

Sunday, September 21st

- 3:00 pm Check-In
- 6:00 pm Reception (*Lobby*)
- 7:00 pm Dinner
- 8:10 pm Welcome - Martin Giurfa, Dorothea Eisenhardt & Troy Zars**
- 8:15 pm Keynote Lecture**
Ron L. Davis, Scripps Research Institute, Florida
The logic of forgetting
- 9:15 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, September 22nd

Talks are 20 minutes,
plus 5 minutes for Q&A

- 7:15 am Breakfast (*service ends at 8:45am*)
- 9:00 am Session 1: Molecular systems underlying learning and memory I**
Chair: Troy Zars
- 9:00 am **Jerry CP Yin**, University of Wisconsin-Madison
Memory-dependent molecular and cellular changes in dCREB2
- 9:25 am **Dorothea Eisenhardt**, Freie Universität Berlin
*Dynamic levels of phosphorylated *Apis mellifera* CREB in inner compact cells of the honeybee mushroom bodies and their role in a bee's stimulus responsiveness*
- 9:50 am **Uli Müller**, Saarland University
Posttranslational histone modifications in Kenyon cells as integrative modulators of memory formation
- 10:15 am Break
- 10:45 am Session 2: Molecular systems underlying learning and memory II**
Chair: Dorothea Eisenhardt
- 10:45 am **Ann-Shyn Chiang**, National Tsing Hua University
*Gene activations and synaptic connections of a single brain neuron necessary for *Drosophila* long-term memory*
- 11:10 am **Efthimios (Makis) C. Skoulakis**, Alexander Fleming Biomedical Sciences Research Center
Extra- and intra mushroom body alk signaling through Nf1 in negatively reinforced olfactory associative learning and long term memory
- 11:35 am **Martin Giurfa**, University of Toulouse - CNRS
Aversive learning is associated with an increase in the expression of dopamine-receptor genes in specific cell populations of the honey bee brain
- 12:00 pm Lunch (*service ends at 1pm*)
- 1:00 pm Tour (*optional – meet at reception*)

2:00 pm **Session 3: Reinforcement systems**
Chair: Ron Davis

2:00 pm **Hiromu Tanimoto**, Tohoku University
Distinct dopamine neurons mediate reward signals for short- and long-term memories

2:25 pm **Minoru Saitoe**, Tokyo Metropolitan Institute of Medical Science
Dopamine release is gated by coincident stimulation of postsynaptic mushroom body neurons to establish plasticity

2:50 pm **Troy Zars**, University of Missouri
Separation of direct reinforcing properties from enhancing effects in the serotonergic system for place learning

3:15 pm **Geraldine Wright**, Newcastle University
How does the nutritional value of food influence olfactory reward learning in the honeybee?

3:40 pm Break

4:10 pm Group Discussion

4:45 pm **Poster Blitz (5 min / 3 slides each)**
Chair: Randolph Menzel

Claire Eschbach, Janelia Farm Research Campus/HHMI

Junjiro Horiuchi, Tokyo Metropolitan Institute of Medical Science

Toshiharu Ichinose, Tohoku University

Qingqing Liu, Institute of Biophysics, Chinese Academy of Sciences

Adriana Schatton, Freie Universität Berlin

Irina Sinakevitch, Arizona State University

Simon G. Sprecher, University of Fribourg

Markus Thamm, Universität Potsdam

Hanna M.L. Zwaka, Freie Universität Berlin

5:45 pm Poster Reception

7:15 pm Dinner

8:30 pm Refreshments available at Bob's Pub

Tuesday, September 23rd

- 7:00 am Breakfast (*service ends at 8:15am*)
- 8:30 am Session 4: Networks underlying learning and memory I**
Chair: Makis Skoulakis
- 8:30 am **Scott Waddell**, University of Oxford
Plasticity of a defined mushroom body-output synapse underlies learned odour approach behaviour in Drosophila
- 8:55 am **Seth Tomchik**, Scripps Florida
Spatiotemporal patterns of calcium response plasticity in the mushroom body
- 9:20 am **Aike Guo**, Chinese Academy of Sciences
The GABA-DA-MB network provides a gain-gating mechanism for reversal learning and decision making in Drosophila
- 9:45 am **Leslie C. Griffith**, Brandeis University
Functional connectivity within the Drosophila mushroom body neuropil
- 10:10 am Break
- 10:40 am Session 5: Networks underlying learning and memory II**
Chair: Alison Mercer
- 10:40 am **Andreas S. Thum**, University of Konstanz
The mushroom body of Drosophila larva
- 11:05 am **Bertram Gerber**, Leibniz Institute for Neurobiology
Mechanisms of maggot memory
- 11:30 am **Brian H. Smith**, Arizona State University
Plasticity in the antennal lobe circuitry: Learning modifies odor mixture processing to improve detection of relevant components
- 11:55 am **Randolf Menzel**, Freie Universität Berlin
Exploratory learning in bees: Behavior and the search for neural correlates
- 12:20 pm Lunch (*service ends at 1pm*)

- 2:00 pm** **Session 6: Cognition**
Chair: Leslie Griffith
- 2:00 pm **Jean-Marc Devaud**, University of Toulouse - CNRS
Solving ambiguities during learning: Possible neural substrates and impact of stress
- 2:25 pm **Andrew B. Barron**, Macquarie University
Honey bees selectively avoid difficult choices
- 2:50 pm **Lars Chittka**, Queen Mary University of London
The visual system of bees
- 3:15 pm Break
- 3:45 pm** **Session 7: Short talks selected from abstracts (12 min + 3 min for Q&A)**
Chair: Brian Smith
- 3:45 pm **Aurore Avarguès-Weber**, Centre de Recherches sur la Cognition Animale
Unsupervised relational learning in honeybees
- 4:00 pm **Katja Merschbäcker**, University of Saarland - Saarbruecken
mRNA profiling after olfactory conditioning: Regulation by training strength
- 4:15 pm **Takato Honda**, University of Tsukuba
*Induction of associative olfactory memory by targeted activation of single olfactory neurons in *Drosophila* larvae*
- 4:30 pm **Yoshinori Aso**, Janelia Farm Research Campus/HHMI
Mushroom body output neurons represent opposing valences of odors
- 4:45 pm Group Discussion
- 5:30 pm Poster Reception
- 7:00 pm Dinner
- 8:15 pm Refreshments available at Bob's Pub

Wednesday, September 24th

- 7:30 am Breakfast (*service ends at 8:45am*)
- 9:00 am Session 8: Behavioral quantification, learning and sleep**
Chair: Yi Zhong
- 9:00 am **Paul Szyszka**, University of Konstanz
Individual learning performance during associative odor-reward conditioning in honey bees
- 9:25 am **Jean-Christophe Sandoz**, Centre National de la Recherche Scientifique (CNRS)
Plasticity of antennal movements after appetitive and aversive olfactory learning in honeybees
- 9:50 am **Paul Shaw**, Washington University
Enhanced sleep reverses cognitive impairment in classic memory-mutants
- 10:15 am Break
- 10:45 am Session 9: Learning in a social and ecological context**
Chair: Martin Giurfa
- 10:45 am **Alison R. Mercer**, University of Otago
How does queen pheromone modulate dopamine signaling in honey bees and is this adaptive?
- 11:10 am **Frederic Mery**, Centre National de la Recherche Scientifique (CNRS)
Information exchange within Drosophila groups
- 11:35 am **Walter M. Farina**, University of Buenos Aires
Honeybee cognitive ecology in agricultural settings
- 12:00 pm Concluding Discussion and Final Remarks
- 12:30 pm Lunch and Departure
- 1:00 pm First Shuttle to Dulles
2:00 pm Second Shuttle to Dulles
3:00 pm Last Shuttle to Dulles