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[Authors]. [Abstract Title]. Program No. XXX.XX. 2017 Neuroscience Meeting Planner. Washington, DC: Society for Neuroscience, 2017. Online.

Symposium

003. Neuronal Adaptation and Behavioral Performance in Perceptual and Economic Decisions

Theme H: Cognition

Location: Ballroom A

Time: 11/11/2017 1:30:00 PM - 11/11/2017 4:00:00 PM

The implications of neuronal adaptation are more complex than classically recognized. In sensory systems, ambiguous firing rates may result in a "coding catastrophe." In the representation of subjective values, uncorrected adaptation would induce arbitrary choice biases. These observations raise the question of whether adaptation is beneficial to the organism. The symposium will present recent work on perceptual and economic decisions showing that neuronal adaptation ensures optimal coding and thus increases behavioral performance.

Time: Sat. 1:30 PM - 4:00 PM

3. Chair

C. Padoa-Schioppa;
Department of Neuroscience, Washington University in St Louis, Saint Louis, MO.

Time: Sat. 1:30 PM - 1:35 PM

3.01. Introduction

Time: Sat. 1:35 PM - 2:10 PM

3.02. Sensory adaptation: Predicting the future from the past

A. A. Stocker;
Department of Psychology, University of Pennsylvania, Philadelphia, PA.

Time: Sat. 2:10 PM - 2:45 PM

3.03. Visual cortical adaptation optimizes eye movement precision

L. C. Osborne;
Department of Neurobiology, University of Chicago, Chicago, IL.

Time: Sat. 2:45 PM - 3:20 PM

3.04. Neuronal adaptation of prediction errors benefits learning

K. M. Diederen;
Department of Physiology, Development and Neuroscience, Univ Cambridge, Cambridge, UNITED KINGDOM.

Time: Sat. 3:20 PM - 3:55 PM

3.05. Neuronal adaptation and optimal coding in economic decisions

C. Padoa-Schioppa;
Washington University in St Louis, Saint Louis, MO.

Time: Sat. 3:55 PM - 4:00 PM

3.06. Closing Remarks

Symposium

004. Central Network Dynamics Regulating Visceral And Humoral Functions

Theme F: Integrative Physiology and Behavior

Location: Ballroom B

Time: 11/11/2017 1:30:00 PM - 11/11/2017 4:00:00 PM

The brain regulates visceral and immune functions to maintain internal homeostasis, optimally respond to a dynamic external environment, and integrate these functions with ongoing behavior. Using urological, gastrointestinal, and immune systems as examples, this symposium will show how advances in circuit dissection and manipulation and neural recordings across networks linking viscera to cortical regions are revealing how the brain performs this complex integration.

Time: Sat. 1:30 PM - 4:00 PM

4. Chair

R. J. Valentino;
Division of Neuroscience and Behavior, National Institute of Drug Abuse, Rockville, MD.

Time: Sat. 1:30 PM - 4:00 PM

4. Co Chair

P. G. Guyenet;
Pharmacology, University of Virginia School of Medicine, Charlottesville, VA.

Time: Sat. 1:30 PM - 1:35 PM

4.01. Introduction

Time: Sat. 1:35 PM - 2:10 PM

4.02. Central circuits in contextual regulation of micturition

H. X. Hou;
Neurobiology, Harvard Medical School, Boston, MA.

Time: Sat. 2:10 PM - 2:45 PM

4.03. Network dynamics underlying the encoding of visceral sensorimotor information

R. J. Valentino;
Division of Neuroscience and Behavior, National Institute of Drug Abuse, Rockville, MD.

Time: Sat. 2:45 PM - 3:20 PM

4.04. The C1 neurons and stress-induced anti-inflammation

P. G. Guyenet;
Pharmacology, Univ Virginia Sch Med, Charlottesville, VA.

Time: Sat. 3:20 PM - 3:55 PM

4.05. Local inhibitory networks in the medullar regions that regulate gastric motility

M. A. Herman;
Bowles Center for Alcohol Studies, University of North Carolina Chapel Hill, Chapel Hill, NC.

Time: Sat. 3:55 PM - 4:00 PM

4.06. Closing Remarks

Minisymposium

005. Short-Circuiting Neurodevelopmental Disorders: Novel Insights and Treatment Strategies

Theme A: Development

Location: Ballroom C

Time: 11/11/2017 1:30:00 PM - 11/11/2017 4:00:00 PM

Neurodevelopmental disorders are often associated with aberrant sensory processing and epilepsy, yet the way such deficits contribute to the etiology of the disorders is unknown. This minisymposium will demonstrate how studies of selective central and peripheral neuronal circuits at the micro and macro levels allow a new understanding beyond single genes that can be exploited to design interventions and to establish biomarkers that can be translated from animal models to humans.

Time: Sat. 1:30 PM - 4:00 PM

5. Chair

M. Fagiolini;
F.M. Kirby Neurobiology Center, Children's Hospital Boston Harvard, Boston, MA.

Time: Sat. 1:30 PM - 4:00 PM

5. Co Chair

T. Pizzorusso;
Institute of Neuroscience, Consiglio Nazionale delle Ricerche, Pisa, ITALY.

Time: Sat. 1:30 PM - 1:35 PM

5.01. Introduction

Time: Sat. 1:35 PM - 1:55 PM

5.02. Visual circuit dysfunction in Rett syndrome from mouse to human

M. Fagiolini;
F.M. Kirby Neurobiology Center, Children's Hospital Boston Harvard, Boston, MA.

Time: Sat. 1:55 PM - 2:15 PM

5.03. Sensory cortex alterations in mouse models of CDKL5 disorder

T. Pizzorusso;
Instituto di Neuroscience, Consiglio Nazionale delle Ricerche, Pisa, ITALY.

Time: Sat. 2:15 PM - 2:35 PM

5.04. Bidirectional modulation of epilepsy networks via real-time switching of firing mode

J. Paz;
Neurology, Gladstone Institute of Neurological Disease, San Francisco, CA.

Time: Sat. 2:35 PM - 2:55 PM

5.05. Microcircuit and macrocircuit level defects in Angelman syndrome

B. D. Philpot;
Cell Biology and Physiology, Univ North Carolina, Chapel Hill, NC.

Time: Sat. 2:55 PM - 3:15 PM

5.06. Understanding somatosensory deficits in autism spectrum disorders

L. Orefice;
Neurobiology, Harvard Medical School, Boston, MA.

Time: Sat. 3:15 PM - 3:35 PM

5.07. Cerebellar mediated ASD behaviors and treatment

P. Tsai;
Department of Neurology and Neurotherapeutics, UT Southwestern, Dallas, TX.

Time: Sat. 3:35 PM - 4:00 PM

5.08. Closing Remarks

006. Emerging Roles of Somatostatin Inhibitory Neurons in Sensory Cortex Processing and Plasticity

Theme D: Sensory Systems

Location: 145B

Time: 11/11/2017 1:30:00 PM - 11/11/2017 4:00:00 PM

Somatostatin-expressing (SOM) neurons are one of the principal classes of GABAergic inhibitory neurons. This minisymposium brings together researchers applying advanced *in vivo* techniques to monitoring and manipulating selective neural circuitries in the sensory cortex to discuss novel findings on how behavioral states and sensory inputs uniquely modulate the activity and rhythm of SOM neurons, and how SOM neurons in turn determine sensory processing and plasticity through specific molecular mechanisms.

Time: Sat. 1:30 PM - 4:00 PM

6. Chair

H. Morishita;
Psychiatry, Neuroscience, Ophthalmology, Icahn School of Medicine at Mount Sinai, New York, NY.

Time: Sat. 1:30 PM - 4:00 PM

6. Co Chair

H. Adesnik;
University of California, Berkeley, Berkeley, CA.

Time: Sat. 1:30 PM - 1:35 PM

6.01. Introduction

Time: Sat. 1:35 PM - 1:55 PM

6.02. Cortical gamma band synchronization through somatostatin interneurons

J. Veit;
Dept. of Molecular and Cell Biololgy, UC Berkeley, Berkeley, CA.

Time: Sat. 1:55 PM - 2:15 PM

6.03. Cortical circuits of long-range GABAergic neurons

A. Apicella, Jr.;
UTSA Neurosciences Institute, Department of Biology, University of Texas at San Antonio, San Antonio, TX.

Time: Sat. 2:15 PM - 2:35 PM

6.04. Behavioral-state modulation of somatostatin neurons activity in mouse visual cortex

N. Rochefort;
Centre for Integrative Physiology, School of Biomedical Sciences, University of Edinburgh, Edinburgh, UNITED KINGDOM.

Time: Sat. 2:35 PM - 2:55 PM

6.05. Network-level control of cortical sensory tuning mediated by somatostatin interneurons

H. K. Kato;
Neuroscience Center and Department of Psychiatry, University of North Carolina, Chapel Hill, NC.

Time: Sat. 2:55 PM - 3:15 PM

6.06. Activation of NMDARs selectively regulates the strength of inhibition mediated by somatostatin interneurons

M. J. Higley;
Neurobiology, Yale School of Medicine, New Haven, CT.

Time: Sat. 3:15 PM - 3:35 PM

6.07. Nicotinic activation of somatostatin interneurons restores cortical plasticity

H. Morishita;
Psychiatry, Neuroscience, Ophthalmology, Icahn School of Medicine at Mount Sinai, New York, NY.

Time: Sat. 3:35 PM - 4:00 PM

6.08. Closing Remarks

007. Nonhuman Primate Optogenetics: Recent Advances and Future Directions

Theme I: Techniques

Location: 146A

Time: 11/11/2017 1:30:00 PM - 11/11/2017 4:00:00 PM

Nonhuman primates (NHP) are the best animal model for studying human cognition and mental health disorders, yet because of their size, complexity, and genetic intractability, the application

of optogenetics to NHP studies has been slow. Nevertheless, optogenetic methods are critical to understand the circuit and systems basis for cognition and mental health disorders. This minisymposium will highlight scientific advances using optogenetics in NHPs, demonstrate technical achievements, and identify the challenges ahead.

Time: Sat. 1:30 PM - 4:00 PM

7. Chair

A. Galvan;
Yerkes National Primate Research Center and Department of Neurology, School of M, Emory University, Atlanta, GA.

Time: Sat. 1:30 PM - 4:00 PM

7. Co Chair

W. R. Stauffer;
Neurobiology, University of Pittsburgh, Pittsburgh, PA.

Time: Sat. 1:30 PM - 1:35 PM

7.01. Introduction

Time: Sat. 1:35 PM - 1:55 PM

7.02. Towards cell-specific optogenetics in primate thalamus: Insights on the koniocellular LGN projection to V1

M. C. Schmid;
Institute of Neuroscience, Newcastle University, Newcastle, UNITED KINGDOM.

Time: Sat. 1:55 PM - 2:15 PM

7.03. FEF inactivation with improved optogenetic methods

L. Acker;
School of Medicine, Duke University, Durham, NC.

Time: Sat. 2:15 PM - 2:35 PM

7.04. Dopamine neuron-specific optogenetic stimulation in rhesus macaques

W. R. Stauffer;
Neurobiology, University of Pittsburgh, Pittsburgh, PA.

Time: Sat. 2:35 PM - 2:55 PM

7.05. Towards an all optical interrogation of deep neural circuits with ultra-thin optical fibers

S. Ohayon;
DiCarlo's lab, Massachusetts Institute of Technology (MIT), Cambridge, MA.

Time: Sat. 2:55 PM - 3:15 PM

7.06. Pathway-selective optogenetics for elucidating neural network function in primates

K. Inoue;
Primate Research Institute, Kyoto University, Inuyama, JAPAN.

Time: Sat. 3:15 PM - 3:35 PM

7.07. Selective optogenetic control of Purkinje cells in monkey cerebellum

Y. El-Shamayleh;
Department of Physiology & Biophysics, University of Washington, Seattle, WA.

Time: Sat. 3:35 PM - 4:00 PM

7.08. Closing Remarks

Minisymposium

008. Adolescence and Reward: Making Sense of Neural and Behavioral Changes Amid the Chaos

Theme G: Motivation and Emotion

Location: 151B

Time: 11/11/2017 1:30:00 PM - 11/11/2017 4:00:00 PM

Adolescence is a time of significant change in the brain and behavior. Evidence suggests that many adolescent-typical changes in behavior are related to increased value placed on rewards and are driven by interactions between pubertal hormones, dopaminergic reward circuitry, and the prefrontal cortex. This symposium highlights recent developments in our understanding of neural and hormonal contributions to adolescent typical reward-associated behaviors and increased vulnerability to neurological disorders.

Time: Sat. 1:30 PM - 4:00 PM

8. Chair

D. M. Walker;
Neuroscience, Icahn School of Medicine At Mount Sinai, New York, NY.

Time: Sat. 1:30 PM - 4:00 PM

8. Co Chair

M. J. Paul;
Psychology, University at Buffalo, SUNY, Buffalo, NY.

Time: Sat. 1:30 PM - 1:35 PM

8.01. Introduction

Time: Sat. 1:35 PM - 1:55 PM

8.02. Sex, drugs, and reward circuitry: The role of the medial amygdala in sex differences in cocaine sensitivity and reward circuitry during adolescence

D. M. Walker;
Neuroscience, Icahn School of Medicine At Mount Sinai, New York, NY.

Time: Sat. 1:55 PM - 2:15 PM

8.03. Puberty-dependent and puberty-independent regulation of adolescent social, exploratory, and novelty seeking behaviors

M. J. Paul;
Psychology, University at Buffalo, SUNY, Buffalo, NY.

Time: Sat. 2:15 PM - 2:35 PM

8.04. Age and sex differences in motivation and the role of cortico-accumbens circuit maturation

J. M. Gulley;
Psychology, University of Illinois at Urbana-Champaign, Champaign, IL.

Time: Sat. 2:35 PM - 2:55 PM

8.05. The role of pubertal onset in maturation of the prefrontal cortex and cognition during adolescence

J. Willing;
Psychology, University of Illinois, Champaign, IL.

Time: Sat. 2:55 PM - 3:15 PM

8.06. Adolescent changes in social reward and corticolimbic circuitry in the hamster

M. R. Bell;
Biological Sciences, Depaul University, Chicago, IL.

Time: Sat. 3:15 PM - 3:35 PM

8.07. DCC receptors determine dopamine axon targeting in adolescence

C. Flores;
Dept of Psych, McGill University, Montreal,, QC, CANADA.

Time: Sat. 3:35 PM - 4:00 PM

8.08. Closing Remarks

Symposium

095. The Role of RNA Biology in Neurological Disease

Theme C: Neurodegenerative Disorders and Injury

Location: Ballroom A

Time: 11/12/2017 8:30:00 AM - 11/12/2017 11:00:00 AM

It has been increasingly recognized that RNA plays a pivotal role in the regulation of gene expression and neuronal function. This symposium will highlight advances in RNA biology and discuss the roles of RNA in neurological diseases, including repeat associated non-ATG translation, RNA metabolism, non-coding regulatory RNAs, and splicing factors. The symposium will provide new perspectives on how RNA biology guides strategies for therapeutic development in neurological diseases.

Time: Sun. 8:30 AM - 11:00 AM

95. Chair

W. Duan;
Psychiatry, Johns Hopkins University School of Medicine, Baltimore, MD.

Time: Sun. 8:30 AM - 8:35 AM

95.01. Introduction

Time: Sun. 8:35 AM - 9:10 AM

95.02. Repeat associated non-ATG (RAN) translation: New starts and directions in neurological disease

L. P. Ranum;
Molecular Genetics and Microbiology, University of Florida, Gainesville, FL.

Time: Sun. 9:10 AM - 9:45 AM

95.03. Disturbance of dynamic RNA-protein assemblies in neurological diseases

J. Taylor;
Cell and Molecular Biology, St. Jude Children's Reseach Hospital, Memphis, TN.

Time: Sun. 9:45 AM - 10:20 AM

95.04. Small regulatory RNAs in brain disorders

P. Jin;
Human Genetics, Emory University School of Medicine, Atlanta, GA.

Time: Sun. 10:20 AM - 10:55 AM

95.05. Splicing factors in neurodegenerative disease

R. Reed;
Cell Biology, Harvard Medical School, Boston, MA.

Time: Sun. 10:55 AM - 11:00 AM

95.06. Closing Remarks

Symposium

096. Developmental Origins of Neuronal Diversity in the Cerebral Cortex

Theme A: Development

Location: Ballroom B

Time: 11/12/2017 8:30:00 AM - 11/12/2017 11:00:00 AM

The function of the cerebral cortex relies on a large variety of cell types, yet the developmental origins of this diversity are largely unknown. The symposium will discuss the role of developmental mechanisms in the generation of cellular diversity in the cortices of mice and humans. The session will focus on current efforts to reveal the diversity of progenitor cells and the identity of neuron-specific transcriptional programs as they dynamically unfold during development.

Time: Sun. 8:30 AM - 11:00 AM

96. Chair

O. Marin;
MRC Centre for Neurodevelopmental Disorders and Centre for Developmental Neurobiology, King's College London, London, UNITED KINGDOM.

Time: Sun. 8:30 AM - 8:35 AM

96.01. Introduction

Time: Sun. 8:35 AM - 9:10 AM

96.02. Transcriptional regulation of MGE-derived cell fate: cortical interneurons

J. L. Rubenstein;
Nina Ireland Lab Dev Neurobiol, University of California San Francisco, San Francisco, CA.

Time: Sun. 9:10 AM - 9:45 AM

96.03. Molecular regulation of cortical interneuron diversity

O. Marin;
MRC Centre for Neurodevelopmental Disorders and Centre for Developmental Neurobiology, King's College London, London, UNITED KINGDOM.

Time: Sun. 9:45 AM - 10:20 AM

96.04. An integrative census of cell types during human cortical neurogenesis

A. R. Kriegstein;
Eli and Edythe Broad Center for Regeneration Medicine and Stem Cell Research, University of California San Francisco, San Francisco, CA.

Time: Sun. 10:20 AM - 10:55 AM

96.05. Cortical interneuron diversity from a wiring perspective

B. Rico;
MRC Centre for Neurodevelopmental Disorders, King’s College London, London, UNITED KINGDOM.

Time: Sun. 10:55 AM - 11:00 AM

96.06. Closing Remarks

Minisymposium

097. Big News From a Little Region: Hippocampal Area CA2

Theme B: Neural Excitability, Synapses, and Glia

Location: Ballroom C

Time: 11/12/2017 8:30:00 AM - 11/12/2017 11:00:00 AM

Known to be resistant to cell death, neurons in hippocampal area CA2 have only recently been appreciated as having distinct synaptic and firing properties and playing distinct roles in behavior such as social recognition and aggression. In this minisymposium, speakers will discuss how CA2 may be important in diseases such as schizophrenia and epilepsy as well as provide attendees with an overview of this small but exciting module of the hippocampus and its relation to many brain functions.

Time: Sun. 8:30 AM - 11:00 AM

97. Chair

S. M. Dudek;
Neurobiology Laboratory, National Institute of Environmental Health Sciences, NIH, Research Triangle Park, NC.

Time: Sun. 8:30 AM - 8:35 AM

97.01. Introduction

Time: Sun. 8:35 AM - 8:55 AM

97.02. New insights into hippocampal circuitry and function from studies of synaptic plasticity

S. M. Dudek;
Neurobiology Laboratory, National Institute of Environmental Health Sciences, NIH, Research Triangle Park, NC.

Time: Sun. 8:55 AM - 9:15 AM

97.03. CA2 inhibitory network and plasticity: Significance for social memory and psychiatric disease

R. A. Piskorowski;
Team Synaptic Plasticity and Neural Networks, Inserm U894, Universite Paris Descartes, Paris, FRANCE.

Time: Sun. 9:15 AM - 9:35 AM

97.04. How the vasopressin 1b receptor has guided investigations of the CA2 hippocampal area in males and females

S. Young;
National Institute of Mental Health, Bethesda, MD.

Time: Sun. 9:35 AM - 9:55 AM

97.05. Divergent CA2 circuits for social memory and aggression

S. A. Siegelbaum;
Dept of Neuroscience, Columbia Univ Coll P & S, New York, NY.

Time: Sun. 9:55 AM - 10:15 AM

97.06. Chronic loss of CA2 transmission leads to hyperexcitability in the CA3 network

T. J. McHugh;
Laboratory for Circuit and Behavioral Physiology, RIKEN Brain Science Institute, Wako-shi, JAPAN.

Time: Sun. 10:15 AM - 10:35 AM

97.07. Hypersynchronous events in the hippocampus: The hyperexcitable CA2

A. Berenyi;
Department of Physiology, University of Szeged, Szeged, HUNGARY.

Time: Sun. 10:35 AM - 11:00 AM

97.08. Closing Remarks

Minisymposium

098. Peripheral Neural Modulation of Inflammation, Immunity, and Host Defense

Theme F: Integrative Physiology and Behavior

Location: 145B

Time: 11/12/2017 8:30:00 AM - 11/12/2017 11:00:00 AM

The peripheral nervous system (PNS) and immune system actively communicate to regulate homeostasis and inflammation in health and disease. Nodose/jugular ganglia and DRG sensory neurons detect immune and bacterial mediators to signal danger, and release neuropeptides that regulate immunity. Vagal autonomic neurons potently modulate immune cell activation in sepsis, arthritis, colitis, and other inflammatory conditions. Thus, defining peripheral neuroimmune signaling can improve treatment of inflammatory diseases.

Time: Sun. 8:30 AM - 11:00 AM

98. Chair

I. M. Chiu;
Microbiology and Immunobiology, Harvard Medical School, Boston, MA.

Time: Sun. 8:30 AM - 11:00 AM

98. Co Chair

V. A. Pavlov;
The Feinstein Institute For Medical Research, Manhasset, NY.

Time: Sun. 8:30 AM - 8:35 AM

98.01. Introduction

Time: Sun. 8:35 AM - 8:55 AM

98.02. An essential role for cutaneous nerves in propagating psoriasis-like skin inflammation

N. Ward;
Department of Dermatology, Case Western Reserve University, Cleveland, OH.

Time: Sun. 8:55 AM - 9:15 AM

98.03. Transcriptional and functional plasticity of airway-innervating sensory neurons in pulmonary inflammation

S. E. Jordt;
Anesthesiology, Duke University, Durham, NC.

Time: Sun. 9:15 AM - 9:35 AM

98.04. Sensory mechanisms of the vagus nerve

S. D. Liberles;
Cell Biology, Harvard Medical School, Boston, MA.

Time: Sun. 9:35 AM - 9:55 AM

98.05. Reflex control of inflammation

S. S. Chavan;
Laboratory of Biomedical Sciences, Feinstein Institute For Medical Research, Manhasset, NY.

Time: Sun. 9:55 AM - 10:15 AM

98.06. The treatment of rheumatoid arthritis with vagus nerve stimulation

Y. Levine;
SetPoint Medical Corporation, SetPoint Medical Corporation, Valencia, CA.

Time: Sun. 10:15 AM - 10:35 AM

98.07. Choline acetyltransferase-expressing T cells relay neural signals

P. S. Olofsson;
Medicine, Solna (MedS), K2, Karolinska Institute, Stockholm, SWEDEN.

Time: Sun. 10:35 AM - 11:00 AM

98.08. Closing Remarks

Minisymposium

099. Computational Psychiatry: Multiscale Models of Mental Illnesses

Theme H: Cognition

Location: 146A

Time: 11/12/2017 8:30:00 AM - 11/12/2017 11:00:00 AM

This minisymposium will provide an in-depth introduction to the nascent and burgeoning field of computational psychiatry (CP). CP applies cutting-edge quantitative methods and theoretical models to investigate neural or cognitive phenomena relevant to psychiatric diseases. Talks will cover practical examples of theory- and data-driven computational models of cognitive deficits associated with schizophrenia, emotion regulation, anxiety, and drug addiction.

Time: Sun. 8:30 AM - 11:00 AM

99. Chair

M. Ferrante;
National Institute of Mental Health, Rockville, MD.

Time: Sun. 8:30 AM - 11:00 AM

99. Co Chair

X. Wang;
Physics, New York University, New York, NY.

Time: Sun. 8:30 AM - 8:35 AM

99.01. Introduction

Time: Sun. 8:35 AM - 8:55 AM

99.02. A Bayesian observer model of drug craving

X. Gu;
School of Behavioral and Brain Sciences, University of Texas At Dallas, Dallas, TX.

Time: Sun. 8:55 AM - 9:15 AM

99.03. Linking behavior, neuroimaging, and pharmacology via biophysically-based computational modeling

A. Anticevic;
Psychiatry, Yale University, New Haven.

Time: Sun. 9:15 AM - 9:35 AM

99.04. Theory driven approaches to computational psychiatry: Obsessive compulsive disorder

V. Voon;
Medical Research Council Senior Clinical Fellow, University of Cambridge, Cambridge, UNITED KINGDOM.

Time: Sun. 9:35 AM - 9:55 AM

99.05. The mathematics of regulating emotions

Q. Huys;
Translational Neuromodeling Unit, ETH Zürich and University of Zürich, Zürich, SWITZERLAND.

Time: Sun. 9:55 AM - 10:15 AM

99.06. Computational models of excitation-inhibition disruptions in large-scale brain networks with relevance to functional dysconnectivity in schizophrenia

J. Murray;
Psychiatry, Yale University, New Haven, CT.

Time: Sun. 10:15 AM - 10:35 AM

99.07. Working memory contributions to learning impairments in schizophrenia

A. Collins;
Psychology, University of California Berkeley, Berkeley, CA.

Time: Sun. 10:35 AM - 11:00 AM

99.08. Closing Remarks

Minisymposium

100. Individual or Group Patterns of Human Sensorimotor Control and Learning: When the Whole May Not Be Greater Than the Sum of Its Parts

Theme E: Motor Systems

Location: 151B

Time: 11/12/2017 8:30:00 AM - 11/12/2017 11:00:00 AM

Despite its being widely acknowledged that human sensory and motor function can vary between individuals, studies typically focus on average patterns of behavior in groups of healthy people. Individual patterns of sensorimotor function are thus poorly understood and have only recently begun to be unraveled. This minisymposium will highlight recent behavioral, neuroimaging, and

modeling work that is helping to explain individual patterns of sensory and motor function in healthy and patient groups.

Time: Sun. 8:30 AM - 11:00 AM

100. Chair

R. Flanagan;
Dept. of Psychology, Centre for Neuroscience Studies, Queen's University, Kingston, ON, CANADA.

Time: Sun. 8:30 AM - 11:00 AM

100. Co Chair

T. Cluff;
Faculty of Kinesiology, Hotchkiss Brain Institute, University of Calgary, Calgary, AB, CANADA.

Time: Sun. 8:30 AM - 8:35 AM

100.01. Introduction

Time: Sun. 8:35 AM - 8:55 AM

100.02. Tradeoffs in optimal control capture differences in human motor control and learning strategies

T. Cluff;
Faculty of Kinesiology, Hotchkiss Brain Institute, University of Calgary, Calgary, AB, CANADA.

Time: Sun. 8:55 AM - 9:15 AM

100.03. The relative contribution of explicit and implicit forms of learning differ between individuals

J. A. Taylor;
Psychology, Princeton University, Princeton, NJ.

Time: Sun. 9:15 AM - 9:35 AM

100.04. Quantifying inter-individual variability in stroke recovery using robotics

J. A. Semrau;
Clinical Neurosciences, University of Calgary, Calgary, AB, CANADA.

Time: Sun. 9:35 AM - 9:55 AM

100.05. Genetic, brain, and behavioural predictors of sensorimotor function

R. D. Seidler;
Department of Psychology, School of Kinesiology, University of Florida, Gainesville, FL.

Time: Sun. 9:55 AM - 10:15 AM

100.06. Brain networks for auditory-motor integration in the context of music training and expertise

V. Penhune;
Dept. of Psychology, Concordia University, Montreal, QC, CANADA.

Time: Sun. 10:15 AM - 10:35 AM

100.07. To overwrite or to recall?: Individual differences in visuomotor adaptation

N. Schweighofer;
University of Southern California, Los Angeles, CA.

Time: Sun. 10:35 AM - 11:00 AM

100.08. Closing Remarks

Symposium

178. Neuroimmune Interactions: A Status Change

Theme C: Neurodegenerative Disorders and Injury

Location: Ballroom A

Time: 11/12/2017 1:30:00 PM - 11/12/2017 4:00:00 PM

Identifying the mechanisms regulating the influence of the immune system on the nervous system is critical to understanding brain health, behavior, cognition, and disease processes. In this symposium, a panel of expert scientists will describe how peripheral immune elements activate unique signaling pathways regulating neuronal function and how unique neurointrinsic signals shape the activity of leukocytes entering the central and peripheral nervous systems during homeostasis and disease.

Time: Sun. 1:30 PM - 4:00 PM

178. Chair

J. I. Alvarez;
University of Pennsylvania, Philadelphia, PA.

Time: Sun. 1:30 PM - 4:00 PM

178. Co Chair

J. Kipnis;
Neuroscience, University of Virginia, Charlottesville, VA.

Time: Sun. 1:30 PM - 1:35 PM

178.01. Introduction

Time: Sun. 1:35 PM - 2:10 PM

178.02. Reciprocal neuroimmune interactions that amplify or suppress inflammation

C. J. Woolf;
Neurobiology, Children's Hospital Boston, Boston, MA.

Time: Sun. 2:10 PM - 2:45 PM

178.03. Meningeal immunity and lymphatics in neurological disorders

J. Kipnis;
Neuroscience, University of Virginia, Charlottesville, VA.

Time: Sun. 2:45 PM - 3:20 PM

178.04. Tissue intrinsic mechanisms regulating neuroinflammation

J. I. Alvarez;
University of Pennsylvania, Philadelphia, PA.

Time: Sun. 3:20 PM - 3:55 PM

178.05. Microbiome-nervous system interactions in health and disease

E. Hsiao;
Integrative biology and physiology, UCLA, Los Angeles, CA.

Time: Sun. 3:55 PM - 4:00 PM

178.06. Closing Remarks

Symposium

179. Cortical Plasticity Following Sensory Loss and Restoration

Theme D: Sensory Systems

Location: Ballroom B

Time: 11/12/2017 1:30:00 PM - 11/12/2017 4:00:00 PM

Studies of sensory loss and restoration are changing traditional views of cortical organization. Integrating animal and human models in addition to insight from the study of blindness and

deafness, this symposium will discuss mechanisms of crossmodal plasticity in visual and auditory cortices throughout the lifespan, the role of critical periods, impact on perception and cognition, and how these changes influence the outcomes of sensory prosthetics.

Time: Sun. 1:30 PM - 4:00 PM

179. Chair

S. G. Lomber;
Department of Physiology and Pharmacology, University of Western Ontario, London, ON, CANADA.

Time: Sun. 1:30 PM - 4:00 PM

179. Co Chair

A. Amedi;
Medical Neurobiology, The Hebrew University of Jerusalem, Jerusalem, ISRAEL.

Time: Sun. 1:30 PM - 1:35 PM

179.01. Introduction

Time: Sun. 1:35 PM - 2:10 PM

179.02. Crossmodal plasticity in auditory cortex of the congenitally deaf

S. G. Lomber;
Department of Physiology and Pharmacology, University of Western Ontario, London, ON, CANADA.

Time: Sun. 2:10 PM - 2:45 PM

179.03. Deficits after early visual deprivation: A role for cross-modal re-organization?

D. Maurer;
Psychology, Neuroscience & Behaviour, McMaster University, Hamilton, ON, CANADA.

Time: Sun. 2:45 PM - 3:20 PM

179.04. Functional links between brain reorganization and auditory processing: Evidence from cochlear implanted and unilateral deaf patients

P. Barone;
Neurophysiology and Neuroanatomy, Cerveau & Cognition. CNRS UMR 5549, Tolouse, FRANCE.

Time: Sun. 3:20 PM - 3:55 PM

179.05. An updated view of cortical specializations and its dependence on sensory experience

A. Amedi;
Medical Neurobiology, The Hebrew University of Jerusalem, Jerusalem, ISRAEL.

Time: Sun. 3:55 PM - 4:00 PM

179.06. Closing Remarks

Minisymposium

180. New Breakthroughs in Understanding the Role of Functional Interactions Between the Neocortex and the Claustrum

Theme H: Cognition

Location: Ballroom C

Time: 11/12/2017 1:30:00 PM - 11/12/2017 4:00:00 PM

The claustrum is highly interconnected with almost all areas of the neocortex, yet the function of this corticoclaustral system has largely remained mysterious. Recent work has sparked new hypotheses regarding the corticoclaustral system based on analyses from the microcircuit to the behavioral level. This minisymposium will bring together a diverse array of researchers to discuss emerging views of the claustrum’s influence on cortical activity and its role in cognitive function.

Time: Sun. 1:30 PM - 4:00 PM

180. Chair

S. P. Brown;
Department of Neuroscience, Johns Hopkins School of Medicine, Baltimore, MD.

Time: Sun. 1:30 PM - 4:00 PM

180. Co Chair

B. N. Mathur;
Pharmacology, University of Maryland School of Medicine, Baltimore, MD.

Time: Sun. 1:30 PM - 1:35 PM

180.01. Introduction

Time: Sun. 1:35 PM - 1:55 PM

180.02. Claustral-cortical communication in a visual change detection task

S. R. Olsen;
Allen Institute for Brain Science, Allen Institute For Brain Science, Seattle, WA.

Time: Sun. 1:55 PM - 2:15 PM

180.03. The claustrum enables resilience to distraction through gain control of cortical sensory processing

A. Citri;
The Safra Center for Brain Sciences and the Life Science Institute, Hebrew University, Jerusalem, ISRAEL.

Time: Sun. 2:15 PM - 2:35 PM

180.04. Anterior cingulate cortex input to the claustrum is required for top-down action control

B. N. Mathur;
Pharmacology, University of Maryland School of Medicine, Baltimore, MD.

Time: Sun. 2:35 PM - 2:55 PM

180.05. Is the claustrum responsible for cortical activation during REM sleep?

P. Luppi;
CNRS UMR 5292/INSERM U1028, Lyon, FRANCE.

Time: Sun. 2:55 PM - 3:15 PM

180.06. Synaptic circuits of the claustrum: A comparison with the dorsal thalamus

M. E. Bickford;
Anatomical Sciences and Neurobiology, University of Louisville School of Medicine, Louisville, KY.

Time: Sun. 3:15 PM - 3:35 PM

180.07. Functional organization of the neural circuits of the corticoclaustral system

S. P. Brown;
Department of Neuroscience, Johns Hopkins School of Medicine, Baltimore, MD.

Time: Sun. 3:35 PM - 4:00 PM

180.08. Closing Remarks

Minisymposium

181. Emerging Mechanisms Underlying Dynamics of Gabaergic Synapses

Theme B: Neural Excitability, Synapses, and Glia

Location: 145B

Time: 11/12/2017 1:30:00 PM - 11/12/2017 4:00:00 PM

In recent years, it has emerged that GABAergic inhibition is flexible, allowing input-specific adaptations at excitatory connections. This minisymposium will address several novel mechanisms for “plastic” GABAergic neurotransmission and highlight mechanisms that are operational during development and in mature neuronal circuits. This event will also showcase a tight molecular interplay between glutamatergic and GABAergic neurotransmission systems.

Time: Sun. 1:30 PM - 4:00 PM

181. Chair

S. K. Tyagarajan;
Institute of Pharmacology and Toxicology, University of Zurich, Zurich, SWITZERLAND.

Time: Sun. 1:30 PM - 4:00 PM

181. Co Chair

A. Maffei;
Neurobiology and Behavior, State University of New York, Stony Brook, Stony Brook, NY.

Time: Sun. 1:30 PM - 1:35 PM

181.01. Introduction

Time: Sun. 1:35 PM - 1:55 PM

181.02. Molecular mechanisms coordinating the development of inhibitory and excitatory synapses: insights from a human-specific gene

C. Charrier;
Institute of Biology (IBENS) Inserm, CNRS, Ecole Normale Supérieure, Paris, FRANCE.

Time: Sun. 1:55 PM - 2:15 PM

181.03. CB1 receptor and parvalbumin interneurons: a novel developmental GABAergic affair

M. Caiati;
Molecular and Cellular Biology, Harvard University, Cambridge, MA.

Time: Sun. 2:15 PM - 2:35 PM

181.04. Cellular signaling facilitates GABAergic synapse plasticity via gephyrin scaffold dynamics

S. K. Tyagarajan;
Pharmacology and Toxicology, University of Zurich, Zurich, SWITZERLAND.

Time: Sun. 2:35 PM - 2:55 PM

181.05. Coordinated plasticity at dendritic excitatory and inhibitory synapses

A. Barberis;
Department of Neuroscience and Brain Technologies, Italian Institute of Technology, Genova, ITALY.

Time: Sun. 2:55 PM - 3:15 PM

181.06. Novel proteins moonlighting between GABAergic and glutamatergic synapse

M. A. Woodin;
University of Toronto, Toronto, ON, CANADA.

Time: Sun. 3:15 PM - 3:35 PM

181.07. Multiple roles for GABAergic inhibition in sensory neocortex

A. Maffei;
Neurobiology and Behavior, SUNY-Stony Brook, Stony Brook, NY.

Time: Sun. 3:35 PM - 4:00 PM

181.08. Closing Remarks

Minisymposium

182. Advances in Parkinson's Disease Biomarkers and Disease Modeling

Theme E: Motor Systems

Location: 146A

Time: 11/12/2017 1:30:00 PM - 11/12/2017 4:00:00 PM

Parkinson’s disease (PD), a chronic movement disorder with no cure, is benefiting from coordinated efforts around high-quality, standardized clinical data acquisition and biosample collections that are being broadly shared with the research community to promote biomarker development and disease modeling. Academic and industry researchers will highlight advances in PD genetics, imaging, transcriptomics, wearable technology, and data integration.

Time: Sun. 1:30 PM - 4:00 PM

182. Chair

M. L. Sutherland;
NINDS/NIH, Rockville, MD.

Time: Sun. 1:30 PM - 4:00 PM

182. Co Chair

D. J. Stone;
Genetics and Pharmacogenomics, Merck Research Labs, West Point, PA.

Time: Sun. 1:30 PM - 1:35 PM

182.01. Introduction

Time: Sun. 1:35 PM - 1:55 PM

182.02. Transcriptomic analysis of biofluid samples in Parkinson's disease

K. Van Keuren-Jensen;
Neurogenomics, TGen, Phoenix, AZ.

Time: Sun. 1:55 PM - 2:15 PM

182.03. Integrating diverse data in the prediction of Parkinson’s disease

A. Singleton;
Neurogenetics, National Institute of Aging, Bethesda, MD.

Time: Sun. 2:15 PM - 2:35 PM

182.04. The ENIGMA project: Mapping disease and genetic effects on the brain in 50,000 people from 35 countries worldwide

P. Thompson;
Neurology, Keck School of Medicine of USC, Los Angeles, CA.

Time: Sun. 2:35 PM - 2:55 PM

182.05. The promise of device-based sensors in contributing to biomarker data in PD

W. Marks;
Clinical Neurology, Verily Life Sciences, San Francisco, CA.

Time: Sun. 2:55 PM - 3:15 PM

182.06. Open systems for biomarker development

L. Mangravite;
Systems Biology, Sage Bionetworks, Seattle, WA.

Time: Sun. 3:15 PM - 3:35 PM

182.07. Data-driven analysis of brain disorders: The case of Parkinsonism descriptive and predictive modeling

F. Faghri;
Neurogenetics, National Institute of Aging, Bethesda, MD.

Time: Sun. 3:35 PM - 4:00 PM

182.08. Closing Remarks

Minisymposium

183. The Science of Storytelling and Storytelling in Science

Theme J: History and Education

Location: 151B

Time: 11/12/2017 1:30:00 PM - 11/12/2017 4:00:00 PM

Now, more than ever, it is essential that scientists actively engage with the public. Through storytelling, the use of a personal narrative to bring science to life, we can improve communication not only with the public, but also within the community, promoting better scientific progress. Through presentations about the science of storytelling, why and how to do it, and three powerful personal stories, this session aims to demonstrate how storytelling can transform science communication.

Time: Sun. 1:30 PM - 4:00 PM

183. Chair

P. L. Croxson;
Neuroscience, Icahn School of Medicine at Mount Sinai, New York, NY.

Time: Sun. 1:30 PM - 4:00 PM

183. Co Chair

D. Schiller;
Psychiatry and Neuroscience Departments, and Friedman Brain Institute, Icahn School of Medicine at Mount Sinai, New York, NY.

Time: Sun. 1:30 PM - 1:35 PM

183.01. Introduction

Time: Sun. 1:35 PM - 1:55 PM

183.02. Telling stories of science

L. Neeley;
The Story Collider, Washington, DC.

Time: Sun. 1:55 PM - 2:15 PM

183.03. Understanding addiction as a neuroscientist and a sister

M. Boyle;
Office of Science Policy and Communication, NIDA, Bethesda, MD.

Time: Sun. 2:15 PM - 2:35 PM

183.04. Nobody has to read this: Why storytelling matters in science journalism

E. Yong;
The Atlantic, Washington, DC.

Time: Sun. 2:35 PM - 2:55 PM

183.05. A new last memory

D. Schiller;
Psychiatry and Neuroscience Departments, and Friedman Brain Institute, Icahn School of Medicine at Mount Sinai, New York, NY.

Time: Sun. 2:55 PM - 3:15 PM

183.06. Naturalistic experiments and public engagement

J. L. Gallant;
University of California Berkeley, Berkeley, CA.

Time: Sun. 3:15 PM - 3:35 PM

183.07. My father’s insanity becomes my sanity: Breaking the psychological cycle of poverty

E. D. Jarvis;
Duke Univ Med Ctr, DURHAM, NC.

Time: Sun. 3:35 PM - 4:00 PM

183.08. Closing Remarks

Symposium

262. Impact of Zika Virus Infection in the Nervous System and Its Underlying Mechanisms

Theme A: Development

Location: Ballroom A

Time: 11/13/2017 8:30:00 AM - 11/13/2017 11:00:00 AM

The World Health Organization declared a public health emergency of international concern on Feb. 1, 2016, due to a potential link between Zika virus and microcephaly and/or other neurological diseases. This symposium will discuss recent advances in our understanding of how Zika virus affects nervous system development and the underlying mechanisms that have been revealed using different model systems, including human fetal tissue, human pluripotent stem cell-derived organoids and neurospheres, and animal models.

Time: Mon. 8:30 AM - 11:00 AM

262. Chair

G. Ming;
Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA.

Time: Mon. 8:30 AM - 11:00 AM

262. Co Chair

N. Sestan;
Neuroscience, of Comparative Medicine, of Genetics and of Psychiatry, Yale University School of Medicine, New Haven, CT.

Time: Mon. 8:30 AM - 8:35 AM

262.01. Introduction

Time: Mon. 8:35 AM - 9:10 AM

262.02. Brain organoids for modelling human brain development and Zika infection

G. Ming;
Dept Neurol & Neurosci, University of Pennsylvania, Philadelphia, PA.

Time: Mon. 9:10 AM - 9:45 AM

262.03. Mechanisms of Zika induced neuronal death in the developing and mature brain

J. Gleeson;
Genomic Medicine, UCSD, La Jolla, CA.

Time: Mon. 9:45 AM - 10:20 AM

262.04. Zika virus impairs molecular fingerprinting in neural stem cells

P. P. Garcez;
Institute of Biomedical Sciences,, Federal University of Rio de Janeiro,, University city, Fundão Island, BRAZIL.

Time: Mon. 10:20 AM - 10:55 AM

262.05. Mechanisms underlying Zika virus-related neurodevelopmental defects

N. Sestan;
Neuroscience, of Comparative Medicine, of Genetics and of Psychiatry, Yale University School of Medicine, New Haven, CT.

Time: Mon. 10:55 AM - 11:00 AM

262.06. Closing Remarks

Symposium

263. Assembly and Maintenance of the Peripheral Nerve Node of Ranvier in Development, Health, and Disease

Theme B: Neural Excitability, Synapses, and Glia

Location: 146A

Time: 11/13/2017 8:30:00 AM - 11/13/2017 11:00:00 AM

Nodes of Ranvier are the sites of saltatory conduction, a fundamental adaption of myelinated axons. Our understanding of the molecular organization of the nodal region has rapidly advanced. Many components have been identified, as have the interactions among the axonal and glial molecules, accounting for the specialized features of nodal, paranodal, and juxtaparanodal domains. Human autoimmune neuropathies are diseases that target glial and axonal nodal proteins and glycolipids, leading to nodal disruption and conduction block. The symposium will comprise a broad overview of this area, including descriptions of the latest research findings from presenters' laboratories.

Time: Mon. 8:30 AM - 11:00 AM

263. Chair

H. J. Willison;
MVLS, University of Glasgow, Glasgow, UNITED KINGDOM.

Time: Mon. 8:30 AM - 11:00 AM

263. Co Chair

P. J. Brophy;
Centre for Neuroregeneration, University of Edinburgh, Edinburgh, UNITED KINGDOM.

Time: Mon. 8:30 AM - 8:35 AM

263.01. Introduction

Time: Mon. 8:35 AM - 9:10 AM

263.02. Role of myelinating glia in the organization of the nodes of Ranvier

E. Peles;
Department of Molecular Cell Biology, Weizmann Institute of Science, Rehovot, ISRAEL.

Time: Mon. 9:10 AM - 9:45 AM

263.03. Juxtaparanodal function at the nodal complex in health and disease

C. Faivre-Sarrailh;
Neuron-Glia interactions and Neuropathology CRN2M, CNRS UMR 7286, Aix Marseille University, Marseille, FRANCE.

Time: Mon. 9:45 AM - 10:20 AM

263.04. Assembly of PNS nodal complexes

P. J. Brophy;
Centre for Neuroregeneration, University of Edinburgh, Edinburgh, UNITED KINGDOM.

Time: Mon. 10:20 AM - 10:55 AM

263.05. Glycolipids at PNS nodes in Guillain-Barre syndrome

H. J. Willison;
MVLS, University of Glasgow, Glasgow, UNITED KINGDOM.

Time: Mon. 10:55 AM - 11:00 AM

263.06. Closing Remarks

Minisymposium

264. Neuroscience of Maternal Psychopathology

Theme G: Motivation and Emotion

Location: Ballroom B

Time: 11/13/2017 8:30:00 AM - 11/13/2017 11:00:00 AM

Motherhood involves striking structural and chemical neuroplasticity, which is associated with increased susceptibility to anxiety and depression. These disorders have unique profiles of neural activation when experiencing postpartum, and because the underlying systems overlap with those for caregiving, mother-infant interactions can be disrupted. Therefore, there is intricate interplay among maternal mental health, the mother-infant relationship, and neurobiological mechanisms mediating them.

Time: Mon. 8:30 AM - 11:00 AM

264. Chair

J. Pawluski;
Irset Inserm U1085, University of Rennes 1, Rennes, FRANCE.

Time: Mon. 8:30 AM - 11:00 AM

264. Co Chair

J. S. Lonstein;
Neurosci Program, Michigan State University, East Lansing, MI.

Time: Mon. 8:30 AM - 8:35 AM

264.01. Introduction

Time: Mon. 8:35 AM - 8:55 AM

264.02. Pregnancy and maternal attachment are associated with long-lasting changes in human brain structure

E. Hoekzema;
Leiden Institute for Brain and Cognition, Leiden University, Leiden, NETHERLANDS.

Time: Mon. 8:55 AM - 9:15 AM

264.03. Motherhood, stress and SSRIs: Effects on hippocampal plasticity during pregnancy and the postpartum period

J. Pawluski;
Irset Inserm U1085, University of Rennes 1, Rennes, FRANCE.

Time: Mon. 9:15 AM - 9:35 AM

264.04. Motherhood and reproductive state influence central serotonin systems involved in postpartum mental illness

J. S. Lonstein;
Neurosci Program, Michigan State University, East Lansing, MI.

Time: Mon. 9:35 AM - 9:55 AM

264.05. The neural correlates of responsiveness to infant pictures: A comparison of depressed and nondepressed mothers and non-mothers

A. Dudin;
Psychology, Neuroscience and Behavior, McMaster University, Hamilton, CANADA.

Time: Mon. 9:55 AM - 10:15 AM

264.06. Gestational stress effects on the postpartum reward system: Implications for mood and mothering

B. Leuner;
Department of Psychology, Ohio State University, Columbus.

Time: Mon. 10:15 AM - 10:35 AM

264.07. Maternal neglect and anxiety involve CRF receptors in the bed nucleus of the stria terminalis

O. Bosch;
Behavioural and Molecular Neurobiology, University of Regensburg, Regensburg, GERMANY.

Time: Mon. 10:35 AM - 11:00 AM

264.08. Closing Remarks

Minisymposium

265. Beyond Place Cells: Recent Surprises From Hippocampal Neurophysiology

Theme H: Cognition

Location: Ballroom C

Time: 11/13/2017 8:30:00 AM - 11/13/2017 11:00:00 AM

Hippocampal neurons show spatially selective responses, termed place cells. The minisymposium will highlight recent advances that elucidate the mechanisms governing place cells and demonstrate hippocampal responses beyond allocentric spatial selectivity or place cells. These insights are obtained using diverse species — mice, rats, bats, and primates — and range

of behavioral, physiological, and computational techniques. The results provide significant new insights about hippocampal function.

Time: Mon. 8:30 AM - 11:00 AM

265. Chair

M. R. Mehta;
Departments of: Physics & Astronomy, Neurology, Neurobiology, University of California at Los Angeles (UCLA), Los Angeles, CA.

Time: Mon. 8:30 AM - 11:00 AM

265. Co Chair

C. A. Barnes;
Evelyn F. McKnight Brain Institute, University of Arizona, Tucson, AZ.

Time: Mon. 8:30 AM - 8:35 AM

265.01. Introduction

Time: Mon. 8:35 AM - 8:55 AM

265.02. Temporal lobe activity in nonhuman primates: Locomotion versus restraint

C. A. Barnes;
Evelyn F. McKnight Brain Institute, University of Arizona, Tucson, AZ.

Time: Mon. 8:55 AM - 9:15 AM

265.03. Spatial representation of self and others in the hippocampus of bats

N. Ulanovsky;
Weizmann Institute of Science, Rehovot, ISRAEL.

Time: Mon. 9:15 AM - 9:35 AM

265.04. Object-vector cells and position coding in the medial entorhinal cortex

E. Moser;
Neural Computation, Kavli Inst Systems Neurosci, Trondheim, NORWAY.

Time: Mon. 9:35 AM - 9:55 AM

265.05. From virtual reality to reality: How neurons make memorable maps

M. R. Mehta;
Departments of: Physics & Astronomy, Neurology, Neurobiology, University of California at Los Angeles (UCLA), Los Angeles, CA.

Time: Mon. 9:55 AM - 10:15 AM

265.06. Circuit mechanisms of CA1 place fields

J. C. Magee;
Janelia Farm Research Campus, Howard Hughes Med Inst, Ashburn, VA.

Time: Mon. 10:15 AM - 10:35 AM

265.07. Mapping of a non-spatial dimension by the hippocampal-entorhinal circuit

D. Aronov;
JLG Science Center, Columbia University, New York, NY.

Time: Mon. 10:35 AM - 11:00 AM

265.08. Closing Remarks

Minisymposium

266. Open-Source Hardware for Neuroscience Research

Theme I: Techniques

Location: 145B

Time: 11/13/2017 8:30:00 AM - 11/13/2017 11:00:00 AM

Neuroscientists often invent new devices to further their experiments. In recent years, neuroscientists have published several open-source inventions that rival commercial solutions. In this minisymposium, attendees will learn from the creators of six open-source projects, including a head-mounted mini-microscope, a high-channel count electrophysiology system, multiple operant behavioral systems, and novel experiment control software, all of which are freely available to be built, used, and modified.

Time: Mon. 8:30 AM - 11:00 AM

266. Chair

A. Kravitz;
National Institute of Diabetes and Digestive and Kidney Diseases, NIH, Bethesda, MD.

Time: Mon. 8:30 AM - 8:35 AM

266.01. Introduction

Time: Mon. 8:35 AM - 8:55 AM

266.02. New generation open source miniaturized microscopes for imaging during behavior

P. Golshani;
Department of Neurology, University of California, Los Angeles, Los Angeles, CA.

Time: Mon. 8:55 AM - 9:15 AM

266.03. Feeding Experimentation Device (FED): An open-source system for measuring food intake in rodents

K. P. Nguyen;
Bioengineering, Carnegie Mellon, Pittsburgh, PA.

Time: Mon. 9:15 AM - 9:35 AM

266.04. An open source device for operant licking in rats

H. Chen;
Dept Pharmacol, Univ Tennessee Hlth Sci Ctr, Memphis.

Time: Mon. 9:35 AM - 9:55 AM

266.05. Open ephys: An open source system for electrophysiology

J. Voigts;
MIT, MIT, Cambridge, MA.

Time: Mon. 9:55 AM - 10:15 AM

266.06. An open platform for real-time control of trial-based behavioral tasks

J. Sanders;
Sanworks LLC, Sound Beach, NY.

Time: Mon. 10:15 AM - 10:35 AM

266.07. Bonsai: A visual programming language for the rapid prototyping of neuroscience experiments

G. Lopes;
NA, Sainsbury Wellcome Centre, London, UNITED KINGDOM.

Time: Mon. 10:35 AM - 11:00 AM

266.08. Closing Remarks

Minisymposium

267. Modulation of Spinal Motor Networks: New Perspectives in the Control of Movement

Theme E: Motor Systems

Location: 151B

Time: 11/13/2017 8:30:00 AM - 11/13/2017 11:00:00 AM

Over the past decade, technological advances have provided tools to identify and activate circuits within the brain and spinal cord. This has led to conceptual advances in our understanding of network connectivity and intracellular properties that contribute to rhythmogenesis. This minisymposium will explore these findings in topics ranging from the descending control of locomotion to changes in pacemaker cells following spinal cord injury.

Time: Mon. 8:30 AM - 11:00 AM

267. Chair

P. J. Whelan;
Comparative Biology and Experimental Medicine, University of Calgary, Calgary, AB, CANADA.

Time: Mon. 8:30 AM - 8:35 AM

267.01. Introduction

Time: Mon. 8:35 AM - 8:55 AM

267.02. Activity-dependent regulation of spinal motor networks by sodium-potassium pumps

G. Miles;
School of Psychology & Neuroscience, University of St. Andrews, Fife, UNITED KINGDOM.

Time: Mon. 8:55 AM - 9:15 AM

267.03. Contribution of DSCAM in the normal development of motor circuits

F. Bretzner;
Psychiatry and Neurosciences, Universite Laval, Quebec City, QC, CANADA.

Time: Mon. 9:15 AM - 9:35 AM

267.04. Contribution of non-linear firing behaviors in locomotor function and dysfunction

F. Brocard;
Faculté de Médecine, Institut de Neurosciences de la Timone, Marseille, FRANCE.

Time: Mon. 9:35 AM - 9:55 AM

267.05. Light on a sensory interface linking cerebrospinal fluid to motor circuits in vertebrates

C. Wyart;
Institut Cerveau Et Moelle Epiniere, Paris, FRANCE.

Time: Mon. 9:55 AM - 10:15 AM

267.06. Dopaminergic control of locomotion: Uncovering parallel pathways for movement control

P. J. Whelan;
Comparative Biology and Experimental Medicine, University of Calgary, Calgary, AB, CANADA.

Time: Mon. 10:15 AM - 10:35 AM

267.07. Brainstem descending cells involved in starting, maintaining, and stopping locomotion

R. Dubuc;
Neuroscience, Univ. du Quebec a Montreal, Montreal, QC, CANADA.

Time: Mon. 10:35 AM - 11:00 AM

267.08. Closing Remarks

Symposium

347. Neural Mechanisms of Voluntary Action Control: From Habits to Intentionality in Animals and Humans

Theme E: Motor Systems

Location: Ballroom A

Time: 11/13/2017 1:30:00 PM - 11/13/2017 4:00:00 PM

This symposium will address the neural mechanisms underlying the capacity for internally-generated, voluntary action, that characterizes the motor systems of humans and some animals. Recent experimental and modeling advances have rekindled neuroscientific interest in this classic topic. The symposium will cover animal models that have identified mechanisms for habitual and intentional action, as well as human studies that have both recorded and manipulated frontal processes underlying conscious volition. These advances are enabling the first computational models of volition.

Time: Mon. 1:30 PM - 4:00 PM

347. Chair

I. Fried;
Neurosurgery, University of California, Los Angeles, Los Angeles, CA.

Time: Mon. 1:30 PM - 1:35 PM

347.01. Introduction

Time: Mon. 1:35 PM - 2:10 PM

347.02. From habitual to voluntary action in corticostriatal networks

R. M. Costa;
Neurobiology of Action Laboratory, Champalimaud Foundation, Lisbon, PORTUGAL.

Time: Mon. 2:10 PM - 2:45 PM

347.03. Converging on volition: Reducing neural variability preceding voluntary action in humans

P. Haggard;
University College London, London, UNITED KINGDOM.

Time: Mon. 2:45 PM - 3:20 PM

347.04. Fifty years without free will: The role of stochastic fluctuations in the initiation of voluntary action

A. Schurger;
UNICOG, INSERM U992 / Neurospin / Cea-Saclay, Paris, FRANCE.

Time: Mon. 3:20 PM - 3:55 PM

347.05. Modulating conscious movement intention with noninvasive brain stimulation

B. J. He;
Langone Medical Center, NYU, New York, NY.

Time: Mon. 3:55 PM - 4:00 PM

347.06. Closing Remarks

Symposium

348. From Salient Experience to Learning and Memory: Instructive Signals for Aversion and Reward

Theme G: Motivation and Emotion

Location: Ballroom B

Time: 11/13/2017 1:30:00 PM - 11/13/2017 4:00:00 PM

Aversive and rewarding experiences are translated by the nervous system into instructive signals that alter brain connectivity, producing learning and changes in behavior. Using modern circuit

mapping, manipulation, and recording approaches, great progress has been made in understanding the neural mechanisms of instructive signaling. This symposium will provide an updated and interactive view on how aversive and rewarding instructive signals are constructed, coded, and transmitted.

Time: Mon. 1:30 PM - 4:00 PM

348. Chair

J. P. Johansen;
RIKEN Brain Science Institute, Wako-Shi, JAPAN.

Time: Mon. 1:30 PM - 1:35 PM

348.01. Introduction

Time: Mon. 1:35 PM - 2:10 PM

348.02. Neuronal circuit mechanisms for associative fear conditioning

A. Luthi;
FMI, Friedrich Miescher Institute for Biomedical Research, Basel, SWITZERLAND.

Time: Mon. 2:10 PM - 2:45 PM

348.03. Projection-specific signals in dopamine neurons during reinforcement learning

I. Witten;
Neuroscience, Princeton University, Princeton.

Time: Mon. 2:45 PM - 3:20 PM

348.04. Cue-directed behavior and reinforcement: Distinct roles of mesolimbic and nigrostriatal dopamine projections

P. H. Janak;
Psychological and Brain Sciences, Johns Hopkins University, Baltimore.

Time: Mon. 3:20 PM - 3:55 PM

348.05. Feedback circuits for calibrating aversive learning signals

J. P. Johansen;
Brain Science Institute, RIKEN Brain Science Institute, Wako-Shi, JAPAN.

Time: Mon. 3:55 PM - 4:00 PM

348.06. Closing Remarks

Minisymposium

349. *In Vivo* Imaging of CNS Injury and Disease

Theme C: Neurodegenerative Disorders and Injury

Location: Ballroom C

Time: 11/13/2017 1:30:00 PM - 11/13/2017 4:00:00 PM

In vivo optical imaging with advanced microscopy (e.g., multiphoton) has emerged as a powerful tool to study cellular responses to injury and disease in the mammalian CNS. Important new insight has been gained on axon degeneration and regeneration, glial responses, changes in the neurovascular unit, and neural transplants. This minisymposium will present recent advances in understanding the neuronal, glial, and other cellular responses to CNS injury and disease with *in vivo* imaging of the brain or spinal cord.

Time: Mon. 1:30 PM - 4:00 PM

349. Chair

B. Zheng;
Department of Neurosciences, University of California San Diego, La Jolla, CA.

Time: Mon. 1:30 PM - 4:00 PM

349. Co Chair

K. Akassoglou;
Department of Neurology, Gladstone Institutes, University of California San Francisco, San Francisco, CA.

Time: Mon. 1:30 PM - 1:35 PM

349.01. Introduction

Time: Mon. 1:35 PM - 1:55 PM

349.02. Subcellular dynamics during reversible axon damage in CNS injury and disease

T. Misgeld;
German Center for Neurodegenerative Diseases (DZNE), Technical University of Munich, Munich, GERMANY.

Time: Mon. 1:55 PM - 2:15 PM

349.03. *In vivo* imaging reveals regrowth of serotonin axons following injury in the adult brain

D. J. Linden;
Neurosci Dept, Johns Hopkins University Department of Neuroscience, Baltimore, MD.

Time: Mon. 2:15 PM - 2:35 PM

349.04. *In vivo* imaging of microglia and neurovascular unit in CNS disease and injury

K. Akassoglou;
Department of Neurology, University of California San Francisco, San Francisco, CA.

Time: Mon. 2:35 PM - 2:55 PM

349.05. Axonal branching impacts the degenerative and regenerative fate of injured spinal axons

B. Zheng;
Department of Neurosciences, University of California San Diego, La Jolla, CA.

Time: Mon. 2:55 PM - 3:15 PM

349.06. Imaging structural and functional changes in human iPSC-derived neurons transplanted *In vivo*

V. De Paola;
Institute of Clinical Sciences, Imperial College London, London, UNITED KINGDOM.

Time: Mon. 3:15 PM - 3:35 PM

349.07. Visualizing neural activity in the lateral geniculate nucleus of the thalamus of awake mice

L. Liang;
F.M. Kirby Program in Neuroscience, Boston Children’s Hospital, Boston, MA.

Time: Mon. 3:35 PM - 4:00 PM

349.08. Closing Remarks

Minisymposium

350. State-Dependent Cortical Processing

Theme D: Sensory Systems

Location: 145B

Time: 11/13/2017 1:30:00 PM - 11/13/2017 4:00:00 PM

How do behavioral states and cognitive factors affect cortical processing? States of wakefulness, sleep, and anesthesia affect neuronal excitability, perception, and plasticity. Vigilance, attention, expectation, and task context dynamically affect local cortical circuits during wakefulness. This minisymposium will discuss recent findings, highlight governing principles, and explore whether

behavioral states and cognitive factors may locally modulate cortical processing via common mechanisms.

Time: Mon. 1:30 PM - 4:00 PM

350. Chair

Y. Nir;
Tel Aviv University, Tel Aviv, ISRAEL.

Time: Mon. 1:30 PM - 4:00 PM

350. Co Chair

K. Wiech;
Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, UNITED KINGDOM.

Time: Mon. 1:30 PM - 1:35 PM

350.01. Introduction

Time: Mon. 1:35 PM - 1:55 PM

350.02. State-dependent organization of population activity across the brain

K. D. Harris;
Institute of Neurology and the Department of Physiology, Pharmacology, and Neuroscience, University College London, London, UNITED KINGDOM.

Time: Mon. 1:55 PM - 2:15 PM

350.03. Modulation of cortical state by global arousal and selective attention

T. Engel;
Howard Hughes Medical Institute, Cold Spring Harbor Lab, Cold Spring Harbor, NY.

Time: Mon. 2:15 PM - 2:35 PM

350.04. Contextual modulation of cortico-striatal activity in audition

A. M. Zador;
Zador Lab, Cold Spring Harbor Lab, Cold Spring Harbor, NY.

Time: Mon. 2:35 PM - 2:55 PM

350.05. Perceptual inference and neural oscillations: Predicting ‘what’ and ‘when’

L. Melloni;
Department of Neurophysiology, Max Planck Institute for Brain Research, Frankfurt, GERMANY.

Time: Mon. 2:55 PM - 3:15 PM

350.06. State-dependent sensory processing across wakefulness, sleep deprivation, sleep, and anesthesia

Y. Nir;
Physiology and Pharmacology, Sackler School of Medicine and Sagol School of Neuroscience, Tel Aviv University, Tel Aviv, ISRAEL.

Time: Mon. 3:15 PM - 3:35 PM

350.07. How expectations shape the experience of pain: Insights from functional neuroimaging in humans

K. Wiech;
Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, UNITED KINGDOM.

Time: Mon. 3:35 PM - 4:00 PM

350.08. Closing Remarks

Minisymposium

351. Neuroethology of Listening: Learning, Perception, and Preference in Female Songbirds

Theme F: Integrative Physiology and Behavior

Location: 146A

Time: 11/13/2017 1:30:00 PM - 11/13/2017 4:00:00 PM

Songbirds are a diverse order known for producing learned vocalizations. Young songbirds must learn from a tutor to produce species-typical vocalizations as adults. Early research on the neurobiology of song learning focused primarily on males, presumably because males of many species tend to sing more than the females. More recently, researchers have recognized the importance of females beyond response to male song. This symposium will highlight the neuroethology of new female songbird research.

Time: Mon. 1:30 PM - 4:00 PM

351. Chair

L. S. Phillmore;
Psychology and Neuroscience, Dalhousie Univ, Halifax, NS, CANADA.

Time: Mon. 1:30 PM - 4:00 PM

351. Co Chair

S. C. Woolley;
Biology, McGill University, Montreal, QC, CANADA.

Time: Mon. 1:30 PM - 1:35 PM

351.01. Introduction

Time: Mon. 1:35 PM - 1:55 PM

351.02. Understanding receiver psychology in reproductive contexts

K. Lynch;
Biology, Hofstra University, Hempstead.

Time: Mon. 1:55 PM - 2:15 PM

351.03. Females as offspring of single mothers: Does rearing condition affect perception?

L. S. Phillmore;
Psychology and Neuroscience, Dalhousie Univ, Halifax, NS, CANADA.

Time: Mon. 2:15 PM - 2:35 PM

351.04. Zenk expression in response to tutor song and during sleep in juvenile females

S. Moorman;
Biology, Tufts University, Medford, MA.

Time: Mon. 2:35 PM - 2:55 PM

351.05. Female song, motivational state, and reward induced by hearing male courtship song

L. Riters;
Zoology, University of Wisconsin, Madison, WI.

Time: Mon. 2:55 PM - 3:15 PM

351.06. Neuromodulation of song preferences in female zebra finches

S. C. Woolley;
Biology, McGill University, Montreal, CANADA.

Time: Mon. 3:15 PM - 3:35 PM

351.07. Are there sex differences in the use of spatial cues for reorientation by birds?

D. Kelly;
Psychology, University of Manitoba, Winnipeg, MB, CANADA.

Time: Mon. 3:35 PM - 4:00 PM

351.08. Closing Remarks

Minisymposium

352. Innovative Approaches for Multimodal Neural Interfaces

Theme I: Techniques

Location: 151B

Time: 11/13/2017 1:30:00 PM - 11/13/2017 4:00:00 PM

The generation and transmission of neural potentials involves multiple chemical and physical processes. Traditional neurotechnologies interact with neural circuits electrically, and many issues in their implementation still exist, such as achieving a stable tissue interface and adequate spatiotemporal resolution. Focusing on emergent principles for recording and manipulating neural activity, this minisymposium will present the state-of-the-art multimodal neural interfaces.

Time: Mon. 1:30 PM - 4:00 PM

352. Chair

F. Vitale;
Center for Neuroengineering and Therapeutics, University of Pennsylvania, Philadelphia, PA.

Time: Mon. 1:30 PM - 4:00 PM

352. Co Chair

S. R. Santacruz;
Electrical Engineering and Computer Sciences, University of California, Berkeley, Berkeley, CA.

Time: Mon. 1:30 PM - 1:35 PM

352.01. Introduction

Time: Mon. 1:35 PM - 1:55 PM

352.02. Magnetogenetics: Optimization and rational design

J. T. Robinson;
Electrical and Computer Engineering, Rice University, Houston, TX.

Time: Mon. 1:55 PM - 2:15 PM

352.03. Microfluidic actuated electrodes for mapping epileptic networks

F. Vitale;
Center for Neuroengineering and Therapeutics, University of Pennsylvania, Philadelphia, PA.

Time: Mon. 2:15 PM - 2:35 PM

352.04. Engineered axonal tracts as 'living electrodes' for synaptic-based modulation of neural circuitry

D. K. Cullen;
Neurosurgery, University of Pennsylvania, Philadelphia, PA.

Time: Mon. 2:35 PM - 2:55 PM

352.05. Concurrent *in vivo* calcium imaging and large-scale electrophysiology using transparent electrode arrays in mice

D. Kuzum;
University of California San Diego, La Jolla, CA.

Time: Mon. 2:55 PM - 3:15 PM

352.06. Large-scale recording and intervention in neural circuity of learned behaviors

S. R. Santacruz;
Electrical Engineering and Computer Sciences, University of California, Berkeley, Berkeley, CA.

Time: Mon. 3:15 PM - 3:35 PM

352.07. A large-scale interface for optogenetics in non-human primates with application to sensorimotor cortical plasticity

A. Yazdan-Shahmorad;
Physiology, University of California San Francisco, San Francisco, CA.

Time: Mon. 3:35 PM - 4:00 PM

352.08. Closing Remarks

Symposium

439. Tau Homeostasis and Toxicity in Neurodegeneration

Theme C: Neurodegenerative Disorders and Injury

Location: Ballroom A

Time: 11/14/2017 8:30:00 AM - 11/14/2017 11:00:00 AM

Microtubule-binding protein tau has emerged as a central player in neurodegenerative diseases. Imbalanced tau proteostasis, characterized with accumulation and spread, is linked with neuronal and synaptic toxicity. The aim of the symposium is to discuss how tau proteostasis becomes dysregulated and how tau becomes toxic. The symposium will focus on the post-translational mechanisms, as well as cell autonomous and non-cell autonomous forms of regulation in both animal models and human stem cells.

Time: Tue. 8:30 AM - 11:00 AM

439. Chair

L. Gan;
Gladstone Institute of Neurological Disease, San Francisco, CA.

Time: Tue. 8:30 AM - 11:00 AM

439. Co Chair

K. Ashe;
Neuroscience, University of Minnesota, Minneapolis, MN.

Time: Tue. 8:30 AM - 8:35 AM

439.01. Introduction

Time: Tue. 8:35 AM - 9:10 AM

439.02. Tau lifespan in neurodegenerative diseases

B. T. Hyman;
Neurology, Massachusetts General Hospital, Charleston, MA.

Time: Tue. 9:10 AM - 9:45 AM

439.03. Insights into regulation of tau proteostasis in human stem cell models of dementia

R. Livesey;
Biochemistry, University of Cambridge, Cambridge, UNITED KINGDOM.

Time: Tue. 9:45 AM - 10:20 AM

439.04. Caspase-2 cleavage of tau reversibly impairs memory

K. H. Ashe;
Neuroscience, University of Minnesota, Minneapolis, MN.

Time: Tue. 10:20 AM - 10:55 AM

439.05. Critical role of tau acetylation in tau homeostasis and toxicity

L. Gan;
Neurology, Gladstone Institutes, UCSF, San Francisco, CA.

Time: Tue. 10:55 AM - 11:00 AM

439.06. Closing Remarks

Symposium

440. Exciting New Tools and Technologies Emerging From the BRAIN Initiative

Theme I: Techniques

Location: Ballroom C

Time: 11/14/2017 8:30:00 AM - 11/14/2017 11:00:00 AM

The BRAIN Initiative seeks to reveal how brain cells and circuits dynamically interact in time and space to shape our perceptions and behavior. BRAIN investigators are accelerating the development and application of new tools and neurotechnologies to tackle these challenges. This symposium highlights advances that will enable exploration of how the brain records, stores, and processes vast amounts of information, shedding light on the complex links between brain function and behavior.

Time: Tue. 8:30 AM - 11:00 AM

440. Chair

J. A. Gordon;
Office of the Director, National Institute of Mental Health, NIH, Bethesda, MD.

Time: Tue. 8:30 AM - 8:35 AM

440.01. Introduction

Time: Tue. 8:35 AM - 9:10 AM

440.02. High density carbon fiber electrode array for the detection of electrophysiological and dopaminergic activity

C. A. Chestek;
Biomedical Engineering, University of Michigan, Ann Arbor, MI.

Time: Tue. 9:10 AM - 9:45 AM

440.03. Multi-scale, multi-modal imaging of spontaneous activity in mice

M. C. Crair;
Department of Neuroscience, Yale University, New Haven, CT.

Time: Tue. 9:45 AM - 10:20 AM

440.04. Magnetic nanotransducers for wireless neural excitation

P. Anikeeva;
Materials Science and Engineering, Massachusetts Institute of Technology, Cambridge, MA.

Time: Tue. 10:20 AM - 10:55 AM

440.05. Sonogentics: A non-invasive method for manipulating neurons

S. Chalasani;
Molecular Neurobiology Laboratory, The Salk Institute For Biological Studies, La Jolla, CA.

Time: Tue. 10:55 AM - 11:00 AM

440.06. Closing Remarks

Minisymposium

441. Glia-Neuron Interactions Regulate Sleep

Theme F: Integrative Physiology and Behavior

Location: Ballroom B

Time: 11/14/2017 8:30:00 AM - 11/14/2017 11:00:00 AM

Current models of sleep-wake regulation are neuron-centric and cannot explain key aspects of sleep. This minisymposium will present research showing that sleep network models need to be revised to include glia. The session will present new evidence gathered using innovative methods that prove a glial-neuron network modulates sleep architecture and homeostatic sleep drive. This also explains why sleep is necessary, a topic of interest to everyone.

Time: Tue. 8:30 AM - 11:00 AM

441. Chair

P. J. Shiromani;
Psychiatry, Ralph H Johnson VA Medical Center, Charleston, SC.

Time: Tue. 8:30 AM - 11:00 AM

441. Co Chair

M. Frank;
Department of Biomedical Sciences, Washington State University, Spokane, Spokane, WA.

Time: Tue. 8:30 AM - 8:35 AM

441.01. Introduction

Time: Tue. 8:35 AM - 8:55 AM

441.02. Optogenetic activation of astroglia induce sleep in mice

C. A. Blanco-Centurion;
Psychiatry, Medical University of South Carolina, CHARLESTON, SC.

Time: Tue. 8:55 AM - 9:15 AM

441.03. Wakefulness stimulates D-serine release from astrocytes

P. G. Haydon;
Neuroscience, Tufts University School of Medicine, Boston, MA.

Time: Tue. 9:15 AM - 9:35 AM

441.04. Conserved glial mechanisms in sleep architecture and regulation

M. Frank;
Department of Biomedical Sciences, Washington State University, Spokane, Spokane, WA.

Time: Tue. 9:35 AM - 9:55 AM

441.05. Glial adenosine acts on A1 receptors to regulate sleep drive

R. W. Greene;
Dept Psychiatry, UTSW & VAMC, Dallas, TX.

Time: Tue. 9:55 AM - 10:15 AM

441.06. Activation of the glymphatic system during sleep: A function of sleep

M. Nedergaard;
Neurosurgery Ctr Aging, Univ Rochester, Rochester, NY.

Time: Tue. 10:15 AM - 10:35 AM

441.07. Sleep loss induces structural changes in astrocytes

M. Bellesi;
Dept. of Psychiatry, University of Wisconsin-Madison, Madison, WI.

Time: Tue. 10:35 AM - 11:00 AM

441.08. Closing Remarks

Minisymposium

442. The Structure and Function of Specific Cell-Cell Interactions in Neural Development: Protocadherins and Atypical Cadherins

Theme A: Development

Location: 145B

Time: 11/14/2017 8:30:00 AM - 11/14/2017 11:00:00 AM

Cell-cell interactions control nearly every process underlying neural circuit assembly. Protocadherins and atypical cadherins comprise a large and diverse group of molecules within the cadherin superfamily that mediates intercellular interactions in a broad range of developmental contexts. This minisymposium will explore recent advances in understanding the structure, function, and disease-associated disruption of these diverse cell-surface proteins.

Time: Tue. 8:30 AM - 11:00 AM

442. Chair

J. D. Jontes;
Dept Neurosci, Ohio State University, Columbus, OH.

Time: Tue. 8:30 AM - 11:00 AM

442. Co Chair

J. A. Weiner;
Dept. of Biology, The University of Iowa, Iowa City, IA.

Time: Tue. 8:30 AM - 8:35 AM

442.01. Introduction

Time: Tue. 8:35 AM - 8:55 AM

442.02. The outs and ins of protocadherins in dendrite arborization

J. A. Weiner;
Dept. of Biology, The University of Iowa, Iowa City, IA.

Time: Tue. 8:55 AM - 9:15 AM

442.03. Dscam masks adhesion mediated by classical cadherins and protocadherins

A. M. Garrett;
The Jackson Laboratory, Bar Harbor, ME.

Time: Tue. 9:15 AM - 9:35 AM

442.04. The role of d-protocadherins in the assembly of functional neural networks

J. D. Jontes;
Dept Neurosci, Ohio State University, Columbus, OH.

Time: Tue. 9:35 AM - 9:55 AM

442.05. The ins and outs of Fat3-dependent neuronal morphogenesis

L. V. Goodrich;
Department of Neurobiology, Harvard Medical School, Boston, MA.

Time: Tue. 9:55 AM - 10:15 AM

442.06. Sound perception and brain wiring enabled by exceptional cadherins

M. Sotomayor;
Chemistry and Biochemistry, Ohio State University, Columbus, OH.

Time: Tue. 10:15 AM - 10:35 AM

442.07. Molecular logic of neuronal self-avoidance through protocadherin interactions

R. Rubinstein;
Department of Systems Biology, Columbia University, New York, NY.

Time: Tue. 10:35 AM - 11:00 AM

442.08. Closing Remarks

Minisymposium

443. Good Vibrations: Genetic, Neural, and Behavioral Links Between Auditory and Tactile Perception

Theme D: Sensory Systems

Location: 146A

Time: 11/14/2017 8:30:00 AM - 11/14/2017 11:00:00 AM

While the neural systems underlying perception have been well studied, it remains debatable whether our senses rely on supramodal mechanisms. Recent evidence suggests that circuits traditionally considered modality-dedicated may support multiple senses. This minisymposium addresses the relationship between audition and touch — senses that signal by mechanotransduction. The speakers will consider cross-species evidence for links between audition and touch spanning genetics, neurophysiology, and behavior.

Time: Tue. 8:30 AM - 11:00 AM

443. Chair

J. M. Yau;
Neuroscience, Baylor College of Medicine, Houston, TX.

Time: Tue. 8:30 AM - 11:00 AM

443. Co Chair

S. Haegens;
Neurosurgery, Columbia University College of Physicians and Surgeons, New York.

Time: Tue. 8:30 AM - 8:35 AM

443.01. Introduction

Time: Tue. 8:35 AM - 8:55 AM

443.02. Do common genes govern tactile and auditory performance?

G. Lewin;
Genetics, Max-Delbrück Center for Molecular Medicine (MDC), Berlin, GERMANY.

Time: Tue. 8:55 AM - 9:15 AM

443.03. Auditory-tactile interactions in mouse somatosensory cortex

D. H. O'Connor;
Department of Neuroscience, The Johns Hopkins University School of Medicine, Baltimore, MD.

Time: Tue. 9:15 AM - 9:35 AM

443.04. Where and how in the cerebral cortex do single neurons process more than one sensory modality during perceptual judgments?

J. Vergara;
Physiology, Instituto de Fisiología Celular, National Autonomous University of Mexico & El Colegio Nacional, Mexico City, MEXICO.

Time: Tue. 9:35 AM - 9:55 AM

443.05. The role of the beta rhythm in supramodal information processing

S. Haegens;
Neurosurgery, Columbia University College of Physicians and Surgeons, New York.

Time: Tue. 9:55 AM - 10:15 AM

443.06. Neural correlates of auditory-tactile integration in meter perception

J. Huang;
Zanvyl Krieger Mind/Brain Institute and Dept. of Biomedical Engineering, Johns Hopkins University, Baltimore, MD.

Time: Tue. 10:15 AM - 10:35 AM

443.07. Distributed representations of auditory and tactile frequency in the human brain

J. M. Yau;
Neuroscience, Baylor College of Medicine, Houston.

Time: Tue. 10:35 AM - 11:00 AM

443.08. Closing Remarks

Minisymposium

444. Functional Diversity of Prefrontal Cortical Regions and Networks

Theme G: Motivation and Emotion

Location: 151B

Time: 11/14/2017 8:30:00 AM - 11/14/2017 11:00:00 AM

The prefrontal cortex (PFC) is a complex structure that plays diverse roles in cognition and emotion and is disrupted in multiple diseases. Despite decades of research into rodent PFC, there is no formal model of how its heterogeneous anatomy predicts its multifaceted role in behavior and disease. This minisymposium will present recent research using a range of modern techniques to advance new perspectives on the intersection between structure and function in medial and orbital PFC networks.

Time: Tue. 8:30 AM - 11:00 AM

444. Chair

D. E. Moorman;
Psychological and Brain Sciences, University of Massachusetts Amherst, Amherst, MA.

Time: Tue. 8:30 AM - 11:00 AM

444. Co Chair

S. Heilbronner;
Department of Pharmacology and Physiology, University of Rochester Medical Center, Rochester, NY.

Time: Tue. 8:30 AM - 8:35 AM

444.01. Introduction

Time: Tue. 8:35 AM - 8:55 AM

444.02. Connectivity reveals PFC homologies across rodents and nonhuman primates

S. R. Heilbronner;
Pharmacology and Physiology, University of Rochester, Rochester, NY.

Time: Tue. 8:55 AM - 9:15 AM

444.03. Functional heterogeneity in the rat prefrontal cortex supports correctly timed responses

I. Diester;
Department of Biology, Albert Ludwigs University Freiburg, Freiburg, GERMANY.

Time: Tue. 9:15 AM - 9:35 AM

444.04. Prefrontal cortical encoding of valence and action

D. E. Moorman;
Psychological and Brain Sciences, University of Massachusetts Amherst, Amherst, MA.

Time: Tue. 9:35 AM - 9:55 AM

444.05. Toggling between actions and habits: Involvement of the orbitofrontal cortex

S. L. Gourley;
Pediatrics, Neuroscience Program, Emory University, Atlanta, GA.

Time: Tue. 9:55 AM - 10:15 AM

444.06. Time-dependent regulation of fear memories: Focus on prefrontal cortical circuits

F. H. Do Monte;
Neurobiology and Anatomy, The University of Texas Health Science Center, Houston, TX.

Time: Tue. 10:15 AM - 10:35 AM

444.07. The infralimbic cortex: What does it actually do during cocaine-seeking behavior?

R. T. LaLumiere;
Dept Psych, University of Iowa, Iowa City, IA.

Time: Tue. 10:35 AM - 11:00 AM

444.08. Closing Remarks

Symposium

534. Social Origins of Developmental Risk for Mental and Physical Illnesses

Theme A: Development

Location: Ballroom A

Time: 11/14/2017 1:30:00 PM - 11/14/2017 4:00:00 PM

Young children experiencing intense adversity show profound changes in neural systems that regulate behavior and cardiovascular, metabolic, and immune function. This symposium will show the importance of timing of stress exposure, critical periods of intervention, and sex on various brain systems in young children, monkeys, and mice. The session will also focus on how changes in parental interaction with children can modify the long-term consequences of early-life stress exposure across species.

Time: Tue. 1:30 PM - 4:00 PM

534. Chair

J. L. Cameron;
Psychiatry, University of Pittsburgh, Pittsburgh, PA.

Time: Tue. 1:30 PM - 4:00 PM

534. Co Chair

P. Levitt;
Pediatrics, Children's Hospital Los Angeles, Los Angeles, CA.

Time: Tue. 1:30 PM - 1:35 PM

534.01. Introduction

Time: Tue. 1:35 PM - 2:10 PM

534.02. Exposure to adversity, timing of intervention and long term effects on brain and behavior in young children

N. Fox;
Human Development and Quantitative Methodology, University of Maryland, College Park, MD.

Time: Tue. 2:10 PM - 2:45 PM

534.03. Biological impact of early life stress dependent on the timing of stress exposure, state of neural development, and post-stress parental interaction

J. L. Cameron;
Psychiatry, University of Pittsburgh Department of Psychiatry, Pittsburgh, PA.

Time: Tue. 2:45 PM - 3:20 PM

534.04. Sex-specific circuit impact and reversibility of early life adversity

T. K. Hensch;
Harvard University, Cambridge, MA.

Time: Tue. 3:20 PM - 3:55 PM

534.05. Developmental trajectory of adaptive metabolic and functional systems due to early life stress

P. Levitt;
Pediatrics, Children's Hospital Los Angeles and University of Southern CA, Los Angeles, CA.

Time: Tue. 3:55 PM - 4:00 PM

534.06. Closing Remarks

Symposium

535. Circuit and Synaptic Plasticity Mechanisms of Drug Relapse

Theme G: Motivation and Emotion

Location: Ballroom B

Time: 11/14/2017 1:30:00 PM - 11/14/2017 4:00:00 PM

Relapse is a core feature of drug addiction and a subject of intense basic research investigation. The symposium will highlight new developments in our understanding of circuits and synaptic plasticity mechanisms of drug relapse from studies combining established and novel animal models with state-of-the-art cellular, electrophysiological, anatomical, chemogenetic, and optogenetic methods. The speakers will also discuss the translational implications of these new developments.

Time: Tue. 1:30 PM - 4:00 PM

535. Chair

Y. Shaham;
National Institute on Drug Abuse Intramural Research Program, NIH, Baltimore, MD.

Time: Tue. 1:30 PM - 1:35 PM

535.01. Introduction

Time: Tue. 1:35 PM - 2:10 PM

535.02. Role of cortico-striatal, cortico-amygdalar, and amygdalo-striatal projections in drug relapse

J. Taylor;
Psychiatry, Yale Univ Sch Med, New Haven, CT.

Time: Tue. 2:10 PM - 2:45 PM

535.03. Interaction of NMDAR- and AMPAR-dependent synaptic plasticity mechanisms in drug relapse

M. E. Wolf;
Neuroscience, Rosalind Franklin University of Medicine and Science, Chicago, IL.

Time: Tue. 2:45 PM - 3:20 PM

535.04. Cascades of homeostatic dysregulation progressively intensify cocaine seeking and relapse

Y. Dong;
Dept Neuroscience, Univ. of Pittsburgh, Pittsburgh, PA.

Time: Tue. 3:20 PM - 3:55 PM

535.05. Role of anterior insula and amygdala circuits in relapse after voluntary abstinence

Y. Shaham;
National Institute on Drug Abuse Intramural Research Program, NIH, Baltimore, MD.

Time: Tue. 3:55 PM - 4:00 PM

535.06. Closing Remarks

Symposium

536. Unconventional NMDA Receptor Signalling

Theme B: Neural Excitability, Synapses, and Glia

Location: Ballroom C

Time: 11/14/2017 1:30:00 PM - 11/14/2017 4:00:00 PM

In the classical view, postsynaptic NMDA receptors (NMDARs) act via calcium to signal coincidence detection in Hebbian learning. However, growing evidence shows that NMDARs can signal metabotropically, without the need for calcium influx. Moreover, NMDARs have been found presynaptically, where they do not act as Hebbian coincidence detectors. This

symposium will highlight novel findings indicating how the NMDAR field needs to be expanded to include unconventional modes of NMDAR action.

Time: Tue. 1:30 PM - 4:00 PM

536. Chair

P. J. Sjostrom;
Neurology & Neurosurgery, McGill University, Montreal, QC, CANADA.

Time: Tue. 1:30 PM - 4:00 PM

536. Co Chair

K. Zito;
Center for Neuroscience, University of California, Davis, Davis, CA.

Time: Tue. 1:30 PM - 1:35 PM

536.01. Introduction

Time: Tue. 1:35 PM - 2:10 PM

536.02. Non-Hebbian roles of NMDA receptors in the hippocampus

P. E. Castillo;
Albert Einstein Coll Med, Bronx, NY.

Time: Tue. 2:10 PM - 2:45 PM

536.03. A double dissociation of presynaptic NMDA receptor signalling in neocortex

P. J. Sjostrom;
Neurology, McGill University, Montreal, QC, CANADA.

Time: Tue. 2:45 PM - 3:20 PM

536.04. Molecular mechanisms of metabotropic NMDAR function

K. Dore;
Neurosciences and Neurobiology, UCSD, La Jolla, CA.

Time: Tue. 3:20 PM - 3:55 PM

536.05. Non-ionotropic signaling of NMDA receptors drives plasticity of neuronal structure

K. M. Zito;
Center for Neuroscience, Univ of California Davis, Davis, CA.

Time: Tue. 3:55 PM - 4:00 PM

536.06. Closing Remarks

Minisymposium

537. Delineating the Diversity of Spinal Interneurons in Locomotor Circuits

Theme E: Motor Systems

Location: 145B

Time: 11/14/2017 1:30:00 PM - 11/14/2017 4:00:00 PM

Spinal interneuronal circuits control locomotion. One important breakthrough in understanding the organization of locomotor circuits was the discovery of genetically-defined interneuron classes. However, the recent identification of distinct subsets of interneurons within each cardinal class has posed urgent questions that will be addressed in this minisymposium, including how to discern and define these subpopulations, the specific role each plays during locomotion, and how they are formed during development.

Time: Tue. 1:30 PM - 4:00 PM

537. Chair

Y. Zhang;
Medical Neuroscience, Dalhousie University, Halifax, NS, CANADA.

Time: Tue. 1:30 PM - 4:00 PM

537. Co Chair

S. Gosgnach;
Centre for Neuroscience, University of Alberta, Edmonton, AB, CANADA.

Time: Tue. 1:30 PM - 1:35 PM

537.01. Introduction

Time: Tue. 1:35 PM - 1:55 PM

537.02. Inhibitory circuits for limb motor control

J. B. Bikoff;
Howard Hughes Medical Institute, Kavli Institute for Brain Science, Depts. of Neurosci. and Biochem. and Molecular Biophys., Columbia University, New York, NY.

Time: Tue. 1:55 PM - 2:15 PM

537.03. Functional diversity of interneurons controlling locomotor speed in adult zebrafish

A. El Manira;
Karolinska Institute, Stockholm, SWEDEN.

Time: Tue. 2:15 PM - 2:35 PM

537.04. Subpopulations of commissural interneurons exhibit functional diversity during mammalian locomotion

S. Gosgnach;
Centre for Neuroscience, University of Alberta, Edmonton, AB, CANADA.

Time: Tue. 2:35 PM - 2:55 PM

537.05. Molecularly-defined classes of interneurons linked to locomotor rhythm generation in the mammalian spinal cord

K. J. Dougherty;
Neurobiology and Anatomy, Drexel University College of Medicine, Philadelphia.

Time: Tue. 2:55 PM - 3:15 PM

537.06. Development of molecularly-defined V3 interneuronal subpopulations in the mouse spinal cord

Y. Zhang;
Medical Neuroscience, Dalhousie University, Halifax, NS, CANADA.

Time: Tue. 3:15 PM - 3:35 PM

537.07. Identification of novel spinal cord neuronal types and the developmental mechanisms of their specialization

G. M. Lanuza;
Developmental Neurobiology Lab, Instituto Leloir, Buenos Aires, ARGENTINA.

Time: Tue. 3:35 PM - 4:00 PM

537.08. Closing Remarks

Minisymposium

538. Neural Circuits Supporting Cognitive Maps for Goal-Directed Behavior

Theme H: Cognition

Location: 146A

Time: 11/14/2017 1:30:00 PM - 11/14/2017 4:00:00 PM

Animals must represent various types of information, such as associations between events and outcomes, contextual, and spatial contingencies. These features constitute a cognitive map for goal-directed behavior. Different brain regions including the hippocampus, entorhinal cortex, orbitofrontal cortex, and ventromedial prefrontal cortex have been shown to encode aspects of

this map. This session will bring together recent findings across methods and species to discuss how maps observed in different brain areas may converge to guide behavior.

Time: Tue. 1:30 PM - 4:00 PM

538. Chair

T. Kahnt;
Department of Neurology, Northwestern University, Chicago, IL.

Time: Tue. 1:30 PM - 4:00 PM

538. Co Chair

E. D. Boorman;
Center for Mind and Brain, University of California, Davis, Davis, CA.

Time: Tue. 1:30 PM - 1:35 PM

538.01. Introduction

Time: Tue. 1:35 PM - 1:55 PM

538.02. Prefrontal cortex outcome representations in the context of primate evolution

E. A. Murray;
Laboratory of Neuropsychology, NIMH, NIH, Bethesda, MD.

Time: Tue. 1:55 PM - 2:15 PM

538.03. Representations of specific outcomes in the orbitofrontal cortex

T. Kahnt;
Department of Neurology, Northwestern University, Chicago, IL.

Time: Tue. 2:15 PM - 2:35 PM

538.04. Hippocampal contributions to OFC representations for decision making

A. M. Wikenheiser;
Intramural Research Program, National Institute on Drug Abuse, Baltimore, MD.

Time: Tue. 2:35 PM - 2:55 PM

538.05. Retrospective choice codes for causal learning

E. D. Boorman;
Center for Mind and Brain, University of California, Davis, Davis, CA.

Time: Tue. 2:55 PM - 3:15 PM

538.06. A map of discrete, non-spatial relational knowledge in the human hippocampal-entorhinal cortex

M. Garvert;
Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, UNITED KINGDOM.

Time: Tue. 3:15 PM - 3:35 PM

538.07. Reactivation of associative structure specific outcome responses during prospective evaluation

M. Wang;
Department of Brain and Cognitive Science, University of Rochester, Rochester, NY.

Time: Tue. 3:35 PM - 4:00 PM

538.08. Closing Remarks

Minisymposium

539. Sensation in Action

Theme D: Sensory Systems

Location: 151B

Time: 11/14/2017 1:30:00 PM - 11/14/2017 4:00:00 PM

Under natural conditions, humans constantly engage the sensory system during a myriad of everyday actions: finding food, detecting threats, or exploring. How do sensory systems work during active behaviors? This minisymposium will share novel perspectives of sensory processing during active, multidimensional behavior in different systems (fly vision, rodent vision, audition, somatosensation) and at different processing levels (fly lobula plate, mammalian thalamus and cortex).

Time: Tue. 1:30 PM - 4:00 PM

539. Chair

A. B. Saleem;
Experimental Psychology, University College London, London, UNITED KINGDOM.

Time: Tue. 1:30 PM - 4:00 PM

539. Co Chair

L. Busse;
Biology II, Ludwig-Maximilians-Universität Munich, Munich, GERMANY.

Time: Tue. 1:30 PM - 1:35 PM

539.01. Introduction

Time: Tue. 1:35 PM - 1:55 PM

539.02. Linking visual motion processing with locomotion in the fly *Drosophila melanogaster*

E. Chiappe;
Champalimaud Research Programme, Champalimaud Centre for the Unknown, Lisbon, PORTUGAL.

Time: Tue. 1:55 PM - 2:15 PM

539.03. Projection-specific signals of somatosensation in mouse barrel cortex during active behavior

T. Yamashita;
Nagoya University, Nagoya-Shi, JAPAN.

Time: Tue. 2:15 PM - 2:35 PM

539.04. State-dependent neural dynamics in visual cortex during active behavior

J. A. Cardin;
Department of Neurobiology, Yale University, New Haven, CT.

Time: Tue. 2:35 PM - 2:55 PM

539.05. Thalamic roles in attentional control and perception

M. Halassa;
Psychiatry, Neuroscience and Physiology, NYU Langone Medical Center, New York, NY.

Time: Tue. 2:55 PM - 3:15 PM

539.06. Modulation of auditory cortical processing and active behavioral sound detection by pupil-indexed arousal state

M. J. McGinley;
Neuroscience, Baylor College of Medicine, Houston, TX.

Time: Tue. 3:15 PM - 3:35 PM

539.07. Sensation during locomotion and navigation in the mouse primary visual cortex and beyond

A. B. Saleem;
Experimental Psychology, University College London, London, UNITED KINGDOM.

Time: Tue. 3:35 PM - 4:00 PM

539.08. Closing Remarks

Symposium

628. Experimental Models Versus Reality of Neurological Disease

Theme C: Neurodegenerative Disorders and Injury

Location: Ballroom A

Time: 11/15/2017 8:30:00 AM - 11/15/2017 11:00:00 AM

Experimental models of neurological disease are essential to better understanding pathomechanisms and to finding more effective treatments. Since models cannot reflect all aspects of human disease, they must be carefully selected, and results must be validated with human tissues. This symposium will outline the most recent neuropathological developments; discuss new models for Alzheimer´s disease, ALS/FTLD, prion disease, and stroke; and compare experimental models with real (human) disease.

Time: Wed. 8:30 AM - 11:00 AM

628. Chair

W. Paulus;
University Hospital Muenster, Institute of Neuropathology, Muenster, GERMANY.

Time: Wed. 8:30 AM - 8:35 AM

628.01. Introduction

Time: Wed. 8:35 AM - 9:10 AM

628.02. Alzheimer´s disease: Experimental models and reality

T. M. Wisniewski;
Neurology, New York Univ, Sch Med, New York, NY.

Time: Wed. 9:10 AM - 9:45 AM

628.03. Amyotrophic lateral sclerosis/frontotemporal lobar degeneration: Experimental models and reality

G. M. Halliday;
Ageing and Neurodegeneration, Neuroscience Research Australia and University of New South Wales, Randwick, AUSTRALIA.

Time: Wed. 9:45 AM - 10:20 AM

628.04. Prion disease: Experimental models and reality

S. Brandner;
Department of Neurodegeneration and Division of Neuropathology, Institute of Neurology, University College London, and University College London Hospitals, London, UNITED KINGDOM.

Time: Wed. 10:20 AM - 10:55 AM

628.05. Stroke: Experimental models and reality

L. D. McCullough;
Department of Neurology, University of Texas Health Science Center at Houston, Houston, TX.

Time: Wed. 10:55 AM - 11:00 AM

628.06. Closing Remarks

Symposium

629. The Role of Extra-Suprachiasmatic Nucleus Brain Clocks in Circadian Regulation of Brain Function: Time Matters!

Theme F: Integrative Physiology and Behavior

Location: Ballroom B

Time: 11/15/2017 8:30:00 AM - 11/15/2017 11:00:00 AM

Although much has been learned about the operation of the “master clock” within the hypothalamic suprachiasmatic nucleus (SCN), only recently has there been significant progress in understanding how the SCN orchestrates circadian regulation of various brain processes. This symposium will present recent advances concerning the presence of operational molecular clocks throughout the brain, mechanisms by which they are aligned with the SCN, and their functional relevance for learning, memory, and affective behavior.

Time: Wed. 8:30 AM - 11:00 AM

629. Chair

R. L. Spencer;
Psychology and Neuroscience, University of Colorado at Boulder, Boulder, CO.

Time: Wed. 8:30 AM - 8:35 AM

629.01. Introduction

Time: Wed. 8:35 AM - 9:10 AM

629.02. Prefrontal cortex clock gene expression: Entrainment by corticosterone and role in conditioned fear extinction memory

R. L. Spencer;
Psychology and Neuroscience, University of Colorado at Boulder, Boulder, CO.

Time: Wed. 9:10 AM - 9:45 AM

629.03. Circadian timing and the gating of transcriptional and cell signaling circuits that underlie learning and memory

K. H. Obrietan;
Dept Neurosci, Ohio State University Department of Neuroscience, Columbus, OH.

Time: Wed. 9:45 AM - 10:20 AM

629.04. Circadian oscillations throughout the brain in aging and psychiatric disorders

C. McClung;
Psychiatry and Clinical and Translational Science, University of Pittsburgh School of Medicine, Pittsburgh, PA.

Time: Wed. 10:20 AM - 10:55 AM

629.05. Cellular circadian clocks in the brains of helpless mice

D. K. Welsh;
Psychiatry, University of California San Diego Department of Psychiatry, La Jolla, CA.

Time: Wed. 10:55 AM - 11:00 AM

629.06. Closing Remarks

Minisymposium

630. Updated Perspectives on the Direct- and Indirect- Pathways in Neuropsychiatric Disorders

Theme G: Motivation and Emotion

Location: Ballroom C

Time: 11/15/2017 8:30:00 AM - 11/15/2017 11:00:00 AM

The striatum is implicated in emotional processing; its dysfunction is linked to addiction, depression, and schizophrenia. Striatal projection neurons (SPNs) are segregated into either the Dopamine D1R-expressing direct pathway or the D2-expressing indirect pathway. Molecular, electrophysiology, and imaging tools have yielded surprising discoveries about how these two pathways drive emotional behavior and how this function is perturbed in disease states that give rise to maladaptive behavior.

Time: Wed. 8:30 AM - 11:00 AM

630. Chair

M. Creed;
Department of Pharmacology, University of Maryland School of Medicine, Baltimore, MD.

Time: Wed. 8:30 AM - 11:00 AM

630. Co Chair

Y. M. Kupchik;
Department of Medical Neurobiology, The Hebrew University, Jerusalem, ISRAEL.

Time: Wed. 8:30 AM - 8:35 AM

630.01. Introduction

Time: Wed. 8:35 AM - 8:55 AM

630.02. Striatal and accumbal D2R cellular diversity unveiled by high-throughput translatome analysis: A molecular knowledge database

E. Valjent;
Neurobiology, Institut de Génomique Fonctionnelle INSERM, Montpellier, FRANCE.

Time: Wed. 8:55 AM - 9:15 AM

630.03. Molecular control of D1-MSN dendritic remodeling underlies stress susceptibility

M. Lobo;
Anatomy and Neurobiology, University of Maryland School of Medicine, Baltimore, MD.

Time: Wed. 9:15 AM - 9:35 AM

630.04. Endophenotypes of stress susceptibility in nucleus accumbens D1 and D2 MSN activity

R. C. Bagot;
Department of Psychology, McGill University, Montreal, QC, CANADA.

Time: Wed. 9:35 AM - 9:55 AM

630.05. Cocaine drives divergent synaptic adaptations at inputs from D1- and D2-expressing accumbal neurons in the ventral pallidum.

M. Creed;
Department of Pharmacology, University of Maryland School of Medicine, Baltimore, MD.

Time: Wed. 9:55 AM - 10:15 AM

630.06. Simultaneous monitoring of striatal direct- and indirect-pathway neural activity using spectrally resolved fiber photometry

G. Cui;
NIEHS, National Institutes of Health, Research Triangle Park, NC.

Time: Wed. 10:15 AM - 10:35 AM

630.07. Differential roles of D1-MSN and D2-MSN terminals in the VP in promoting cocaine seeking

Y. M. Kupchik;
Department of Medical Neurobiology, The Hebrew University, Jerusalem, ISRAEL.

Time: Wed. 10:35 AM - 11:00 AM

630.08. Closing Remarks

Minisymposium

631. The Dentate Gyrus: From Microcircuit Function to Information Processing During Behavior

Theme B: Neural Excitability, Synapses, and Glia

Location: 145B

Time: 11/15/2017 8:30:00 AM - 11/15/2017 11:00:00 AM

The dentate gyrus (DG) is the input gate of the hippocampus and translates the rich input stream from the entorhinal cortex into sparse nonoverlapping memories. However, the network mechanisms underlying sparse coding are unknown. This minisymposium bridges the gap between recent *in vivo* and *in vitro* studies to highlight new insight on the role of granule, mossy, and GABAergic cells; their output synapses in sparse coding; and the spatio-temporal emergence of DG population activity during learning.

Time: Wed. 8:30 AM - 11:00 AM

631. Chair

M. Bartos;
Institute for Physiology I, University of Freiburg, Freiburg, GERMANY.

Time: Wed. 8:30 AM - 11:00 AM

631. Co Chair

P. Jonas;
Institute of Science and Technology (IST) Austria, Klosterneuburg, AUSTRIA.

Time: Wed. 8:30 AM - 8:35 AM

631.01. Introduction

Time: Wed. 8:35 AM - 8:55 AM

631.02. Functional imaging of parvalbumin-interneurons during formation of contextual memory engrams in the dentate gyrus and CA1

M. Bartos;
Institute for Physiology I, University of Freiburg, Freiburg, GERMANY.

Time: Wed. 8:55 AM - 9:15 AM

631.03. Sparse coding in identified dentate gyrus granule cells *in vivo*

P. Jonas;
Institute of Science and Technology (IST) Austria, Klosterneuburg, AUSTRIA.

Time: Wed. 9:15 AM - 9:35 AM

631.04. *In vivo* imaging dentate gyrus principal neuron subpopulations during navigation and learning

A. Losonczy;
Neuroscience, Columbia University, New York, NY.

Time: Wed. 9:35 AM - 9:55 AM

631.05. Regulatory mechanisms of dentate gyrus output

I. Soltesz;
School of Medicine, Stanford University, Stanford, CA.

Time: Wed. 9:55 AM - 10:15 AM

631.06. Adult-born neurons modify excitatory synaptic transmission to existing neurons

L. S. Overstreet-Wadiche;
Neurobiology, Univ Alabama Birmingham, Birmingham, AL.

Time: Wed. 10:15 AM - 10:35 AM

631.07. Activity and plasticity of dentate granule cells in freely-moving rats

A. Burgalossi;
Cellular and Synaptic Basis of Behaviour, Werner Reichardt Centre for Integrative Neuroscience (CIN), Tübingen, GERMANY.

Time: Wed. 10:35 AM - 11:00 AM

631.08. Closing Remarks

Minisymposium

632. Stratification of Visceral Pain: New Insight Into the Mechanisms of Peripheral Sensitisation From Animal Models and Human Tissue

Theme D: Sensory Systems

Location: 146A

Time: 11/15/2017 8:30:00 AM - 11/15/2017 11:00:00 AM

Visceral pain is a common complaint inadequately treated by current analgesics. This minisymposium will describe the stratification of patients with visceral pain by the identification of novel, lipid, and protease mediators of peripheral sensitization using patient tissue samples. The session will also describe their novel endosomal and biased GPCR signaling pathways and report how visceral pain may be further stratified by the presence of discrete populations of visceral nociceptors.

Time: Wed. 8:30 AM - 11:00 AM

632. Chair

D. Bulmer;
School of Medicine and Dentistry, Queen Mary University of London, London, UNITED KINGDOM.

Time: Wed. 8:30 AM - 11:00 AM

632. Co Chair

G. Boeckxstaens;
Translational Research Center for Gastrointestinal Disorders (TARGID), University of Leuven, Leuven, BELGIUM.

Time: Wed. 8:30 AM - 8:35 AM

632.01. Introduction

Time: Wed. 8:35 AM - 8:55 AM

632.02. Novel mechanisms of nociception in inflammatory bowel disease

D. Bulmer;
School of Medicine and Dentistry, Queen Mary University of London, London, UNITED KINGDOM.

Time: Wed. 8:55 AM - 9:15 AM

632.03. Peripheral sensitization in patients with irritable bowel syndrome

G. Boeckxstaens;
Translational Research Center for Gastrointestinal Disorders (TARGID), KU Leuven, Leuven, BELGIUM.

Time: Wed. 9:15 AM - 9:35 AM

632.04. Key role for proteases in visceral pain

N. Vergnolle;
Digestive health research institute,, Inserm UMR1220, Toulouse, FRANCE.

Time: Wed. 9:35 AM - 9:55 AM

632.05. Endosomal signaling pathways in visceral pain

N. W. Bunnett;
Department of Surgery, Columbia University in the City of New York, New York.

Time: Wed. 9:55 AM - 10:15 AM

632.06. Stratification of visceral pain using lipidomics

N. Cenac;
Digestive health research institute,, Inserm UMR1220, Toulouse, FRANCE.

Time: Wed. 10:15 AM - 10:35 AM

632.07. Stratification of visceral sensory neurones by single-cell RNA-Seq

J. Hockley;
Department of Pharmacology, University of Cambridge, Cambridge, UNITED KINGDOM.

Time: Wed. 10:35 AM - 11:00 AM

632.08. Closing Remarks

Minisymposium

633. Epigenetic Etiology of Intellectual Disability

Theme A: Development

Location: 151B

Time: 11/15/2017 8:30:00 AM - 11/15/2017 11:00:00 AM

Intellectual disability (ID) is a prevailing condition associated with impaired cognitive and adaptive behavior. Many epigenetic regulators have been genetically associated with ID. Investigations have begun to reveal the molecular and cellular basis of IDs that are linked to epigenetic dysregulation. In this minisymposium, experts will discuss how the altered functions

of histone modifiers, chromatin remodelers, and methyl-DNA binding proteins contribute to impaired neurodevelopment.

Time: Wed. 8:30 AM - 11:00 AM

633. Chair

S. Iwase;
Human Genetics, University of Michigan Medical School, Ann Arbor, MI.

Time: Wed. 8:30 AM - 11:00 AM

633. Co Chair

A. Barco;
Instituto De Neurociencias (UMH-CSIC), San Juan de Alicante, SPAIN.

Time: Wed. 8:30 AM - 8:35 AM

633.01. Introduction

Time: Wed. 8:35 AM - 8:55 AM

633.02. LSD1: An epigenetic link between neuronal plasticity and intellectual disability

E. Battaglioli;
Dept. Medical Biotechnology and Translational Medicine, University of Milan, Milan, ITALY.

Time: Wed. 8:55 AM - 9:15 AM

633.03. The role of histone methylation in synaptic plasticity and intellectual disability

N. Nadif Kasri;
Department of Human Genetics, Radboud UMC, Nijmegen, NETHERLANDS.

Time: Wed. 9:15 AM - 9:35 AM

633.04. Seq-ing epigenetic insights into Rett syndrome

Z. Zhou;
University of Pennsylvania, Philadelphia, PA.

Time: Wed. 9:35 AM - 9:55 AM

633.05. Regulation of learning and memory by the ATRX chromatin remodeling protein

N. Bérubé;
Department of Paediatrics, Western University, Children's Health Research Institute, London, ON, CANADA.

Time: Wed. 9:55 AM - 10:15 AM

633.06. Histone H3K4 methylation dynamics in X-linked intellectual disability, Claes-Jensen type

S. Iwase;
Human Genetics, University of Michigan Medical School, Ann Arbor, MI.

Time: Wed. 10:15 AM - 10:35 AM

633.07. Epigenetic etiology and molecular dissection of Rubinstein-Taybi syndrome

A. Barco;
Instituto De Neurociencias (UMH-CSIC), San Juan de Alicante, SPAIN.

Time: Wed. 10:35 AM - 11:00 AM

633.08. Closing Remarks

Symposium

723. Illuminating Neural Circuits: From Molecules to MRI

Theme C: Neurodegenerative Disorders and Injury

Location: Ballroom A

Time: 11/15/2017 1:30:00 PM - 11/15/2017 4:00:00 PM

The symposium will introduce cutting-edge experimental approaches for visualizing and manipulating neural circuits, novel circuit mechanisms, the role of circuit defects in neurological disease, and therapeutic approaches aimed at manipulating circuit mechanisms. The goal is to better understand the role of neural circuits in normal brain function and how their impairment underlies neurological disease as well as to discuss emerging our ability to use this knowledge to develop therapeutics.

Time: Wed. 1:30 PM - 4:00 PM

723. Chair

J. Lee;
Neurology, Bioengineering, Stanford University, Stanford, CA.

Time: Wed. 1:30 PM - 4:00 PM

723. Co Chair

A. C. Kreitzer;
Physiology and Neurology, Gladstone Institute of Neurological Disease, San Francisco, CA.

Time: Wed. 1:30 PM - 1:35 PM

723.01. Introduction

Time: Wed. 1:35 PM - 2:10 PM

723.02. Function of basal ganglia circuitry in movement and action selection

A. C. Kreitzer;
Physiology and Neurology, Gladstone Institute of Neurological Disease, San Francisco, CA.

Time: Wed. 2:10 PM - 2:45 PM

723.03. Decoding memory in health and Alzheimer's disease

A. C. Singer;
Coulter Department of Biomedical Engineering, Georgia Institute of Technology, Atlanta, GA.

Time: Wed. 2:45 PM - 3:20 PM

723.04. Investigation of global brain circuit mechanisms with cell type specificity

J. Lee;
Neurology, Bioengineering, Stanford University, Stanford, CA.

Time: Wed. 3:20 PM - 3:55 PM

723.05. Central thalamic brain stimulation for arousal regulation

N. Schiff;
Neurology, Weill Cornell Medicine, New York, NY.

Time: Wed. 3:55 PM - 4:00 PM

723.06. Closing Remarks

Symposium

724. Neural Correlates of Consciousness: Progress and Problems

Theme H: Cognition

Location: Ballroom B

Time: 11/15/2017 1:30:00 PM - 11/15/2017 4:00:00 PM

Consciousness research is developing rapidly. Using evidence from brain injury in patients and physiological and behavioral studies in humans and related animals (single neuron, fMRI, EEG, TMS, intracranial recordings), the symposium will highlight how different conscious states and contents arise in the brain. Speakers will discuss different experimental approaches and theoretical frameworks as well as the medical and ethical relevance of this area.

Time: Wed. 1:30 PM - 4:00 PM

724. Chair

J. Storm;
Institute of Basic Medical Science, University of Oslo, Oslo, NORWAY.

Time: Wed. 1:30 PM - 4:00 PM

724. Co Chair

M. Boly;
Department of Neurology and Psychiatry, University of Wisconsin-Madison, Madison, WI.

Time: Wed. 1:30 PM - 1:35 PM

724.01. Introduction

Time: Wed. 1:35 PM - 2:10 PM

724.02. Are the neural correlates of consciousness in the front or in the back of the cerebral cortex?

M. Boly;
Department of Neurology and Psychiatry, University of Wisconsin-Madison, Madison, WI.

Time: Wed. 2:10 PM - 2:45 PM

724.03. Assessing consciousness through cortical perturbations

M. Massimini;
Department of Biomedical and Clinical Sciences, University of Milan, Milan, ITALY.

Time: Wed. 2:45 PM - 3:20 PM

724.04. How to disentangle conscious perception from decision making and visuomotor processes

M. Wilke;
Dept. of Cognitive Neurology, University Medicine Goettingen, Goettingen, GERMANY.

Time: Wed. 3:20 PM - 3:55 PM

724.05. The conscious rodent brain: Ensemble behavior and long-range correlation patterns

C. M. A. Pennartz;
SILS Center for Neuroscience, University of Amsterdam, Amsterdam, NETHERLANDS.

Time: Wed. 3:55 PM - 4:00 PM

724.06. Closing Remarks

Minisymposium

725. After the Data Deluge: Grappling With Transcriptional Complexity in the Brain

Theme I: Techniques

Location: Ballroom C

Time: 11/15/2017 1:30:00 PM - 11/15/2017 4:00:00 PM

Advances in gene expression analysis have vastly improved the scale and diversity of information that can be used to characterize neurons in the brain. In this minisymposium, we will describe how sophisticated analytical approaches exploit large-scale data, particularly at the cellular level, to provide novel insights into the regulation of neuronal identity. A focus will be on how the lessons learned from big data can improve the design and interpretation of smaller scale experiments.

Time: Wed. 1:30 PM - 4:00 PM

725. Chair

J. Gillis;
Stanley Institute for Cognitive Genomics, Cold Spring Harbor Laboratory, Woodbury, NY.

Time: Wed. 1:30 PM - 4:00 PM

725. Co Chair

V. Menon;
Janelia Research Campus, Howard Hughes Medical Institute, Ashburn, VA.

Time: Wed. 1:30 PM - 1:35 PM

725.01. Introduction

Time: Wed. 1:35 PM - 1:55 PM

725.02. Developmental and genetic regulation of the human cortex transcriptome

A. Jaffe;
Functional Genomics and Developmental Neurobiology, Lieber Institute for Brain Development, Baltimore, MD.

Time: Wed. 1:55 PM - 2:15 PM

725.03. Classifying and characterizing single cells using transcriptional and epigenetic analysis

J. Fan;
Department of Biomedical Informatics, Harvard University, Boston, MA.

Time: Wed. 2:15 PM - 2:35 PM

725.04. Identifying cell types in multiple cortical regions using multimodal single-cell data

Z. Yao;
Allen Institute for Brain Science, Seattle, WA.

Time: Wed. 2:35 PM - 2:55 PM

725.05. Assessing the impact of read depth, cell number, and clustering methods on transcriptomic cell type identification

V. Menon;
Janelia Research Campus, Howard Hughes Medical Institute, Ashburn, MA.

Time: Wed. 2:55 PM - 3:15 PM

725.06. Validating neuronal identity through meta-analysis

M. Crow;
Stanley Institute for Cognitive Genomics, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY.

Time: Wed. 3:15 PM - 3:35 PM

725.07. Transcriptomic correlates of neuron electrophysiological diversity

S. Tripathy;
Michael Smith Laboratories, University of British Columbia, Vancouver, BC, CANADA.

Time: Wed. 3:35 PM - 4:00 PM

725.08. Closing Remarks

Minisymposium

726. Dendritic Computation: Linking Dendritic Mechanisms to Circuits and Behavior

Theme B: Neural Excitability, Synapses, and Glia

Location: 146A

Time: 11/15/2017 1:30:00 PM - 11/15/2017 4:00:00 PM

A key function of neuronal dendrites is integrating and transforming synaptic inputs to drive appropriate outputs. This minisymposium will focus on the complexity and physiological relevance of dendritic computations in the brain and will explore dendritic processing in various cell types of the sensory and motor systems as well as spatial navigation. The session will also highlight emerging studies that directly link dendritic mechanisms to neural circuit function and behavior.

Time: Wed. 1:30 PM - 4:00 PM

726. Chair

W. Wei;
University of Chicago, Chicago, IL.

Time: Wed. 1:30 PM - 4:00 PM

726. Co Chair

J. Ding;
Neurosurgery, Stanford University, Palo Alto, CA.

Time: Wed. 1:30 PM - 1:35 PM

726.01. Introduction

Time: Wed. 1:35 PM - 1:55 PM

726.02. Intricacies of synaptic connectivity in the dendrites of pyramidal neurons receiving input from several presynaptic cell types

N. P. Spruston;
Janelia Research Campus, HHMI Janelia Research Campus, Ashburn, VA.

Time: Wed. 1:55 PM - 2:15 PM

726.03. Inhibition enhances neuronal coding of place in hippocampal area CA1

C. Grienberger;
HHMI/ Janelia Research Campus, Ashburn, VA.

Time: Wed. 2:15 PM - 2:35 PM

726.04. The role of dendritic calcium transients in the formation of hippocampal cognitive maps during novel environment exposure

M. Sheffield;
Neurobiology, Northwestern University, Evanston, IL.

Time: Wed. 2:35 PM - 2:55 PM

726.05. Cross-compartmental modulation of starburst amacrine cell dendrites underlies motion computation in the retina

W. Wei;
University of Chicago, Chicago, IL.

Time: Wed. 2:55 PM - 3:15 PM

726.06. Branch specific inhibition of dendritic plateau potential in striatal spiny projection neurons

J. Ding;
Neurosurgery, Stanford University, Stanford, CA.

Time: Wed. 3:15 PM - 3:35 PM

726.07. The role of cortical dendrites during sensory input and perception

L. Palmer;
Neural Network Laboratory, Florey Institute, University of Melbourne, Melbourne, AUSTRALIA.

Time: Wed. 3:35 PM - 4:00 PM

726.08. Closing Remarks

Minisymposium

727. Deep-Layer Projection Neurons of the Neocortex: Specialized Subpopulations Exhibiting Distinct Integration and Output

Theme F: Integrative Physiology and Behavior

Location: 151B

Time: 11/15/2017 1:30:00 PM - 11/15/2017 4:00:00 PM

Charting the six-layered cortical microcircuit dates back to the days of Ramón y Cajal, yet how information is processed by this network remains elusive. This minisymposium will focus on recent advances regarding the distinct subpopulations of deep-layer pyramidal neurons that provide output from this network to various cortical and subcortical targets. Comparing across multiple cortices, this session aims to identify fundamental mechanisms that contribute to the diversity of cortical output channels.

Time: Wed. 1:30 PM - 4:00 PM

727. Chair

N. C. Dembrow;
Physiology and Biophysics, University of Washington, Seattle, WA.

Time: Wed. 1:30 PM - 4:00 PM

727. Co Chair

A. L. Baker;
Department of Molecular & Systems Biology, Geisel School of Medicine at Dartmouth, Lebanon, NH.

Time: Wed. 1:30 PM - 1:35 PM

727.01. Introduction

Time: Wed. 1:35 PM - 1:55 PM

727.02. Interaction between GABAergic cells and projection specific pyramidal cells in the layer 5 of rat frontal cortex

M. Morishima;
Division of Cerebral Circuitry, NIPS, Okazaki, JAPAN.

Time: Wed. 1:55 PM - 2:15 PM

727.03. The synaptic organization of layer 6 cortical projection neurons

J. Kim;
The Solomon H Snyder Department of Neuroscience, Johns Hopkins University, Baltimore, MD.

Time: Wed. 2:15 PM - 2:35 PM

727.04. Dendritic integration properties of layer 5 neurons depend upon their long-range projection target

N. C. Dembrow;
Department of Physiology and Biophysics, University of Washington, Seattle, WA.

Time: Wed. 2:35 PM - 2:55 PM

727.05. Layer 5 cells in visual cortex with defined projections have distinct response properties

A. Juavinett;
Research, Neuroscience, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY.

Time: Wed. 2:55 PM - 3:15 PM

727.06. Motor cortex projection neurons underlying motor planning and movement

N. Li;
Neuroscience, Baylor College of Medicine, Houston, TX.

Time: Wed. 3:15 PM - 3:35 PM

727.07. Inferring long-range projections of L5 pyramidal neurons in human middle temporal gyrus using correlative analyses of gene expression and physiology

B. Kalmbach;
Research Science, Allen Institute for Brain Science, Seattle, WA.

Time: Wed. 3:35 PM - 4:00 PM

727.08. Closing Remarks