

**HOWARD HUGHES MEDICAL INSTITUTE  
NEUROBIOLOGY: FROM CELLS TO SYSTEMS**

**DECEMBER 6-9, 2009**

**JANELIA FARM RESEARCH CAMPUS  
19700 Helix Drive, Ashburn, Virginia  
Phone: (571) 209-4000**

**AGENDA**

**Sunday, December 6, 2009**

- P.M. 2:00 Desk opens at Reception for check-in and registration  
6:30 Social in the Lobby  
7:00 Dinner in the Dining Room  
8:30 Pub open until 10:00 P.M.

**Monday, December 7, 2009**

- A.M. 7:30 Breakfast buffet in the Dining Room

**Morning Scientific Session I: Dr. Rebecca Mongeon, Presiding**

- 8:30 Dr. Cornelia I. Bargmann – Genetic and Environmental Factors Act on a Common Neural Circuit to Regulate Behavior  
8:55 Dr. L. Rene Garcia – Sensory-Motor Mechanisms that Coordinate Food Availability with Sexual Behavior in *C. elegans*  
9:20 Dr. Erik M. Jorgensen – Acidification is a Checkpoint for Synaptic Vesicle Fusion  
9:45 Dr. Kang Shen – Molecular Mechanism of Axonal Transport and Synapse Formation  
10:10 Break in the Lobby

**Morning Scientific Session II: Dr. Bryan Krock, Presiding**

- 10:45 CANCELLED  
11:10 Dr. Teresa A. Nicolson – Synapse Formation in Sensory Hair Cells

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\* All talks are 20 minutes followed by 5 minutes discussion

**Monday, December 7, 2009**, continued

A.M. 11:35 Dr. A. James Hudspeth – Specification of Synaptic Targets in the Posterior Lateral Line of the Larval Zebrafish

P.M. 12:00 Dr. J. Eric Gouaux – Architecture and Mechanism of Neurotransmitter-Gated Ion Channels

12:25 Lunch in the Dining Room and break

**CIA Reports: Dr. Philip S. Perlman, Presiding**

3:00 Dr. Catherine Dulac – Sex Battles in the Brain

3:35 Dr. Simon W.M. John – Developing Tools to Improve Understanding and Treatment of IOP Elevation and Glaucoma

4:10 Break in the Lobby

**Afternoon Scientific Session: Dr. Gulsen Surmeli, Presiding**

4:45 Dr. Richard D. Palmiter – Dopamine Signaling and Learning

5:10 Dr. Kerry Ressler – Learning to be Afraid: Synaptic Plasticity, Fear, and its Inhibition

5:35 Dr. Scott M. Sternson – Rapid and Reversible Manipulation of Neural Circuits Controlling Hunger

6:00 Dr. Alla Y. Karpova – Optimizing Behavior in Variable and Competitive Environments

6:25 Social in the Lobby

7:00 Dinner in the Dining Room

8:00 Town Meeting with Dr. Robert Tjian, Dr. Jack E. Dixon, and Dr. Gerald M. Rubin – Auditorium

9:00 Pub open until 10:00 P.M.

**Tuesday, December 8, 2009**

A.M. 7:30 Breakfast buffet in the Dining Room

**Morning Scientific Session I: Dr. Victor Anggono, Presiding**

**Tuesday, December 8, 2009**, continued

- A.M. 8:30 Dr. Alex L. Kolodkin – Molecular Mechanisms Underlying the Establishment of Neuronal Connectivity
- 8:55 Dr. Samuel L. Pfaff – Genetic Screen in Mice to Identify Motor Axon Guidance Molecules
- 9:20 Dr. Thomas M. Jessell – Cholinergic Modulation of Mammalian Motor Behavior
- 9:45 Dr. Chris Q. Doe – Developmental Origin of Neural Circuits in *Drosophila*
- 10:10 Break in the Lobby

**Morning Scientific Session II: Dr. Stephanie Albin, Presiding**

- 10:45 Dr. Carla J. Shatz – Releasing the Brake on Ocular Dominance Plasticity
- 11:10 Dr. Michael M. Rosbash – Circadian Neuron-Specific Gene Expression in *Drosophila*
- 11:35 Dr. Gerald M. Rubin – A Framework for *Drosophila* Neurogenetics and Neuroanatomy
- P.M. 12:00 Dr. James W. Truman – A Lineage-Based Approach for Studying the Development of Neural Circuits in *Drosophila*
- 12:25 Lunch in the Dining Room and break
- 1:30 Tour of the Janelia Farm Landscape Building (meet at the Main Reception Desk)
- 2:30 Poster Session (see attached addendum) – Synapse Room. Refreshments available.

**Afternoon Scientific Session: Dr. John Reppas, Presiding**

- 3:30 Dr. David J. Anderson – Genetic Dissection of Emotion Circuits in the Brain
- 3:55 Dr. Elizabeth C. Engle – Human Mendelian Disorders of Axon Guidance
- 4:20 Dr. Richard Axel – Representations of Odor in the Piriform Cortex
- 4:45 Break in the Lobby
- 5:10 Dr. Linda C. Hsieh-Wilson – New Roles for Glycosylation in the Nervous System

**Tuesday, December 8, 2009**, continued

- P.M. 5:35 Dr. Susan L. Ackerman – Spliceosomal RNA Dysfunction and Neurodegeneration
- 6:00 Dr. Constance L. Cepko – New Strategies to Promote Photoreceptor Survival
- 6:25 Social in the Lobby
- 7:00 Dinner in the Dining Room
- 8:00 Dr. Michael Gazzaniga – Neuroscience and the Law
- 9:00 Pub open until 10:00 P.M

**Wednesday, December 9, 2009**

- A.M. 7:30 Breakfast buffet in the Dining Room

**Morning Scientific Session: Dr. Jason Coleman, Presiding**

- 8:30 Dr. Eric R. Kandel – The Ubiquitin Ligase Neuralized Activates the Prion Like Protein CPEB-3 and Enhances Long Term Memory in the Mouse
- 8:55 Dr. Sascha du Lac – Stability and Plasticity in the Sense of Balance
- 9:20 Dr. Erich D. Jarvis – Of Mice, Birds, and Men: The Mouse Ultrasonic Song System has Features in Common with Vocal Learners
- 9:45 Dr. Anthony Leonardo – Dynamics of Prey Capture in the Dragonfly
- 10:30 ADJOURN  
Checkout – Vans leave for airports  
Refreshments and Box lunches will be available

**Addendum - Poster Presentations**

- Dr. Victor Anggono (Huganir Lab) – PACSIN1, A Novel PICK1 Interacting Protein and Regulator of AMPAR Trafficking
- Dr. Lisa Beutler (Palmiter Lab) – NMDA Receptors on D1R-Expressing Neurons Are Required for Amphetamine Sensitization
- Dr. Jian Cao (Scott Lab) – Serotonergic Neurons Mediate Insulin Secretion and Body Growth
- Dr. William J. Chappell – Miniaturization Techniques for Implantable Wireless Sensors
- Dr. Chun-Chun Chen (Jarvis Lab) – Avian Brain Chimeras between Vocal-Learning and Non-Vocal-Learning Species
- Dr. Pohhui Chia (Shen Lab) – A Role for NAB-1/Neurabin in Presynaptic Assembly
- Dr. Anne Churchland (Shadlen Lab) – The Weighting Game: Microstimulation in Extrastriate Cortex Reveals How Different Neurons Influence Impending Decisions
- Dr. Jason Coleman (Bear Lab) – Dynamic Remodeling of Thalamocortical Axon Structure in Primary Visual Cortex Following Brief Monocular Deprivation
- Dr. Miguel Concha – Morphogenesis of a Brain Nucleus Resembles Peripheral Sensory Organ Formation in Zebrafish
- Dr. Eizaburo Doi (Simoncelli Lab) – Testing the Efficiency of Visual Information Coding in a Complete Population of Retinal Ganglion Cells
- Dr. A. Belén Elgoyhen – Targeting  $\alpha 9\alpha 10$  Nicotinic Acetylcholine Receptors to Prevent Noise-Induced Hearing Loss
- Dr. Jeffrey Erlich (Brody Lab) – Short-Term Spatial Memory in the Rat Frontal Orienting Field
- Mr. Mike Goard (Dan Lab) – Basal Forebrain Activation Enhances Cortical Coding of Visual Scenes
- Dr. Christopher Gregg (Dulac Lab) – A Maternal-Paternal Gene Expression Axis Uncovered in the Embryonic and Adult Mouse Brain
- Dr. Elissa Hallem (Sternberg Lab) – Odor Coding and Host Seeking in Parasitic Nematodes
- Dr. Pedro P. Irazoqui – System Integration of Micrometer-Scale Intra-Ocular Implants
- Dr. Yichang Jia (Ackerman Lab) – A Deletion in One of the U2 Small Nuclear RNA Genes Causes Neurodegeneration

Dr. Jaewon Ko (Südhof Lab) – Identification of LRRTM2 as a Novel Neurexin-Ligand

Ms. Fenna Krienen (Buckner Lab) – Segregated Fronto-Cerebellar Circuits Revealed by Intrinsic Functional Connectivity

Dr. Brigitte LeBoeuf (Garcia Lab) – CaMKII and BK Channels Attenuate Seizures during Caloric Restriction

Dr. Qiang Liu (Jorgensen Lab) – Synaptic Depression and Recovery at the *C. elegans* Neuromuscular Junction

Dr. Todd MacFarlan (Pfaff Lab) – LSD1 Establishes a Repressive Histone Code at Rapidly Evolving X-Linked Genes in Early Development

Ms. Lauren McElvain (du Lac Lab) – Bidirectional, Non-Hebbian Plasticity of a Sensory Synapse

Dr. Patrick McGrath (Bargmann Lab) – Evolution of *C. elegans* Behavior under Different Laboratory Conditions

Dr. Leeanne McGurk (Bonini Lab) – Identifying Genes that Lead to Ataxia in Fruit Flies

Dr. Conor McMeniman (Vosshall Lab) – Genetic Dissection of Carbon Dioxide and Thermo-Reception in the Yellow Fever Mosquito *Aedes aegypti*

Dr. Jerome Menet (Rosbash Lab) – Dynamic PER Repression Mechanisms in the *Drosophila* Circadian Clock: From On-To-Off-DNA

Dr. Marta Morey (Zipursky Lab) – Dueling of Targeting Programs in R7 and R8 *Drosophila* Photoreceptors

Dr. Nicolas Paquin (Horvitz Lab) – C44B9.1, A Novel Conserved Regulator of *C. elegans* Behavior, Acts Through G Protein Signaling and Likely Regulates Synaptic Vesicle Release

Dr. Elias Pavlopoulos (Kandel Lab) – Non-Proteolytic Ubiquitination by Neuralized-1-Activates CPEB3: A Novel Role of the Ubiquitin System in Synaptic Plasticity and Memory Storage.

Dr. Claudio Punzo (Cepko Lab) – Gluconoogenesis in Cones: A Strategy to Prolong Vision in Retinitis Pigmentosa

Dr. Marcelo Rubinstein – Impaired Body Growth and MUPs-Mediated Territorial Behaviors in Mice Lacking Neural D2Rs

Dr. Alejandro Schinder – Functional Recruitment of Developing Neurons in the Adult Hippocampal Network

Dr. Alexander Sobolevsky (Gouaux Lab) – Crystal Structure of an Ionotropic Glutamate Receptor

Ms. Gulsen Surmeli (Jessell Lab) – Genetic Determinants of Motor Neuron Input – Output Specificity

Dr. Gábor Tamas – Regulation of Cortical Microcircuits by Unitary GABAergic Volume

Dr. Hiroshi Tsuda (Bellen Lab) – Dysfunction of VAP Contributes to the Pathology of Familial and Sporadic ALS

Mr. Liming Wang (Anderson Lab) – Identification of an Aggression-Promoting Pheromone and its Receptor Neurons in *Drosophila*

Dr. Zhiping Wang (Jin Lab) – A Conserved SWIM Domain Protein Regulates Axon Guidance in *C. elegans*

Dr. Jin Yang (Lisberger Lab) – Responses of MT Neurons to Dot Textures with Different Amounts of Directional Noise

Dr. Xianjun Zhu (John Lab) – The Role of a Murine Phospholipid Translocase in Neurodegeneration