman**, Janelia Farm Research Campus/HHMI
Hemilineages as units of nervous system development, function and evolution
- 10:00 am **Joyce J. Fernandes**, Miami University
Development of the adult motor system during metamorphosis
- 10:15 am **Darren W. Williams**, King's College London
The development and organization of the leg motor system of Drosophila
- 10:30 am Break
- 11:00am **Poster Recognition**
- 11:00 am **Tim Lebestky**, California Institute of Technology
The role of dopamine receptor in facilitating mechanical startle and arousal
- 11:15 am **Cahir O'Kane**, University of Cambridge
Exploring differences between terminals of the same neuron
- 11:30 am **Ralf Heinrich**
Control of Grasshopper sound production: Neurons, chemical messengers, and the flow of information in the central complex
- 12:00 pm General Discussion
- 12:30 pm Future Meeting Discussion
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