When citing an abstract from the 2018 annual meeting, please use the format below.

[Authors]. [Abstract Title]. Program No. XXX.XX. 2018 Neuroscience Meeting Planner. San Diego, CA: Society for Neuroscience, 2018. Online.

Symposium

002. Neuronal Guidance in Health and Disease

Theme A: Development

Location: SDCC 6A

Time: Saturday, November 3, 2018, 1:30 PM - 4:00 PM

Investigation into phylogenetically conserved cellular and molecular mechanisms underlying neuronal guidance and connectivity has greatly advanced over the past three decades. This symposium will address the intersections among several of these advances and human neural development. Select evolutionarily conserved guidance cues, receptors, and cytosolic signaling cascades will be considered, along with how mutations that affect them may alter human neural development.

Time: Saturday, November 3, 2018, 1:30 PM - 4:00 PM

002. Chair

A. L. Kolodkin
Dept Neurosci, Johns Hopkins School of Medicine, Baltimore, MD.

Time: Saturday, November 3, 2018, 1:30 PM – 1:35 PM

002.01. Introduction

Time: Saturday, November 3, 2018, 1:35 PM – 2:10 PM

002.02. Revisiting Axon guidance at the CNS midline

A. Chedotal
INSERM/CNRS, Institut De La Vision, Paris, FRANCE.

Time: Saturday, November 3, 2018, 2:10 PM – 2:45 PM

002.03. Linking guidance cues to changes in neuronal form, function, and dysfunction

J. R. Terman
Neuroscience and Pharmacology, University of Texas Southwestern Medical Center, Dallas, TX.

Time: Saturday, November 3, 2018, 2:45 PM – 3:20 PM

002.04. Neural connectivity and cranial nerve disorders

E. C. Engle
Neurology and Ophthalmology, Harvard Medical School / Boston Children's Hospital, Boston, MA.

Time: Saturday, November 3, 2018, 3:20 PM – 3:55 PM

002.05. The genetics of human cortical connectivity

C. A. Walsh
Genetics, Harvard Medical School, Boston, MA.

Time: Saturday, November 3, 2018, 3:55 PM – 4:00 PM

002.06. Closing Remarks

Minisymposium

003. New Observations in Neuroscience Using Superresolution Microscopy

Theme I: Techniques

Location: SDCC 6B

Time: Saturday, November 3, 2018, 1:30 PM - 4:00 PM

Superresolution microscopy (SM) techniques overcome optical limitations, and several new observations using SM have had revolutionary impact on neuroscience. Several types of SM have been developed (e.g., STED, SIM, PALM, STORM), each with special features. This minisymposium will discuss the new structural and functional information about specific important molecules in neuroscience obtained with SM.

Time: Saturday, November 3, 2018, 1:30 PM - 4:00 PM

003. Chair

M. Igarashi
Department of Neurochemistry and Molecular Cell Biology, Niigata University, Niigata, JAPAN.

Time: Saturday, November 3, 2018, 1:30 PM - 1:35 PM

003.01. Introduction

Time: Saturday, November 3, 2018, 1:35 PM - 1:55 PM

003.02. New relationships between F-actin organization and membrane trafficking in the growth cone revealed by SIM

M. Nozumi
Department of Neurochemistry and Molecular Cell Biology, Niigata Univ, Grad Sch Med Dent Sci, Niigata, JAPAN.

Time: Saturday, November 3, 2018, 1:55 PM - 2:15 PM

003.03. Visualizing membrane dynamics of hemi-fusion, fusion pore opening and closure by STED microscopy

L. Wu
Synaptic Transmission Section, National Institute of Neurological Disorders and Stroke, NIH, Bethesda, MD.

Time: Saturday, November 3, 2018, 2:15 PM - 2:35 PM

003.04. Super-resolution microscopy to study GABAergic synaptic plasticity at the single molecule level

F. Cella Zanacchi
Department of Nanophysics, Fondazione Istituto Italiano di Tecnologia, Genova, ITALY.

Time: Saturday, November 3, 2018, 2:35 PM - 2:55 PM

003.05. Correlation of physiological, morphological and molecular parameters by combined patch-clamp and STORM imaging at hippocampal synapses

I. Katona
Department of Molecular and Developmental Neurobiology, Institute of Experimental Medicine (KOKI), Budapest, HUNGARY.

Time: Saturday, November 3, 2018, 2:55 PM - 3:15 PM

003.06. New fluorescent probes suitable for superresolution microscopy

P. Xu
Key Laboratory of Noncoding RNA, Institute of Biophysics, Chinese Academy of Sciences, Beijing, CHINA.

Time: Saturday, November 3, 2018, 3:15 PM - 3:35 PM

003.07. Expansion Microscopy

E. S. Boyden
Department of biological engineering and brain and cognitive sciences, Media Lab, Massachusetts Institute of Technology, Cambridge, MA.

Time: Saturday, November 3, 2018, 3:35 PM - 4:00 PM

003.08. Closing Remarks

Minisymposium

004. Neuronal Mechanisms for Prepulse Inhibition: Comparative Approaches From Sensory to Cognition

Theme F: Integrative Physiology and Behavior

Location: SDCC 6C

Time: Saturday, November 3, 2018, 1:30 PM - 4:00 PM

Prepulse inhibition (PPI) is a measure for sensorimotor gating that has been studied across species, and PPI deficits are found in several psychiatric and neurological disorders. This minisymposium will provide a rare comparative perspective on neural mechanisms underlying PPI. Covering work from invertebrates to humans using cutting-edge approaches, the minisymposium will emphasize how comparative studies have advanced our understanding of PPI mechanisms and regulatory pathways.

Time: Saturday, November 3, 2018, 1:30 PM - 4:00 PM

004. Chair

T. Preuss
Psychology, City University of New York, Hunter College, New York, NY.

Time: Saturday, November 3, 2018, 1:30 PM - 4:00 PM

004. Co Chair

S. Schmid
University of Western Ontario, London, ON, CANADA.

Time: Saturday, November 3, 2018, 1:30 PM - 1:35 PM

004.01. Introduction

Time: Saturday, November 3, 2018, 1:35 PM - 1:55 PM

004.02. The role of midbrain nuclei in PPI: Revisiting the cholinergic hypothesis

S. Schmid
University of Western Ontario, London, ON, CANADA.

Time: Saturday, November 3, 2018, 1:55 PM - 2:15 PM

004.03. Shining light on an amygdala-brainstem pathway important for prepulse inhibition

K. Fenelon
Biological Sciences, University of Massachusetts, Amherst, MA.

Time: Saturday, November 3, 2018, 2:15 PM - 2:35 PM

004.04. Glutamatergic interneurons mediate long interstimulus interval prepulse inhibition via presynaptic inhibition

H. A. Burgess
Division of Developmental Biology, National Institute of Child Health and Human Development, NIH, Bethesda, MD.

Time: Saturday, November 3, 2018, 2:35 PM - 2:55 PM

004.05. Cellular mechanisms of PPI in the startle circuit of fish

T. Preuss
Psychology, City University of New York, Hunter College, New York, NY.

Time: Saturday, November 3, 2018, 2:55 PM - 3:15 PM

004.06. Cellular mechanisms of PPI in an invertebrate model

W. N. Frost
Dept Cell Biology and Anatomy, The Chicago Medical School, North Chicago, IL.

Time: Saturday, November 3, 2018, 3:15 PM - 3:35 PM

004.07. Neuromodulatory effects on prepulse inhibition in psychiatric conditions

S. Kohl
Department of Psychiatry and Psychotherapy, University of Cologne, Cologne, GERMANY.

Time: Saturday, November 3, 2018, 3:35 PM - 4:00 PM

004.08. Closing Remarks

Minisymposium

005. How to Get Out of Harm's Way: New Insight Across Multiple Species Into the Neural Mechanisms of Visually Guided Collision Avoidance

Theme D: Sensory Systems

Location: SDCC 6E

Time: Saturday, November 3, 2018, 1:30 PM - 4:00 PM

Visually guided collision avoidance is critical to survival for many animals. Recently, common neural rules governing such behaviors have unexpectedly been identified across a wide range of species, as different as fruit flies and mice. This minisymposium will summarize shared themes and species-specific advances in understanding the biophysics, neural circuitry, brain areas, and sensorimotor programs that implement collision avoidance behaviors across species from insects to primates.

Time: Saturday, November 3, 2018, 1:30 PM - 4:00 PM

005. Chair

F. Gabbiani
Baylor College of Medicine, Houston, TX.

Time: Saturday, November 3, 2018, 1:30 PM - 4:00 PM

005. Co Chair

F. Engert
Molecular and Cellular Biology, Harvard University, Boston, MA.

Time: Saturday, November 3, 2018, 1:30 PM - 1:35 PM

005.01. Introduction

Time: Saturday, November 3, 2018, 1:35 PM - 1:55 PM

005.02. Escapes and hunting in larval zebrafish

F. Engert
Molecular and Cellular Biology, Harvard University, Boston, MA.

Time: Saturday, November 3, 2018, 1:55 PM - 2:15 PM

005.03. The role of parallel feature integration in selecting collision avoidance behaviors

C. R. von Reyn
School of Biomedical Engineering, Science and Health Systems, Drexel University, Philadelphia, PA.

Time: Saturday, November 3, 2018, 2:15 PM - 2:35 PM

005.04. The non-human primate cortical network for peripersonal space coding and prediction of impact onto the body

S. Ben Hamed
Institut des Sciences Cognitives Marc Jeannerod, Bron Cedex, FRANCE.

Time: Saturday, November 3, 2018, 2:35 PM - 2:55 PM

005.05. Biophysics of object segmentation for collision detection

R. B. Dewell
Dept of Neuroscience, Baylor College of Medicine, Houston, TX.

Time: Saturday, November 3, 2018, 2:55 PM - 3:15 PM

005.06. Divergent midbrain circuits orchestrate dimorphic defensive behaviors in mice

P. Cao
Neurobiology, National Institute of Biological Sciences, Beijing, CHINA.

Time: Saturday, November 3, 2018, 3:15 PM - 3:35 PM

005.07. Visual threat assessment and reticulospinal encoding of calibrated responses in larval zebrafish

M. A. MacIver
Mechanical Engineering/Neuroscience, Northwestern University, Evanston, IL.

Time: Saturday, November 3, 2018, 3:35 PM - 4:00 PM

005.08. Closing Remarks

Minisymposium

006. Latent Factors and Dynamics in Motor Cortex and Their Application to Brain-Machine Interfaces

Theme E: Motor Systems

Location: SDCC 28A

Time: Saturday, November 3, 2018, 1:30 PM - 4:00 PM

Increasing evidence suggests that the activity of large populations of neurons in motor cortical areas exhibits low-dimensional structure that obeys dynamic rules. A better understanding of this structure and its dynamics is shedding new light on how motor cortex commands muscles and how different cortical areas interact. Further, these features have critical implications for designing robust, versatile brain-machine interfaces that restore function to people with paralysis.

Time: Saturday, November 3, 2018, 1:30 PM - 4:00 PM

006. Chair

C. Pandarinath
Biomedical Engineering, Emory University, Georgia Institute of Technology, Atlanta, GA.

Time: Saturday, November 3, 2018, 1:30 PM - 1:35 PM

006.01. Introduction

Time: Saturday, November 3, 2018, 1:35 PM - 1:55 PM

006.02. Motor cortex embeds muscle-like commands in an untangled population response

A. A. Russo
Columbia University, New York, NY.

Time: Saturday, November 3, 2018, 1:55 PM - 2:15 PM

006.03. Neural dynamics of bimanual control

K. C. Ames
Neuroscience, Columbia University, New York, NY.

Time: Saturday, November 3, 2018, 2:15 PM - 2:35 PM

006.04. Inferring single-trial neural population dynamics using sequential auto-encoders

C. Pandarinath
Biomedical Engineering, Emory University and the Georgia Institute of Technology, Atlanta, GA.

Time: Saturday, November 3, 2018, 2:35 PM - 2:55 PM

006.05. Neural population dynamics are stable during repeated task execution over several weeks

A. Farshchiansadegh
Physiology, Northwestern University, Chicago, IL.

Time: Saturday, November 3, 2018, 2:55 PM - 3:15 PM

006.06. A cryptography-based approach for movement decoding

E. L. Dyer
Biomedical Engineering, Georgia Institute of Technology, Atlanta, GA.

Time: Saturday, November 3, 2018, 3:15 PM - 3:35 PM

006.07. Single-trial neural dynamics and their applications to brain-machine interfaces

J. Kao
Electrical Engineering, University of California, Los Angeles, Los Angeles, CA.

Time: Saturday, November 3, 2018, 3:35 PM - 4:00 PM

006.08. Closing Remarks

Minisymposium

007. Neurocognitive Development of Motivated Behavior

Theme G: Motivation and Emotion

Location: SDCC 29D

Time: Saturday, November 3, 2018, 1:30 PM - 4:00 PM

Over the course of development, the neurocognitive processes that support the ability to anticipate and respond to rewards or threats in the environment change markedly. This

minisymposium will bring together recent cross-species research characterizing the typical development of the neural circuits and cognitive processes involved in the control of threat- and reward-motivated behavior and the alteration of these trajectories by experiential factors such as early-life stress.

Time: Saturday, November 3, 2018, 1:30 PM - 4:00 PM

007. Chair

C. A. Hartley
Psychology, New York University, New York, NY.

Time: Saturday, November 3, 2018, 1:30 PM - 4:00 PM

007. Co Chair

D. G. Gee
Psychology, Yale University, New Haven, CT.

Time: Saturday, November 3, 2018, 1:30 PM - 1:35 PM

007.01. Introduction

Time: Saturday, November 3, 2018, 1:35 PM - 1:55 PM

007.02. Learned safety as a mechanism to augment fear regulation in adolescent mice

H. C. Meyer
Psychiatry, Weill Cornell Medicine, New York, NY.

Time: Saturday, November 3, 2018, 1:55 PM - 2:15 PM

007.03. Dynamic changes in threat and safety learning across human development

D. G. Gee
2 Hillhouse Ave, Yale University, New Haven, CT.

Time: Saturday, November 3, 2018, 2:15 PM - 2:35 PM

007.04. Context-specific neurodevelopmental trajectories of mesolimbic systems in adolescence

V. P. Murty
Psychology, Temple University, Philadelphia, PA.

Time: Saturday, November 3, 2018, 2:35 PM - 2:55 PM

007.05. The neural mechanisms underlying the influence of pubertal testosterone on adolescent impulsivity

W. Van Den Bos
Max Planck Institute for Human Development in Berlin, University of Amsterdam, Amsterdam, NETHERLANDS.

Time: Saturday, November 3, 2018, 2:55 PM - 3:15 PM

007.06. Early life stress has asymmetric effects on cortical and subcortical development

K. G. Bath
CLPS, Brown University, Providence, RI.

Time: Saturday, November 3, 2018, 3:15 PM - 3:35 PM

007.07. Early life stress alters neural processing of reward and punishment

C. Johnson
Molecular and Cellular Biology, Harvard University, Cambridge, MA.

Time: Saturday, November 3, 2018, 3:35 PM - 4:00 PM

007.08. Closing Remarks

Symposium

093. Multiscale Computer Modeling of Neural Circuits in Health and Disease

Theme F: Integrative Physiology and Behavior

Location: SDCC 6A

Time: Sunday, November 4, 2018, 8:30 AM - 11:00 AM

Brain function depends on interactions across multiple temporal and spatial scales from molecules and synapses up to interconnected brain areas. Mechanistic multiscale modeling provides the means to organize and understand the cross-scale interactions to explain how brains and other neural systems work or fail. Computational modeling also allows us to bridge the gap between mechanism and phenomenology, from anatomy and dynamics to behavior and cognition.

Time: Sunday, November 4, 2018, 8:30 AM - 11:00 AM

093. Chair

W. W. Lytton
State University of New York, Downstate Medical Center, Brooklyn, NY.

Time: Sunday, November 4, 2018, 8:30 AM - 11:00 AM

093. Co Chair

C. Bernard
Physiology, INSERM, Marseille, FRANCE.

Time: Sunday, November 4, 2018, 8:30 AM - 8:35 AM

093.01. Introduction

Time: Sunday, November 4, 2018, 8:35 AM - 9:10 AM

093.02. Modeling to explore individual variability and resilience to perturbation

E. Marder
Volen Center and Biology Department, Brandeis University, Waltham, MA.

Time: Sunday, November 4, 2018, 9:10 AM - 9:45 AM

093.03. Understanding epilepsy across spatial and time scales

C. Bernard
Physiology, INSERM Institut de Neuroscience des Systemes, Marseille, FRANCE.

Time: Sunday, November 4, 2018, 9:45 AM - 10:20 AM

093.04. Multiscale modeling of brain disease

W. W. Lytton
State University of New York, Downstate Medical Center, Brooklyn, NY.

Time: Sunday, November 4, 2018, 10:20 AM - 10:55 AM

093.05. Mechanisms underlying global traveling waves in human cerebral cortex

T. J. Sejnowski
Salk Institute, La Jolla, CA.

Time: Sunday, November 4, 2018, 10:55 AM - 11:00 AM

093.06. Closing Remarks

Symposium

094. Specific Basal Forebrain-Cortical Cholinergic Circuits Coordinate Cognitive Operations

Theme H: Cognition

Location: SDCC 6B

Time: Sunday, November 4, 2018, 8:30 AM - 11:00 AM

The basal forebrain (BF) cholinergic projections, once viewed as a diffuse system, is emerging as highly specific in its connectivity based on molecular genetics as well as functional and quantitative anatomical studies. The BF can both rapidly and selectively modulate activity of specific circuits and coordinate ACh release in multiple areas related to particular aspects of cognitive processing. This symposium presents new approaches and findings from studies of the function and dysfunction of this system.

Time: Sunday, November 4, 2018, 8:30 AM - 11:00 AM

094. Chair

L. Zaborszky
Rutgers, The State University of New Jersey, Newark, NJ.

Time: Sunday, November 4, 2018, 8:30 AM - 11:00 AM

094. Co Chair

G. R. Poe
Department of Integrative Biology and Physiology, University of California, Los Angeles, Los Angeles, CA.

Time: Sunday, November 4, 2018, 8:30 AM - 8:35 AM

094.01. Introduction

Time: Sunday, November 4, 2018, 8:35 AM - 9:10 AM

094.02. Functional organization of the basal forebrain cholinergic space in rodents and humans

L. Zaborszky
Rutgers, The State University of New Jersey, Newark, NJ.

Time: Sunday, November 4, 2018, 9:10 AM - 9:45 AM

094.03. Cholinergic shaping of neural dynamics and adaptive behavior

A. Chiba
Department of Cognitive Science, University of California, La Jolla, CA.

Time: Sunday, November 4, 2018, 9:45 AM - 10:20 AM

094.04. Mapping the cholinergic engram of fear and anxiety

L. W. Role
Neurobiology, Stony Brook University, Stony Brook, NY.

Time: Sunday, November 4, 2018, 10:20 AM - 10:55 AM

094.05. Cholinergic neuromodulation and cortical function

M. E. Hasselmo
Psychological and Brain Sciences, Boston University, Boston, MA.

Time: Sunday, November 4, 2018, 10:55 AM - 11:00 AM

094.06. Closing Remarks

Minisymposium

095. Computational Affective Neuroscience: Algorithms for Survival

Theme G: Motivation and Emotion

Location: SDCC 6C

Time: Sunday, November 4, 2018, 8:30 AM - 11:00 AM

Emotions play a central role in adaptive behavior across the animal kingdom but are conceptualized in divergent and often imprecise ways. Researchers have recently adopted computational approaches to study a range of emotional phenomena from behavior to feelings, and to use computational models to interrogate the underlying neural circuits. This minisymposium will focus on how computational models can explain the role of emotions in adaptive behavior, both in humans and nonhuman animals.

Time: Sunday, November 4, 2018, 8:30 AM - 11:00 AM

095. Chair

R. B. Rutledge
Max Planck UCL Centre for Computational Psychiatry, University College London, London, UNITED KINGDOM.

Time: Sunday, November 4, 2018, 8:30 AM - 11:00 AM

095. Co Chair

D. R. Bach
University of Zurich, Zurich, SWITZERLAND.

Time: Sunday, November 4, 2018, 8:30 AM - 8:35 AM

095.01. Introduction

Time: Sunday, November 4, 2018, 8:35 AM - 8:55 AM

095.02. A cognitive-computational model for action selection under threat

D. R. Bach
University of Zurich, Zurich, SWITZERLAND.

Time: Sunday, November 4, 2018, 8:55 AM - 9:15 AM

095.03. Interrogation of a brain-wide fear memory network in mice

G. Vetere
Brain Plasticity Unit - ESPCI, Paris, FRANCE.

Time: Sunday, November 4, 2018, 9:15 AM - 9:35 AM

095.04. Statistics, structure, and representation in neural circuits for emotional memories

T. Madarasz
Nuffield Department of Clinical Neurosciences, University of Oxford, Oxford, UNITED KINGDOM.

Time: Sunday, November 4, 2018, 9:35 AM - 9:55 AM

095.05. Computation of decision policies for avoiding starvation and predation in the human dorsomedial prefrontal cortex and hippocampus

C. W. Korn
Institute for Systems Neuroscience, University Medical Center Hamburg-Eppendorf, Hamburg, GERMANY.

Time: Sunday, November 4, 2018, 9:55 AM - 10:15 AM

095.06. Instructed knowledge shapes neural and subjective responses during aversive learning

L. Y. Atlas
NCCIH, NIH, Bethesda, MD.

Time: Sunday, November 4, 2018, 10:15 AM - 10:35 AM

095.07. A neurocomputational model for mood instability and reward dysregulation

R. B. Rutledge
Max Planck UCL Centre for Computational Psychiatry, University College London, London, UNITED KINGDOM.

Time: Sunday, November 4, 2018, 10:35 AM - 11:00 AM

095.08. Closing Remarks

Minisymposium

096. The Dynamic Interaction of Vision and Eye Movements

Theme E: Motor Systems

Location: SDCC 6E

Time: Sunday, November 4, 2018, 8:30 AM - 11:00 AM

A resurgence in the study of eye movements and visual perception has been driven by new experimental approaches (data modeling, the use of clinical populations, and simultaneous recordings of neuronal populations) and comparisons between primate models of vision (humans, macaques, and marmosets). This minisymposium will use these innovations to reveal insight into the effects of exploratory (saccades) and tracking (smooth pursuit) eye movements on vision, cognition, and motor control.

Time: Sunday, November 4, 2018, 8:30 AM - 11:00 AM

096. Chair

J. P. Mayo
Dept. of Neurobiology, Duke University, Durham, NC.

Time: Sunday, November 4, 2018, 8:30 AM - 8:35 AM

096.01. Introduction

Time: Sunday, November 4, 2018, 8:35 AM - 8:55 AM

096.02. Smooth pursuit eye movements as a model of visual prediction

M. Spering
Ophthalmology & Visual Sciences, The University of British Columbia, Vancouver, BC, CANADA.

Time: Sunday, November 4, 2018, 8:55 AM - 9:15 AM

096.03. Smooth pursuit without foveal vision

N. Shanidze
Smith-Kettlewell Eye Research Institute, San Francisco, CA.

Time: Sunday, November 4, 2018, 9:15 AM - 9:35 AM

096.04. The interaction of saccades and pursuit during tracking in marmosets

J. Pattadkal
Institute for Neuroscience, The University of Texas at Austin, Austin, TX.

Time: Sunday, November 4, 2018, 9:35 AM - 9:55 AM

096.05. Sensorimotor control of smooth pursuit

S. Glasauer
Ludwig-Maximilian-University, Munich, GERMANY.

Time: Sunday, November 4, 2018, 9:55 AM - 10:15 AM

096.06. The relative contributions of area MT and the frontal eye fields to smooth pursuit

J. P. Mayo
Dept. of Neurobiology, Duke University, Durham, NC.

Time: Sunday, November 4, 2018, 10:15 AM - 10:35 AM

096.07. Population codes for eye movements in the frontal eye fields

M. A. Smith
Ophthalmology, University of Pittsburgh, Pittsburgh, PA.

Time: Sunday, November 4, 2018, 10:35 AM - 11:00 AM

096.08. Closing Remarks

Minisymposium

097. Advances in Enteric Neurobiology: The "Brain" in the Gut in Health and Disease

Theme B: Neural Excitability, Synapses, and Glia

Location: SDCC 28A

Time: Sunday, November 4, 2018, 8:30 AM - 11:00 AM

The enteric nervous system (ENS) is a large, complex division of the peripheral nervous system that regulates many digestive, immune, hormonal, and metabolic functions. This minisymposium will highlight the latest advances in enteric neurobiology and focus on new model systems for investigating ENS development, mechanisms of adult neurogenesis, enteric glial biology, and the impact of aging on the ENS, as well as the dynamic interactions among microbiota, immune cells, neurons, and glia in the gut.

Time: Sunday, November 4, 2018, 8:30 AM - 11:00 AM

097. Chair

M. Rao
Pediatrics, Columbia University Medical Center, New York City, NY.

Time: Sunday, November 4, 2018, 8:30 AM - 11:00 AM

097. Co Chair

S. Kulkarni
Medicine, Johns Hopkins University, Baltimore, MD.

Time: Sunday, November 4, 2018, 8:30 AM - 8:35 AM

097.01. Introduction

Time: Sunday, November 4, 2018, 8:35 AM - 8:55 AM

097.02. Zebrafish enteric nervous system development and function: From epigenetics to gut motility and regeneration

J. Ganz
Integrative Biology, Michigan State University, East Lansing, MI.

Time: Sunday, November 4, 2018, 8:55 AM - 9:15 AM

097.03. Adult enteric neurogenesis in health and disease

S. Kulkarni
Medicine, Johns Hopkins School of Medicine, Baltimore, MD.

Time: Sunday, November 4, 2018, 9:15 AM - 9:35 AM

097.04. Enterochromaffin-mediated chemosensation controls gut serotonin release and enteric nerve activation

J. Bayrer
Pediatrics, University of California, San Francisco, San Francisco, CA.

Time: Sunday, November 4, 2018, 9:35 AM - 9:55 AM

097.05. Neuron-glia interactions in the gastrointestinal tract

M. Rao
Pediatrics, Columbia University, New York, NY.

Time: Sunday, November 4, 2018, 9:55 AM - 10:15 AM

097.06. ENS-associated macrophages: “Microglia” of the gut

M. Bogunovic
Microbiology and Immunology, Penn State University College of Medicine and Milton S. Hershey Medical Center, Hershey, PA.

Time: Sunday, November 4, 2018, 10:15 AM - 10:35 AM

097.07. Age-dependent changes in macrophages drives inflammation-mediated degeneration of the enteric nervous system

L. Becker
Medicine, Stanford University, Stanford, CA.

Time: Sunday, November 4, 2018, 10:35 AM - 11:00 AM

097.08. Closing Remarks

Minisymposium

098. Molecular Mechanisms Underpinning Dopamine Neuron Development, Diversity, and Vulnerability

Theme A: Development

Location: SDCC 29D

Time: Sunday, November 4, 2018, 8:30 AM - 11:00 AM

This minisymposium will cover topics including embryonic fate specification events, migration, and axon guidance that ultimately result in a multifunctional, heterogeneous, midbrain dopaminergic system.

Time: Sunday, November 4, 2018, 8:30 AM - 11:00 AM

098. Chair

R. Awatramani
Neurology, Northwestern University, Chicago, IL.

Time: Sunday, November 4, 2018, 8:30 AM - 11:00 AM

098. Co Chair

S. Blaess
Institute of Reconstructive Neurobiology, University of Bonn, Bonn, GERMANY.

Time: Sunday, November 4, 2018, 8:30 AM - 8:35 AM

098.01. Introduction

Time: Sunday, November 4, 2018, 8:35 AM - 8:55 AM

098.02. Genetic approaches toward defining midbrain dopamine neuron diversity

R. Awatramani
Neurology, Northwestern University, Chicago, IL.

Time: Sunday, November 4, 2018, 8:55 AM - 9:15 AM

098.03. Molecular mechanisms underlying the diversification and migration of midbrain dopaminergic neurons

S. Blaess
Institute of Reconstructive Neurobiology, University of Bonn, Bonn, GERMANY.

Time: Sunday, November 4, 2018, 9:15 AM - 9:35 AM

098.04. Dissecting dopamine neuron subset-specific axon guidance and cell migration mechanisms

J. Pasterkamp
dept Translational Neuroscience, University Medical Center Utrecht, Utrecht, NETHERLANDS.

Time: Sunday, November 4, 2018, 9:35 AM - 9:55 AM

098.05. Establishment of dopaminergic neuronal connectivity during embryonic development

L. Panman
MRC Toxicology Unit, Leicester, UNITED KINGDOM.

Time: Sunday, November 4, 2018, 9:55 AM - 10:15 AM

098.06. Mechanisms of dopaminergic neural circuit formation

M. Levesque
Department of Psychiatry and Neurosciences, University of Laval, Quebec City, QC, CANADA.

Time: Sunday, November 4, 2018, 10:15 AM - 10:35 AM

098.07. CRISPR-Cas9 screens to highlight novel neuroprotective pathways in mouse and human midbrain dopamine neurons

E. Metzakopian
Genome Campus, UK Dementia Research Institute, Cambridge, UNITED KINGDOM.

Time: Sunday, November 4, 2018, 10:35 AM - 11:00 AM

098.08. Closing Remarks

Symposium

176. Local Field Potentials and Deep Brain Stimulation

Theme I: Techniques

Location: SDCC 6A

Time: Sunday, November 4, 2018, 1:30 PM - 4:00 PM

This symposium will provide an integrated story of scientifically driven clinical translation in deep brain stimulation (DBS) using local field potentials (LFPs). The talks will span from the basic science and fundamentals of LFP signals, to techniques and strategies for performing the clinical research necessary to define the appropriate LFP biomarkers, to direct application of adaptive DBS algorithms in clinical practice.

Time: Sunday, November 4, 2018, 1:30 PM - 4:00 PM

176. Chair

C. C. McIntyre
Case Western Reserve University, Lakewood, OH.

Time: Sunday, November 4, 2018, 1:30 PM - 1:35 PM

176.01. Introduction

Time: Sunday, November 4, 2018, 1:35 PM - 2:10 PM

176.02. Biophysics of local field potentials

C. C. McIntyre
Case Western Reserve University, Lakewood, OH.

Time: Sunday, November 4, 2018, 2:10 PM - 2:45 PM

176.03. Identification of clinically relevant LFP biomarkers

A. Kuhn
Neurology, Charite, Berlin, GERMANY.

Time: Sunday, November 4, 2018, 2:45 PM - 3:20 PM

176.04. Chronic recording of LFPs in humans

H. Bronte-Stewart
Department of Neurology, Stanford University, Stanford, CA.

Time: Sunday, November 4, 2018, 3:20 PM - 3:55 PM

176.05. Deployment of adaptive DBS

P. Brown
Neurology, University of Oxford, Oxford, UNITED KINGDOM.

Time: Sunday, November 4, 2018, 3:55 PM - 4:00 PM

176.06. Closing Remarks

Symposium

177. Blood-Brain Barrier in Health and Disease: Role in Neurodegeneration, CNS Autoimmunity, and Gene Transfer

Theme F: Integrative Physiology and Behavior

Location: SDCC 6B

Time: Sunday, November 4, 2018, 1:30 PM - 4:00 PM

This symposium summarizes current advances on the role of the blood-brain barrier (BBB) in health and disease, including major human neurodegenerative disorders, such as Alzheimer's disease and neuroimmune disease. It highlights single-cell approaches to understanding the role of brain vasculature in health and CNS disorders; cellular and molecular mechanisms at the BBB causing neurodegeneration and CNS autoimmunity; and gene transfer across the BBB to treat neurodegenerative and CNS disorders.

Time: Sunday, November 4, 2018, 1:30 PM - 4:00 PM

177. Chair

B. V. Zlokovic
Zilkha Neurogenetic Institute, Keck School of Medicine of the University of Southern California, Los Angeles, CA.

Time: Sunday, November 4, 2018, 1:30 PM - 1:35 PM

177.01. Introduction

Time: Sunday, November 4, 2018, 1:35 PM - 2:10 PM

177.02. Blood-brain barrier: Structure, function, and role in neurodegeneration

B. V. Zlokovic
Zilkha Neurogenetic Institute, Keck School of Medicine of the University of Southern California, Los Angeles, CA.

Time: Sunday, November 4, 2018, 2:10 PM - 2:45 PM

177.03. Molecular definition of the blood-brain barrier and cerebral blood vessels: Cell types and zonation in the brain vasculature

C. Betsholtz
Integrated Cardio Metabolic Centre, Karolinska Institutet, Huddinge, SWEDEN.

Time: Sunday, November 4, 2018, 2:45 PM - 3:20 PM

177.04. Blood-brain barrier crosstalk with immune cells determines entry of immune cells in the CNS during health and disease

R. Klein
Departments of Medicine, Anatomy & Neurobiology, Pathology & Immunology, Washington University School of Medicine in St. Louis, St. Louis, MO.

Time: Sunday, November 4, 2018, 3:20 PM - 3:55 PM

177.05. Gene transfer across the blood-brain barrier to modulate mammalian neurons and treat neurodegenerative and other CNS disorders

V. Gradinaru
Biology and Biological Engineering, CALTECH, Pasadena, CA.

Time: Sunday, November 4, 2018, 3:55 PM - 4:00 PM

177.06. Closing Remarks

Minisymposium

178. High-Level Cognition in Low-Level Brain Regions

Theme H: Cognition

Location: SDCC 6C

Time: Sunday, November 4, 2018, 1:30 PM - 4:00 PM

Mounting evidence now contests the idea that high-level brain regions such as the medial temporal lobe engage only in high-level functions like declarative memory. This challenges the broader assumption that the brain comprises discrete anatomical units specialized for distinct cognitive functions. This minisymposium extends that challenge by asking the question: Can high-level cognitive functions such as recognition memory, recall, and spatial cognition be mediated by low-level cortical regions?

Time: Sunday, November 4, 2018, 1:30 PM - 4:00 PM

178. Chair

R. A. Cowell
Psychological and Brain Sciences, University of Massachusetts, Amherst, MA.

Time: Sunday, November 4, 2018, 1:30 PM - 1:35 PM

178.01. Introduction

Time: Sunday, November 4, 2018, 1:35 PM - 1:55 PM

178.02. How is memory organized? Memory Systems versus the Representational-Hierarchical View

T. J. Bussey
Department of Physiology and Pharmacology, Western University, London, ON, CANADA.

Time: Sunday, November 4, 2018, 1:55 PM - 2:15 PM

178.03. Visual recollection: Episodic memory-like retrieval of visual information outside of hippocampus

R. A. Cowell
Psychological and Brain Sciences, University of Massachusetts, Amherst, MA.

Time: Sunday, November 4, 2018, 2:15 PM - 2:35 PM

178.04. How primary sensory cortex retrieves memory to detect novelty

S. F. Cooke
Department of Basic and Clinical Neuroscience, Kings College London, London, UNITED KINGDOM.

Time: Sunday, November 4, 2018, 2:35 PM - 2:55 PM

178.05. The role of early visual regions in the construction of false memories for spatial location

J. M. Karanian
Psychology, John Jay College of Criminal Justice, The City University of New York, New York, NY.

Time: Sunday, November 4, 2018, 2:55 PM - 3:15 PM

178.06. Combined integration of visual cues and distance traveled in the visual cortex and hippocampus during navigation

J. Fournier
Wolfson Institute for Biomedical Research, University College London, London, UNITED KINGDOM.

Time: Sunday, November 4, 2018, 3:15 PM - 3:35 PM

178.07. Coding spatiotemporal information in cortical networks: What we know and what we don’t

J. P. Gavornik
Biology, Boston University, Boston, MA.

Time: Sunday, November 4, 2018, 3:35 PM - 4:00 PM

178.08. Closing Remarks

Minisymposium

179. Telling Stories of Science

Theme J: History and Education

Location: SDCC 6E

Time: Sunday, November 4, 2018, 1:30 PM - 4:00 PM

Now more than ever, it is essential that scientists actively engage with the public. Through storytelling, or the use of a personal narrative, we can bring science to life and improve communication not only with the public but also within the community. In this minisymposium,

presentations about the science of storytelling and why and how to tell stories, as well as three powerful personal stories, will demonstrate how storytelling can transform science communication and promote scientific progress.

Time: Sunday, November 4, 2018, 1:30 PM - 4:00 PM

179. Chair

W. A. Suzuki
Ctr Neural Sci, New York University, New York, NY.

Time: Sunday, November 4, 2018, 1:30 PM - 1:35 PM

179.01. Introduction

Time: Sunday, November 4, 2018, 1:35 PM - 1:55 PM

179.02. Who speaks for science?: Storytelling and cultural diversity in science communication

M. I. Feliu-Mojer
Molecular Biology, Massachusetts General Hospital, Boston, MA.

Time: Sunday, November 4, 2018, 1:55 PM - 2:15 PM

179.03. Cause and effect

R. Yehuda
James J. Peters Veterans Affairs, Mount Sinai School of Medicine, Bronx, NY.

Time: Sunday, November 4, 2018, 2:15 PM - 2:35 PM

179.04. Science and stagecraft: Using lessons from the performing arts

B. Lillie
Story Collider, Washington, DC.

Time: Sunday, November 4, 2018, 2:35 PM - 2:55 PM

179.05. Before the abstract

J. Zarate
Nature Neuroscience, New York, NY.

Time: Sunday, November 4, 2018, 2:55 PM - 3:15 PM

179.06. Using storytelling to share memories across brains

U. Hasson
Psychology and Neuroscience, Princeton University, Princeton, NJ.

Time: Sunday, November 4, 2018, 3:15 PM - 3:35 PM

179.07. My cousin’s meds

C. Hart
Psychology and Psychiatry, Columbia University, New York, NY.

Time: Sunday, November 4, 2018, 3:35 PM - 4:00 PM

179.08. Closing Remarks

Minisymposium

180. More Than Just a "Motor": Recent Surprises From the Frontal Cortex

Theme E: Motor Systems

Location: SDCC 28A

Time: Sunday, November 4, 2018, 1:30 PM - 4:00 PM

Motor and premotor cortices are crucial for motor control. While classic primate studies have emphasized a role for motor cortices in movement generation, recent rodent studies implicate motor cortical neurons in sensory integration, behavioral strategizing, working memory, and decision making — underrated higher-order functions of the motor cortex that deserve better attention and study. This minisymposium will review recent findings, which highlight that the motor cortex is much more than just a “motor.”

Time: Sunday, November 4, 2018, 1:30 PM - 4:00 PM

180. Chair

C. L. Ebbesen
Skirball Inst. of Biomol. Med., New York University School of Medicine, New York, NY.

Time: Sunday, November 4, 2018, 1:30 PM - 1:35 PM

180.01. Introduction

Time: Sunday, November 4, 2018, 1:35 PM - 1:55 PM

180.02. The role of rat frontal orienting fields in decision commitment

C. D. Kopec
Princeton Neuroscience Institute, Princeton University, Princeton, NJ.

Time: Sunday, November 4, 2018, 1:55 PM - 2:15 PM

180.03. Whisker movement suppression and socio-sensory signals in vibrissa motor cortex

C. L. Ebbesen
Skirball Inst. of Biomol. Med., New York University School of Medicine, New York, NY.

Time: Sunday, November 4, 2018, 2:15 PM - 2:35 PM

180.04. Neural substrates of action timing decisions

M. Murakami
Champalimaud Research, University of Yamanashi, Chuo-shi, JAPAN.

Time: Sunday, November 4, 2018, 2:35 PM - 2:55 PM

180.05. Nominally non-responsive frontal cortical cells encode behavioral variables via ensemble consensus-building

M. Insanally
New York University, NY, NY.

Time: Sunday, November 4, 2018, 2:55 PM - 3:15 PM

180.06. *In vivo* spiking dynamics and encoding of forelimb movements in rat M1/M2

A. Saiki
Neurobiology, Northwestern University, Evanston, IL.

Time: Sunday, November 4, 2018, 3:15 PM - 3:35 PM

180.07. Spatio-temporal receptive fields in the rodent frontal orienting field

J. C. Erlich
Institute of Brain and Cognitive Science, NYU Shanghai, Shanghai, CHINA.

Time: Sunday, November 4, 2018, 3:35 PM - 4:00 PM

180.08. Closing Remarks

Minisymposium

181. Cell Adhesion Molecules at the Intersection of Cell Type Identity and Neural Circuit Connectivity

Theme B: Neural Excitability, Synapses, and Glia

Location: SDCC 29D

Time: Sunday, November 4, 2018, 1:30 PM - 4:00 PM

Cell adhesion molecules (CAMs) play critical roles in neural circuit assembly and are frequently associated with neurodevelopmental and psychiatric disorders. Because hundreds of CAMs exist in the brain, their functional analysis has been challenging. Single-cell RNAseq, gene isoform-

specific, and synapse-specific analyses are breaking barriers. This minisymposium will present the most recent insight into the role of CAMs in defining cell type identity, circuit connectivity, and function.

Time: Sunday, November 4, 2018, 1:30 PM - 4:00 PM

181. Chair

C. Foldy
Brain Research Institute, University of Zurich, Zurich, SWITZERLAND.

Time: Sunday, November 4, 2018, 1:30 PM - 4:00 PM

181. Co Chair

J. de Wit
Neuroscience, O&N 4, 6e verd, VIB-KU Leuven Center for Brain & Disease Research, Leuven, BELGIUM.

Time: Sunday, November 4, 2018, 1:30 PM - 1:35 PM

181.01. Introduction

Time: Sunday, November 4, 2018, 1:35 PM - 1:55 PM

181.02. Classifying Drosophila olfactory neuron subtypes by single-cell RNA-seq

H. Li
Department of Biological Sciences, Stanford University/HHMI, Stanford, CA.

Time: Sunday, November 4, 2018, 1:55 PM - 2:15 PM

181.03. Molecular mechanisms controlling the precision of neural connectivity in the *Drosophila* visual system

M. Y. Pecot
Neurobiology, Harvard Medical School, Boston, MA.

Time: Sunday, November 4, 2018, 2:15 PM - 2:35 PM

181.04. Complement-related proteins and synapse identity in the mammalian brain

F. Selimi
Neuroscience, CIRB-Collège de France, Paris, FRANCE.

Time: Sunday, November 4, 2018, 2:35 PM - 2:55 PM

181.05. Selective cell adhesion in synapse specificity of hippocampal circuits

M. E. Williams
Neurobiology and Anatomy, University of Utah, Salt Lake City, UT.

Time: Sunday, November 4, 2018, 2:55 PM - 3:15 PM

181.06. Functional mapping of a synaptic adhesive code

A. M. Gomez
Biozentrum, University of Basel, Basel, SWITZERLAND.

Time: Sunday, November 4, 2018, 3:15 PM - 3:35 PM

181.07. Functional interrogation of a disease-relevant mutation reveals a unique synaptic role for extracellular sequences of neurexin-3a

J. N. Aoto
Pharmacology, University of Colorado, Denver, Denver, CO.

Time: Sunday, November 4, 2018, 3:35 PM - 4:00 PM

181.08. Closing Remarks

Symposium

257. Repairing the Injured Nervous System: Inhibiting the Inhibitors

Theme C: Neurodegenerative Disorders and Injury

Location: SDCC 6A

Time: Monday, November 5, 2018, 8:30 AM - 11:00 AM

This symposium will focus on inhibitory factors that prevent neuroplasticity and functional recovery after central nervous system injury. We will present new advances in understanding how inhibitory molecules present in a tissue injury environment are a barrier to repair and may be therapeutically targeted. The symposium will cover bench-to-bedside approaches that span mammalian and nonmammalian systems, organic chemistry, gene therapy, and clinical trials, with a common goal of repairing the injured nervous system.

Time: Monday, November 5, 2018, 8:30 AM - 11:00 AM

257. Chair

E. J. Bradbury
King's College London, London, UNITED KINGDOM.

Time: Monday, November 5, 2018, 8:30 AM - 11:00 AM

257. Co Chair

C. G. Becker
University of Edinburgh, Edinburgh, UNITED KINGDOM.

Time: Monday, November 5, 2018, 8:30 AM - 8:35 AM

257.01. Introduction

Time: Monday, November 5, 2018, 8:35 AM - 9:10 AM

257.02. Roles of chondroitin sulfate proteoglycans in neuroplasticity and axon regeneration: A chemical neurobiology approach

L. C. Hsieh-Wilson
Division of Chemistry and Chemical Engineering, California Institute of Technology, Pasadena, CA.

Time: Monday, November 5, 2018, 9:10 AM - 9:45 AM

257.03. How the lesion site environment determines successful regeneration: Lessons from non-mammalian models

C. G. Becker
University of Edinburgh, Edinburgh, UNITED KINGDOM.

Time: Monday, November 5, 2018, 9:45 AM - 10:20 AM

257.04. Rewiring the injured spinal cord: targeting the extracellular matrix to promote functional repair

E. J. Bradbury
King's College London, London, UNITED KINGDOM.

Time: Monday, November 5, 2018, 10:20 AM - 10:55 AM

257.05. Nogo-A therapy for stroke and spinal cord injury: From bench to clinic

M. E. Schwab
University of Zurich, Zurich, SWITZERLAND.

Time: Monday, November 5, 2018, 10:55 AM - 11:00 AM

257.06. Closing Remarks

Symposium

258. Targeted Therapies for Parkinson's Disease: From Genetics to the Clinic

Theme E: Motor Systems

Location: SDCC 6B

Time: Monday, November 5, 2018, 8:30 AM - 11:00 AM

The greatest unmet need in Parkinson's disease (PD) is the development of treatments that slow the relentless progression of the neurodegenerative process. The discovery of genomic and biochemical biomarkers for PD is starting to revolutionize its diagnosis, prognosis, and treatment. This symposium will focus on therapeutic paradigms under active clinical development and highlight a wide range of outstanding questions that need to be addressed to advance the field of disease modification in PD.

Time: Monday, November 5, 2018, 8:30 AM - 11:00 AM

258. Chair

L. S. Shihabuddin
Neuroscience, Sanofi, Framingham, MA.

Time: Monday, November 5, 2018, 8:30 AM - 11:00 AM

258. Co Chair

P. Brundin
Center for Neurodegenerative Science, Van Andel Research Institute, Grand Rapids, MI.

Time: Monday, November 5, 2018, 8:30 AM - 8:35 AM

258.01. Introduction

Time: Monday, November 5, 2018, 8:35 AM - 9:10 AM

258.02. Alpha-synuclein related therapies for Parkinson's disease

P. Brundin
Center for Neurodegenerative Science, Van Andel Research Institute, Grand Rapids, MI.

Time: Monday, November 5, 2018, 9:10 AM - 9:45 AM

258.03. LRRK2-related therapies for Parkinson's disease

J. T. Greenamyre
Neurology, University of Pittsburgh, Pittsburgh, PA.

Time: Monday, November 5, 2018, 9:45 AM - 10:20 AM

258.04. GBA as a therapeutic target in Parkinson's disease

S. Sardi
Neuroscience, Sanofi, Framingham, MA.

Time: Monday, November 5, 2018, 10:20 AM - 10:55 AM

258.05. Critical path for Parkinson’s disease: Increasing efficiency, safety, and speed in clinical trials

D. Stephenson
Critical Path for Parkinson's, Critical Path Institute, Tucson, AZ.

Time: Monday, November 5, 2018, 10:55 AM - 11:00 AM

258.06. Closing Remarks

Minisymposium

259. Defining Dysbiosis in Disorders of Movement and Motivation

Theme F: Integrative Physiology and Behavior

Location: SDCC 6C

Time: Monday, November 5, 2018, 8:30 AM - 11:00 AM

The gut microbiota can affect multiple aspects of brain function and behavior in health and disease. Interestingly, movement and motivation outputs driven by thalamo-cortico-basal ganglia circuits are modulated by changes in this gut-brain axis. In this minisymposium, speakers will discuss recent advances in understanding the effects of the gut microbiota on action selection, somatosensation, and motor behavior in health and disease models, including Parkinson’s, obesity, and opioid addiction.

Time: Monday, November 5, 2018, 8:30 AM - 11:00 AM

259. Chair

C. T. Fields
Neuroscience Institute, Georgia State University, Atlanta, GA.

Time: Monday, November 5, 2018, 8:30 AM - 11:00 AM

259. Co Chair

H. Vuong
Integrative Biology and Physiology, University of California, Los Angeles, Los Angeles, CA.

Time: Monday, November 5, 2018, 8:30 AM - 8:35 AM

259.01. Introduction

Time: Monday, November 5, 2018, 8:35 AM - 8:55 AM

259.02. Effects of gut-derived endotoxin on anxiety-like and repetitive behaviors in male and female mice

C. T. Fields
Neuroscience Institute, Georgia State University, Atlanta, GA.

Time: Monday, November 5, 2018, 8:55 AM - 9:15 AM

259.03. Maternal microbiome mediates fetal brain development and offspring sensory behaviors

H. Vuong
Department of Integrative Biology and Physiology, University of California-Los Angeles, Los Angeles, CA.

Time: Monday, November 5, 2018, 9:15 AM - 9:35 AM

259.04. The gut microbiota mediates affective and sensory function associated with regimen-selective morphine dependence

A. Taylor
Department of Pharmacology, University of Alberta, Edmonton, AB, CANADA.

Time: Monday, November 5, 2018, 9:35 AM - 9:55 AM

259.05. Perturbations of the gut microbiome affect drug seeking behaviors

D. D. Kiraly
Psychiatry / Neuroscience, Icahn School of Medicine at Mount Sinai, New York, NY.

Time: Monday, November 5, 2018, 9:55 AM - 10:15 AM

259.06. Gut microbiota regulate motor deficits and neuroinflammation in a model of Parkinson's disease

T. Sampson
Biology and Biological Engineering, California Institute of Technology, Pasadena, CA.

Time: Monday, November 5, 2018, 10:15 AM - 10:35 AM

259.07. Maternal obese-type gut microbiota differentially impact cognition, anxiety, and compulsive behavior in male and female offspring in mice

A. Bruce-Keller
Pennington Biomedical Research Center, Louisiana State University, Baton Rouge, LA.

Time: Monday, November 5, 2018, 10:35 AM - 11:00 AM

259.08. Closing Remarks

Minisymposium

260. Insular Cortex Neurocircuits: Relationships Among Function, Connectivity, and Drug and Alcohol Abuse

Theme G: Motivation and Emotion

Location: SDCC 6E

Time: Monday, November 5, 2018, 8:30 AM - 11:00 AM

The insular cortex plays a major role in processing the interoceptive effects of drugs of abuse, including alcohol. This minisymposium will highlight preclinical studies that dissect the local neurocircuitry of the insular cortex and its projections to specific brain regions in the context of alcohol, opioid, and psychostimulant abuse. Novel functional roles of these networks in drug-related behaviors and the impact of drugs of abuse on insular cortex-originating synapses will be discussed.

Time: Monday, November 5, 2018, 8:30 AM - 11:00 AM

260. Chair

B. K. Atwood
Department of Psychiatry, Indiana University School of Medicine, Indianapolis, IN.

Time: Monday, November 5, 2018, 8:30 AM - 8:35 AM

260.01. Introduction

Time: Monday, November 5, 2018, 8:35 AM - 8:55 AM

260.02. A role for the insula-accumbens circuit in alcohol interoceptive sensitivity and drinking

J. Besheer
Psychiatry; Bowles Center for Alcohol Studies, University of North Carolina - Chapel Hill, Chapel Hill, NC.

Time: Monday, November 5, 2018, 8:55 AM - 9:15 AM

260.03. Forced abstinence from ethanol intake dysregulates behavioral affect and an endocannabinoid-sensitive insular-BNST circuit

D. G. Winder
Molecular Physiology & Biophysics, Vanderbilt University School of Medicine, Nashville, TN.

Time: Monday, November 5, 2018, 9:15 AM - 9:35 AM

260.04. Role of anterior insula and amygdala circuits in relapse after voluntary abstinence

M. Venniro
National Institute On Drug Abuse, Baltimore, MD.

Time: Monday, November 5, 2018, 9:35 AM - 9:55 AM

260.05. Perineuronal nets in the insula regulate aversion-resistant ethanol consumption

A. W. Lasek
Psychiatry, University of Illinois, Chicago, Chicago, IL.

Time: Monday, November 5, 2018, 9:55 AM - 10:15 AM

260.06. Mu opioid receptor-mediated long-term depression at insular cortex inputs to dorsolateral striatum: Synapse-specific effects of drugs of abuse

B. K. Atwood
Department of Psychiatry, Indiana University School of Medicine, Indianapolis, IN.

Time: Monday, November 5, 2018, 10:15 AM - 10:35 AM

260.07. Insula regulates conflict response and adaptive stress circuits to promote compulsive alcohol drinking

F. W. Hopf
Dept Neurol, UCSF, San Francisco, CA.

Time: Monday, November 5, 2018, 10:35 AM - 11:00 AM

260.08. Closing Remarks

Minisymposium

261. Algorithms for Olfactory Search Across Species

Theme D: Sensory Systems

Location: SDCC 28A

Time: Monday, November 5, 2018, 8:30 AM - 11:00 AM

Olfactory navigation provides a unique model for understanding how neural computations shape a behavior critical for survival. This minisymposium will present recent advances in the understanding of olfactory search in flies and rodents. While many cross-species commonalities have emerged, important questions about the neural circuits that implement search behavior remain. This minisymposium will take a multidisciplinary approach to provide an update on progress on these questions.

Time: Monday, November 5, 2018, 8:30 AM - 11:00 AM

261. Chair

M. Smear
Institute of Neuroscience, Department of Psychology, University of Oregon, Eugene, OR.

Time: Monday, November 5, 2018, 8:30 AM - 11:00 AM

261. Co Chair

K. Nagel
Neuroscience Institute, New York University Medical Center, New York, NY.

Time: Monday, November 5, 2018, 8:30 AM - 8:35 AM

261.01. Introduction

Time: Monday, November 5, 2018, 8:35 AM - 8:55 AM

261.02. How flies find food in the real world

M. Dickinson
Biology, California Institute of Technology, Pasadena, CA.

Time: Monday, November 5, 2018, 8:55 AM - 9:15 AM

261.03. Behavioral structure of active olfactory search

R. Findley
Institute of Neuroscience, University of Oregon, Eugene, OR.

Time: Monday, November 5, 2018, 9:15 AM - 9:35 AM

261.04. Sensorimotor computation directing olfactory navigation through active sampling

M. Louis
Molecular, cellular, and developmental biology, UCSB, Santa Barbara, CA.

Time: Monday, November 5, 2018, 9:35 AM – 9:55 AM

261.05. Strategies and circuits for probabilistic search in turbulent environments

D. H. Gire
Psychology, University of Washington, Seattle, WA.

Time: Monday, November 5, 2018, 9:55 AM – 10:15 AM

261.06. Mouse Navigation in a Virtual Reality Environment

J. Verhagen
Neural Coding and Multimodal Integration of Flavor, John B. Pierce Lab, New Haven, CT.

Time: Monday, November 5, 2018, 10:15 AM – 10:35 AM

261.07. Central neurons encoding wind direction in *Drosophila*

M. Suver
Neuroscience Institute, New York University Medical Center, New York, NY.

Time: Monday, November 5, 2018, 10:35 AM – 11:00 AM

261.08. Closing Remarks

Minisymposium

262. Exposing Neural Dynamics Using Real-Time Control: From Neurons to Human Behavior and Psychopathology

Theme I: Techniques

Location: SDCC 29D

Time: Monday, November 5, 2018, 8:30 AM - 11:00 AM

The brain requires interaction with the environment to function. Current experimental and clinical paradigms, however, do not reflect this bidirectional coupling to a reactive environment. This minisymposium will present new experimental approaches to "close the loop" around neural systems, using a real-time system control approach. These methodological advancements will be addressed as they constitute a range of aspects, from computational modeling and engineering to clinical treatments.

Time: Monday, November 5, 2018, 8:30 AM - 11:00 AM

262. Chair

H. Keren
Mood Brain and Development Unit, National Institute of Mental Health, NIH, Bethesda, MD.

Time: Monday, November 5, 2018, 8:30 AM - 11:00 AM

262. Co Chair

C. Zrenner
Center for Neurology, University Hospital Tübingen, Tübingen, GERMANY.

Time: Monday, November 5, 2018, 8:30 AM - 8:35 AM

262.01. Introduction

Time: Monday, November 5, 2018, 8:35 AM - 8:55 AM

262.02. Long-term neuronal response dynamics of single neurons and networks

S. Reinartz
Neuroscience, International School for Advanced Studies (SISSA), Trieste, ITALY.

Time: Monday, November 5, 2018, 8:55 AM - 9:15 AM

262.03. Sleep-whisking: Using closed loop feedback to bridge the awake-anesthetized gap

A. Wallach
Mortimer B. Zuckerman Mind Brain Behavior Institute, Zuckerman Institute, Columbia University, New York City, NY.

Time: Monday, November 5, 2018, 9:15 AM - 9:35 AM

262.04. Dynamical structure of socio-vocal networks in marmoset monkeys

D. Y. Takahashi
Neuroscience Institute, Princeton University, Princeton, NJ.

Time: Monday, November 5, 2018, 9:35 AM - 9:55 AM

262.05. Large-scale control of human brain structural networks: Emergence over development and utility in clinical interventions

D. S. Bassett
Department of Bioengineering, University of Pennsylvania, Philadelphia, PA.

Time: Monday, November 5, 2018, 9:55 AM - 10:15 AM

262.06. Causal differentiation of functional brain-states with real-time EEG-triggered TMS: Oscillatory phase induces plasticity in the human motor system

C. Zrenner
Center for Neurology, University Hospital Tübingen, Tübingen, GERMANY.

Time: Monday, November 5, 2018, 10:15 AM - 10:35 AM

262.07. Reward, mood and depression: exposing interrelations and dynamics using a closed-loop control

H. Keren
Mood Brain and Development Unit, National Institute of Mental Health, NIH, Bethesda, MD.

Time: Monday, November 5, 2018, 10:35 AM - 11:00 AM

262.08. Closing Remarks

Symposium

344. Extracellular Vesicles: Insights Into Cell-to-Cell Communication in the Nervous System

Theme A: Development

Location: SDCC 6A

Time: Monday, November 5, 2018, 1:30 PM - 4:00 PM

Cells communicate and signal between each other in multiple ways. Emerging evidence suggests that extracellular vesicles (EVs) mediate intercellular signaling in the nervous system. Moreover, EVs have been implicated in the pathology of various neurodegenerative disorders, as several pathogenic proteins are released from cells associated with EVs. This symposium will highlight the biogenesis of EVs in neurons and the role EVs play in synaptic plasticity and neural circuit development.

Time: Monday, November 5, 2018, 1:30 PM - 4:00 PM

344. Chair

J. D. Shepherd
Neurobiology and Anatomy, University of Utah, Salt Lake City, UT.

Time: Monday, November 5, 2018, 1:30 PM - 1:35 PM

344.01. Introduction

Time: Monday, November 5, 2018, 1:35 PM - 2:10 PM

344.02. Exosome-mediated signaling during neural circuit development

H. T. Cline
The Scripps Research Institute, La Jolla, CA.

Time: Monday, November 5, 2018, 2:10 PM - 2:45 PM

344.03. Trafficking mechanisms for extracellular vesicle cargoes

A. Rodal
Biology, Brandeis University, Waltham, MA.

Time: Monday, November 5, 2018, 2:45 PM - 3:20 PM

344.04. Viral-Like mechanisms of neuronal extracellular vesicle biogenesis

J. D. Shepherd
Neurobiology and Anatomy, University of Utah, Salt Lake City, UT.

Time: Monday, November 5, 2018, 3:20 PM - 3:55 PM

344.05. RNA sorting into exosomes secreted by human cells

R. Schekman
Department of Molecular and Cell Biology, University of California at Berkeley, Berkeley, CA.

Time: Monday, November 5, 2018, 3:55 PM - 4:00 PM

344.06. Closing Remarks

Symposium

345. Global Efforts to Build More Predictive Animal Models of Neurodegenerative Disease

Theme C: Neurodegenerative Disorders and Injury

Location: SDCC 6B

Time: Monday, November 5, 2018, 1:30 PM - 4:00 PM

Neurodegenerative diseases are an increasingly common form of disability and death. Despite intensive efforts, no effective therapeutic strategies have been developed, perhaps in part due to inadequate animal models. This symposium will highlight global initiatives to develop and characterize novel animal models of Alzheimer's disease using state-of-the-art technologies, including genome editing, that will be critical for building animal models more predictive for therapeutic efficacy.

Time: Monday, November 5, 2018, 1:30 PM - 4:00 PM

345. Chair

B. T. Lamb
Stark Neurosciences Research Institute, Indiana University School of Medicine, Indianapolis, IN.

Time: Monday, November 5, 2018, 1:30 PM - 4:00 PM

345. Co Chair

R. E. Tanzi
Genetics and Aging Research Unit, Massachusetts General Hospital, Harvard Medical School, Charlestown, MA.

Time: Monday, November 5, 2018, 1:30 PM - 1:35 PM

345.01. Introduction

Time: Monday, November 5, 2018, 1:35 PM - 2:10 PM

345.02. Modified Abeta-species in Alzheimer's disease reveal pathways for generating better predictive mouse models

H. Cynis
Fraunhofer IZI-MWT, Halle, GERMANY.

Time: Monday, November 5, 2018, 2:10 PM - 2:45 PM

345.03. UK DRI: Improving and characterizing mouse models of dementia

F. A. Edwards
Dept Neurosci Physiol Pharmacol, London, UNITED KINGDOM.

Time: Monday, November 5, 2018, 2:45 PM - 3:20 PM

345.04. Novel insights into Alzheimer's disease through the MODEL-AD consortium

B. T. Lamb
Stark Neurosciences Research Institute, Indiana University School of Medicine, Indianapolis, IN.

Time: Monday, November 5, 2018, 3:20 PM - 3:55 PM

345.05. The Cure Alzheimer's Fund Genes to Therapies Program: Using novel mouse models to translate GWAS hits into disease insights

W. Wasco
Massachusetts General Hospital, Harvard Medical School, Charlestown, MA.

Time: Monday, November 5, 2018, 3:55 PM - 4:00 PM

345.06. Closing Remarks

Minisymposium

346. Sex Differences in Risk and Resilience: Stress Effects on the Neural Substrates of Emotion and Motivation

Theme F: Integrative Physiology and Behavior

Location: SDCC 6C

Time: Monday, November 5, 2018, 1:30 PM - 4:00 PM

Corticolimbic dysfunction is a hallmark of stress-linked psychological disorders, risk for which differs markedly in men and women. Understanding how the effects of stress differ in males and females is critical for determining the etiologies of stress-linked disorders. This minisymposium will describe sex-specific effects of stress on neural structure and function of brain regions involved in emotion, motivation, and cognition, highlighting possible neural mechanisms underlying sex-biased disorders.

Time: Monday, November 5, 2018, 1:30 PM - 4:00 PM

346. Chair

C. L. Wellman
Psychological & Brain Sciences, Indiana University, Bloomington, IN.

Time: Monday, November 5, 2018, 1:30 PM - 1:35 PM

346.01. Introduction

Time: Monday, November 5, 2018, 1:35 PM - 1:55 PM

346.02. Sex differences in stress regulation of arousal and cognition

D. A. Bangasser
Department of Psychology and Neuroscience Program, Temple University, Philadelphia, PA.

Time: Monday, November 5, 2018, 1:55 PM - 2:15 PM

346.03. Sex differences in stress and corticosterone modulation of amygdala neurochemistry and alcohol drinking

M. L. Logrip
Department of Psychology, Indiana University-Purdue University Indianapolis, Indianapolis, IN.

Time: Monday, November 5, 2018, 2:15 PM - 2:35 PM

346.04. Sex- and sex hormone- dependent effects of stress on microglia in medial prefrontal cortex

J. L. Bollinger
Psychiatry and Behavioral Neuroscience, University of Cincinnati School of Medicine, Cincinnati, OH.

Time: Monday, November 5, 2018, 2:35 PM - 2:55 PM

346.05. Age- and sex-dependent impact of repeated social stress on function and morphology of the rat prefrontal cortex

K. R. Urban
General Anesthesia, Children's Hospital of Philadelphia, Philadelphia, PA.

Time: Monday, November 5, 2018, 2:55 PM - 3:15 PM

346.06. Sex differences in sensitivity to stress of the prefrontal parvalbumin system

L. Coutellier
Department of Psychology, Ohio State University, Columbus, OH.

Time: Monday, November 5, 2018, 3:15 PM - 3:35 PM

346.07. When it's over, is it really over?: Sex differences in the lasting effects of chronic stress on rat medial prefrontal cortex

K. M. Moench
Department of Psychological and Brain Science, Program in Neuroscience, Indiana University, Bloomington, IN.

Time: Monday, November 5, 2018, 3:35 PM - 4:00 PM

346.08. Closing Remarks

Minisymposium

347. Social Motivation Across the Lifespan

Theme G: Motivation and Emotion

Location: SDCC 6E

Time: Monday, November 5, 2018, 1:30 PM - 4:00 PM

Social behavior and motivation have historically been considered different behavioral processes modulated by different neural circuits. Multiple lines of evidence, however, indicate significant overlap and communication among these circuits. This minisymposium will highlight recent discoveries in the neural mechanisms modulating normal and abnormal social behavior using a variety of genetic, cellular, neuroanatomical, electrophysiological, and pharmacological approaches.

Time: Monday, November 5, 2018, 1:30 PM - 4:00 PM

347. Chair

B. C. Trainor
University of California, Davis, Davis, CA.

Time: Monday, November 5, 2018, 1:30 PM - 4:00 PM

347. Co Chair

A. H. Veenema
Department of Psychology, Michigan State University, East Lansing, MI.

Time: Monday, November 5, 2018, 1:30 PM - 1:35 PM

347.01. Introduction

Time: Monday, November 5, 2018, 1:35 PM - 1:55 PM

347.02. Deconstructing preoptic and midbrain circuits that regulate social motivation

J. A. McHenry
Psychiatry, Duke University, Durham, NC.

Time: Monday, November 5, 2018, 1:55 PM - 2:15 PM

347.03. Synaptic basis of social motivation: Implication for Autism Spectrum Disorder

C. Bellone
Département des Neurosciences fondamentales, Universite de Geneve, GENEVE, SWITZERLAND.

Time: Monday, November 5, 2018, 2:15 PM - 2:35 PM

347.04. Neural substrates underlying social motivation in juvenile rats

C. J. Reppucci
Neuroscience Program; Department of Psychology, Michigan State University, East Lansing, MI.

Time: Monday, November 5, 2018, 2:35 PM - 2:55 PM

347.05. Dynamic representation of sensory cues for social behavior

J. Bergan
Psychological and Brain Sciences, U Mass Amherst, Amherst, MA.

Time: Monday, November 5, 2018, 2:55 PM - 3:15 PM

347.06. Oxytocin circuits in the bed nucleus of the stria terminalis: Modulators of social anxiety

N. Duque-Wilckens
Animal Behavior Graduate Group, University of California, Davis, Davis, CA.

Time: Monday, November 5, 2018, 3:15 PM - 3:35 PM

347.07. Neural circuity of appetitive aggression seeking and relapse in mice

S. A. Golden
National Institute on Drug Abuse, Baltimore, MD.

Time: Monday, November 5, 2018, 3:35 PM - 4:00 PM

347.08. Closing Remarks

Minisymposium

348. Innovative Approaches for Monitoring Neuromodulation With Light

Theme I: Techniques

Location: SDCC 28A

Time: Monday, November 5, 2018, 1:30 PM - 4:00 PM

Neuromodulators are essential signaling molecules that regulate many neural processes through their influence on brain circuits. Monitoring neuromodulator dynamics and untangling their underlying circuits is critical for understanding the function of the brain. This minisymposium

will present state-of-the-art optical techniques that enable rapid, sensitive, cell-specific monitoring of important neuromodulators and cutting-edge tools for labeling neural circuits involved in neuromodulation.

Time: Monday, November 5, 2018, 1:30 PM - 4:00 PM

348. Chair

Y. Li
Peking University, Beijing, CHINA.

Time: Monday, November 5, 2018, 1:30 PM - 4:00 PM

348. Co Chair

M. R. Banghart
Neurobiology, University of California, San Diego, La Jolla, CA.

Time: Monday, November 5, 2018, 1:30 PM - 1:35 PM

348.01. Introduction

Time: Monday, November 5, 2018, 1:35 PM - 1:55 PM

348.02. *In vivo* imaging of neuromodulator transmission in learning using cell-based neurotransmitter fluorescent engineered reporters

A. Lozada
University California San Diego, San Diego, CA.

Time: Monday, November 5, 2018, 1:55 PM - 2:15 PM

348.03. Imaging dopamine dynamics with a genetically encoded indicator *in vivo*

L. Tian
University of California, Davis, Davis, CA.

Time: Monday, November 5, 2018, 2:15 PM - 2:35 PM

348.04. Quantitative analysis of endogenous GPCR signaling with optical sensors of intracellular signals

Y. Chen
Washington University in St. Louis, St. Louis, MO.

Time: Monday, November 5, 2018, 2:35 PM - 2:55 PM

348.05. Spying acetylcholine- and norepinephrine-mediated neuromodulation by novel genetically-encoded sensors

Y. Li
Peking University, Beijing, CHINA.

Time: Monday, November 5, 2018, 2:55 PM - 3:15 PM

348.06. Dopamine release during social behaviors and its hypothalamic control

D. Lin
New York University School of Medicine, New York, NY.

Time: Monday, November 5, 2018, 3:15 PM - 3:35 PM

348.07. Dissecting behaviorally-relevant neuromodulation circuits at cellular resolution

H. Kwon
Max Planck Florida Institute, Max Planck Florida Institute, Jupiter, FL.

Time: Monday, November 5, 2018, 3:35 PM - 4:00 PM

348.08. Closing Remarks

Minisymposium

349. Multidimensional Neuronal Cell Type Classification in the Cerebral Cortex

Theme D: Sensory Systems

Location: SDCC 29D

Time: Monday, November 5, 2018, 1:30 PM - 4:00 PM

There is general agreement in the field that meaningful cell type classification requires multimodal descriptors. These descriptors come from data modalities including morphology, physiology, molecular biology, and connectivity and are ideally linked to a circuit function. This minisymposium will present six recent studies using different multimodal approaches, ranging from molecular to functional, to objectively and systematically describe neuronal cell types in the rodent and human neocortex.

Time: Monday, November 5, 2018, 1:30 PM - 4:00 PM

349. Chair

J. F. Staiger
Neuroanatomy, Georg-August-University Göttingen, Göttingen, GERMANY.

Time: Monday, November 5, 2018, 1:30 PM - 4:00 PM

349. Co Chair

S. A. Sorensen
Morphology, Allen Institute for Brain Science, Seattle, WA.

Time: Monday, November 5, 2018, 1:30 PM - 1:35 PM

349.01. Introduction

Time: Monday, November 5, 2018, 1:35 PM - 1:55 PM

349.02. Morphological, electrophysiological and transcriptional descriptions of cell types in mouse visual cortex

S. A. Sorensen
Morphology, Allen Institute for Brain Science, Seattle, WA.

Time: Monday, November 5, 2018, 1:55 PM - 2:15 PM

349.03. (Mis)using VIP neurons to build an observer-independent cell type classification pipeline

J. F. Staiger
Neuroanatomy, Georg-August-University Göttingen, Göttingen, GERMANY.

Time: Monday, November 5, 2018, 2:15 PM - 2:35 PM

349.04. Organization and function of enigmatic layer 1

B. Rudy
New York University School of Medicine, NYU Neuroscience Institute, New York, NY.

Time: Monday, November 5, 2018, 2:35 PM - 2:55 PM

349.05. Distinct descending motor cortex pathways and their roles in movement

S. Viswanathan
Molecular Biology, Janelia Research Campus, Ashburn, VA.

Time: Monday, November 5, 2018, 2:55 PM - 3:15 PM

349.06. Relationships between structure, *in vivo* function, and long-range axonal target of cortical neurons

M. Oberlaender
Center of Advanced European Studies and Research, Bonn, GERMANY.

Time: Monday, November 5, 2018, 3:15 PM - 3:35 PM

349.07. Reconstruction and simulation of neocortical microcircuitry

J. DeFelipe
Functional and Systems Neurobiology, Instituto Cajal (CSIC), Madrid, SPAIN.

Time: Monday, November 5, 2018, 3:35 PM - 4:00 PM

349.08. Closing Remarks

Symposium

434. RNA Control of Axonal Functions

Theme A: Development

Location: SDCC 6A

Time: Tuesday, November 6, 2018, 8:30 AM - 11:00 AM

This symposium will highlight new insight on RNA control of axonal functions. Discoveries in different models and paradigms are coming together to provide a comprehensive view of how RNA localization and local translation regulate axon growth, maintenance, and regeneration. Intracellular trafficking, localized regulation, and axon-to-soma communication are key aspects of these mechanisms. The presentations will showcase diverse examples of how these fundamental mechanisms are implemented.

Time: Tuesday, November 6, 2018, 8:30 AM - 11:00 AM

434. Chair

J. L. Twiss
Biological Sciences, University of South Carolina, Columbia, SC.

Time: Tuesday, November 6, 2018, 8:30 AM - 11:00 AM

434. Co Chair

M. Fainzilber
Biomolecular Sciences, Weizmann Institute of Science, Rehovat, ISRAEL.

Time: Tuesday, November 6, 2018, 8:30 AM - 8:35 AM

434.01. Introduction

Time: Tuesday, November 6, 2018, 8:35 AM - 9:10 AM

434.02. Signaling mechanisms for regulation of protein synthesis in axons

J. L. Twiss
Biological Sciences, University of South Carolina, Columbia, SC.

Time: Tuesday, November 6, 2018, 9:10 AM - 9:45 AM

434.03. Distinct pathways involving piRNA and RNA granules in axon regeneration

Y. Jin
Div Biolog Sci, Neurobiology Section, University of California, San Diego, San Diego, CA.

Time: Tuesday, November 6, 2018, 9:45 AM - 10:20 AM

434.04. Subcellular regulation of RNA localization and local translation in axon growth control

M. Fainzilber
Biomolecular Sciences, Weizmann Institute of Science, Rehovat, ISRAEL.

Time: Tuesday, November 6, 2018, 10:20 AM - 10:55 AM

434.05. Orchestrating axonal transport, translation, and survival

R. A. Segal
Neurobiology, Dana-Farber Cancer Institute, Boston, MA.

Time: Tuesday, November 6, 2018, 10:55 AM - 11:00 AM

434.06. Closing Remarks

Symposium

435. The Feeling Within: Molecules to Behavior Underlying Interoception

Theme D: Sensory Systems

Location: SDCC 6B

Time: Tuesday, November 6, 2018, 8:30 AM - 11:00 AM

How does the brain monitor and react to our constantly changing internal physiology? While there has been rapid progress in understanding exteroception, less is known about how organisms sense and process information from within, such as hunger, respiration, circulation, excretion, and gut-brain interactions. This symposium will take a multidisciplinary approach to describe recent advances in interoception, from defining the signals that monitor internal states to identifying critical neuronal circuits that drive behavior.

Time: Tuesday, November 6, 2018, 8:30 AM - 11:00 AM

435. Chair

L. Stowers
Neuroscience, The Scripps Research Institute, La Jolla, CA.

Time: Tuesday, November 6, 2018, 8:30 AM - 11:00 AM

435. Co Chair

A. Patapoutian
Howard Hughes Medical Institute and The Scripps Research Institute, La Jolla, CA.

Time: Tuesday, November 6, 2018, 8:30 AM - 8:35 AM

435.01. Introduction

Time: Tuesday, November 6, 2018, 8:35 AM - 9:10 AM

435.02. Regulation of the gut-brain by the microbiome

S. Mazmanian
Biology, Caltech, Pasadena, CA.

Time: Tuesday, November 6, 2018, 9:10 AM - 9:45 AM

435.03. Role of Piezo ion channels in interoception

A. Patapoutian
Neuroscience, Howard Hughes Medical Institute and The Scripps Research Institute, La Jolla, CA.

Time: Tuesday, November 6, 2018, 9:45 AM - 10:20 AM

435.04. Neural circuits for homeostatic behaviors

Z. Knight
Physiology, UCSF, San Francisco, CA.

Time: Tuesday, November 6, 2018, 10:20 AM - 10:55 AM

435.05. Sensory and motor control of voluntary urination

L. Stowers
Neuroscience, The Scripps Research Institute, La Jolla, CA.

Time: Tuesday, November 6, 2018, 10:55 AM - 11:00 AM

435.06. Closing Remarks

Minisymposium

436. The Neurobiology of Forgetting

Theme H: Cognition

Location: SDCC 6C

Time: Tuesday, November 6, 2018, 8:30 AM - 11:00 AM

We automatically encode virtually all experiences, yet the vast majority of our experiences are not remembered later. This minisymposium will address the questions of how and why the brain forgets. It brings together researchers that study forgetting in flies, rodents, and humans. The minisymposium will focus on molecular-, cellular-, and systems-level mechanisms underlying forgetting and consider the active and adaptive roles that forgetting plays in keeping our memory system flexible.

Time: Tuesday, November 6, 2018, 8:30 AM - 11:00 AM

436. Chair

M. Wimber
University of Birmingham, Birmingham, UNITED KINGDOM.

Time: Tuesday, November 6, 2018, 8:30 AM - 11:00 AM

436. Co Chair

P. W. Frankland
Program in Neuroscience and Mental Health, Hospital for Sick Children, Toronto, ON, CANADA.

Time: Tuesday, November 6, 2018, 8:30 AM - 8:35 AM

436.01. Introduction

Time: Tuesday, November 6, 2018, 8:35 AM - 8:55 AM

436.02. Dopamine-mediated active forgetting in Drosophila

R. L. Davis
Neuroscience, The Scripps Research Institute, Jupiter, FL.

Time: Tuesday, November 6, 2018, 8:55 AM - 9:15 AM

436.03. Molecular and neural network mechanisms underlying active forgetting

Y. Zhong
Tsinghua University, Beijing City, CHINA.

Time: Tuesday, November 6, 2018, 9:15 AM – 9:35 AM

436.04. Hippocampal neurogenesis and adaptive forgetting

P. W. Frankland
PGCRL - NMH 5th floor, Hospital For Sick Children, Toronto, ON, CANADA.

Time: Tuesday, November 6, 2018, 9:35 AM – 9:55 AM

436.05. Tracking adaptive forgetting in human brain activity

M. Wimber
University of Birmingham, Birmingham, UNITED KINGDOM.

Time: Tuesday, November 6, 2018, 9:55 AM – 10:15 AM

436.06. Enhancement and forgetting of semantic memories across offline periods

A. C. Schapiro
Psychiatry, Beth Israel Deaconess Medical Center / Harvard Med, Boston, MA.

Time: Tuesday, November 6, 2018, 10:15 AM – 10:35 AM

436.07. The representation theory of forgetting: Both decay and interference matter

T. Sadeh
Department of Brain and Cognitive Sciences, Ben-Gurion University of the Negev, Beer Sheva, ISRAEL.

Time: Tuesday, November 6, 2018, 10:35 AM – 11:00 AM

436.08. Closing Remarks

Minisymposium

437. Mechanisms of Tau Oligomer-Induced Synaptic Impairment and Potential Treatment Strategies

Theme C: Neurodegenerative Disorders and Injury

Location: SDCC 6E

Time: Tuesday, November 6, 2018, 8:30 AM - 11:00 AM

Soluble oligomeric forms of the Alzheimer's disease protein tau are gaining a lot of attention because they likely promote cell-to-cell propagation of pathology and are more toxic than large insoluble aggregates. This minisymposium will discuss evidence supporting a role for tau oligomers in disease initiation and progression and explore therapeutic strategies for inhibiting formation of tau oligomers and/or counteracting synaptic impairment and degeneration caused by tau oligomers.

Time: Tuesday, November 6, 2018, 8:30 AM - 11:00 AM

437. Chair

O. Arancio
Dept of Pathol, Columbia University, NEW YORK, NY.

Time: Tuesday, November 6, 2018, 8:30 AM - 11:00 AM

437. Co Chair

F. M. Longo
Department of Neurology and Neurological Sciences, Stanford University, Palo Alto, CA.

Time: Tuesday, November 6, 2018, 8:30 AM - 8:35 AM

437.01. Introduction

Time: Tuesday, November 6, 2018, 8:35 AM - 8:55 AM

437.02. Formation and spreading of tau oligomeric strains

R. Kayed
Department of Neurology and Neurosciences, University of Texas Medical Branch, Galveston, TX.

Time: Tuesday, November 6, 2018, 8:55 AM - 9:15 AM

437.03. APP as a common mechanism for extracellular oligomeric tau-induced synaptic dysfunction and memory loss

O. Arancio
Dept of Pathol, Columbia University, NEW YORK, NY.

Time: Tuesday, November 6, 2018, 9:15 AM - 9:35 AM

437.04. Role of astrocytes in oligomeric tau-induced synaptic dysfunction and tau pathology propagation

C. Grassi
Inst. of Human Physiology, Univ. Cattolica, Roma, ITALY.

Time: Tuesday, November 6, 2018, 9:35 AM - 9:55 AM

437.05. Tau-mediated dysfunction is mediated by small soluble phosphorylated tau species including tau oligomers

A. Mudher
Biological Sciences, University of Southampton, Southampton, UNITED KINGDOM.

Time: Tuesday, November 6, 2018, 9:55 AM - 10:15 AM

437.06. Novel therapeutic targets against tau oligomers-induced pathology: A phenotypic approach

S. Parmentier-Batteur
Neuroscience Discovery, Merck & Co, Inc, West Point, PA.

Time: Tuesday, November 6, 2018, 10:15 AM - 10:35 AM

437.07. Small molecule targeting of the p75 receptor inhibits tau oligomer formation and tau oligomer-induced synaptic impairment

F. M. Longo
Department of Neurology and Neurological Sciences, Stanford University, Palo Alto, CA.

Time: Tuesday, November 6, 2018, 10:35 AM - 11:00 AM

437.08. Closing Remarks

Minisymposium

438. Neuromodulation of Brain States in Health and Disease: Bridging Experiments and Computational Models

Theme B: Neural Excitability, Synapses, and Glia

Location: SDCC 28A

Time: Tuesday, November 6, 2018, 8:30 AM - 11:00 AM

Subcortical neuromodulatory systems dynamically reconfigure the activity of neural microcircuits and regulate shifts between brain states in health and disease. Despite their crucial role in physiology and pathology, the cellular and synaptic mechanisms by which neuromodulators control neural activity remain unclear. This minisymposium will highlight cutting-edge techniques developed in global brain initiatives for a quantitative assessment of neuromodulation in brain function and dysfunction.

Time: Tuesday, November 6, 2018, 8:30 AM - 11:00 AM

438. Chair

S. Ramaswamy
Blue Brain Project, École Polytechnique Fédérale de Lausanne, Geneva, SWITZERLAND.

Time: Tuesday, November 6, 2018, 8:30 AM - 11:00 AM

438. Co Chair

A. Adamantidis
Department of Neurology, University of Bern, Bern, SWITZERLAND.

Time: Tuesday, November 6, 2018, 8:30 AM - 8:35 AM

438.01. Introduction

Time: Tuesday, November 6, 2018, 8:35 AM - 8:55 AM

438.02. Thalamic dual-modulation of sleep and wakefulness

C. Gutierrez Herrera
Department of Neurology, University of Bern, Bern, SWITZERLAND.

Time: Tuesday, November 6, 2018, 8:55 AM - 9:15 AM

438.03. Studying the dynamic control of cortical circuits by subcortical systems at the circuit level in non-human primates: We can and we should

A. A. Disney
Neurobiology, Duke University, Durham, NC.

Time: Tuesday, November 6, 2018, 9:15 AM - 9:35 AM

438.04. Reconciling long-lived modulatory switches in activity with homeostatic plasticity

T. O'Leary
Department of Engineering, University of Cambridge, Cambridge, UNITED KINGDOM.

Time: Tuesday, November 6, 2018, 9:35 AM - 9:55 AM

438.05. Predictive in silico reconstruction of cholinergic control of neocortical network states

S. Ramaswamy
Blue Brain Project, École Polytechnique Fédérale de Lausanne, Geneva, SWITZERLAND.

Time: Tuesday, November 6, 2018, 9:55 AM - 10:15 AM

438.06. To seek or to flee: Serotonergic regulation of approach, avoidance, and escape behavior

M. R. Warden
Department of Neurobiology and Behavior, Cornell University, Ithaca, NY.

Time: Tuesday, November 6, 2018, 10:15 AM - 10:35 AM

438.07. Reward-associated modulation of excitatory-inhibitory dynamics in the prefrontal cortex

O. Yizhar
Department of Neurobiology and Behavior, Weizmann Institute, Rehovot, ISRAEL.

Time: Tuesday, November 6, 2018, 10:35 AM - 11:00 AM

438.08. Closing Remarks

Minisymposium

439. Whole-Brain Analysis of Cells and Circuits by Tissue Clearing and Light-Sheet Microscopy

Theme I: Techniques

Location: SDCC 29D

Time: Tuesday, November 6, 2018, 8:30 AM - 11:00 AM

Recent advances in tissue clearing, biomolecular labeling, rapid imaging, and image informatics have allowed neuroscientists to observe the entire brain at a subcellular resolution. Whole brain clearing and imaging is particularly powerful for physiology and pathology of cellular components and their connections in the CNS. This minisymposium will discuss challenges and opportunities in whole-brain analysis of cells and circuits to elucidate brain functions by tissue clearing and light-sheet microscopy.

Time: Tuesday, November 6, 2018, 8:30 AM - 11:00 AM

439. Chair

H. R. Ueda
Graduate School of Medicine, The University of Tokyo, Tokyo, JAPAN.

Time: Tuesday, November 6, 2018, 8:30 AM - 11:00 AM

439. Co Chair

K. Chung
Brain and Cognitive Sciences, Massachusetts Institute of Technology, Cambridge, MA.

Time: Tuesday, November 6, 2018, 8:30 AM - 8:35 AM

439.01. Introduction

Time: Tuesday, November 6, 2018, 8:35 AM - 8:55 AM

439.02. Whole-body and whole-organ clearing and imaging with sub-cellular resolution towards organism-level systems biology

H. R. Ueda
Graduate School of Medicine, The University of Tokyo, Tokyo, JAPAN.

Time: Tuesday, November 6, 2018, 8:55 AM - 9:15 AM

439.03. Cruising inside cell

A. Miyawaki
Brain Science Institute, RIKEN, Wako, Saitama, JAPAN.

Time: Tuesday, November 6, 2018, 9:15 AM - 9:35 AM

439.04. Imaging of cleared biological samples with the ultramicroscope

H. Dodt
Department of Bioelectronics, Vienna University of Technology, Vienna, AUSTRIA.

Time: Tuesday, November 6, 2018, 9:35 AM - 9:55 AM

439.05. Panoptic vDISCO imaging of intact transparent mice for unbiased biomedical research

A. Erturk
Institute for Stroke and Dementia, Klinikum der Universität München, Munich, GERMANY.

Time: Tuesday, November 6, 2018, 9:55 AM - 10:15 AM

439.06. Functional and anatomical imaging of intact circuits using modern neuroscience techniques

J. B. Treweek
Biomedical Engineering, CALTECH, Pasadena, CA.

Time: Tuesday, November 6, 2018, 10:15 AM - 10:35 AM

439.07. Multi-scale high-dimensional imaging and phenotyping of complex biological system

K. Chung
Brain and Cognitive Sciences, Massachusetts Institute of Technology, Cambridge, MA.

Time: Tuesday, November 6, 2018, 10:35 AM - 11:00 AM

439.08. Closing Remarks

Symposium

529. Organelle Dynamics and Proteostasis in Neuronal Homeostasis and Degeneration

Theme C: Neurodegenerative Disorders and Injury

Location: SDCC 6A

Time: Tuesday, November 6, 2018, 1:30 PM - 4:00 PM

Neuronal organelles are highly dynamic, and their biogenesis is tightly regulated in the extended extremities of a neuron. How to maintain organelle homeostasis is a fundamental cellular concern and crucial to neuronal survival. Defects in organelle function have emerged as key contributors to several neurodegenerative disorders, including Alzheimer's and Parkinson’s disease. This symposium will present cutting-edge research at the intersection of neuronal cell biology and neurodegeneration.

Time: Tuesday, November 6, 2018, 1:30 PM - 4:00 PM

529. Chair

X. Wang
Neurosurgery, Stanford University, Palo Alto, CA.

Time: Tuesday, November 6, 2018, 1:30 PM - 1:35 PM

529.01. Introduction

Time: Tuesday, November 6, 2018, 1:35 PM - 2:10 PM

529.02. A localized autophagic filter depletes axons from damaged mitochondria

L. Scorrano
Department of Biology, University of Padova/Venetian Institute of Molecular Medicine, Padova, ITALY.

Time: Tuesday, November 6, 2018, 2:10 PM - 2:45 PM

529.03. Synaptic autophagy in Parkinson's disease

P. Verstreken
Department of Neurosciences Laboratory for Neuronal Communication, VIB-KU Leuven Center for Brain & Disease Research, Leuven, BELGIUM.

Time: Tuesday, November 6, 2018, 2:45 PM - 3:20 PM

529.04. A common risk factor for protein aggregation disorders mediates an extracellular vesicle pathway

L. Pallanck
Department of Genome Sciences, University of Washington, Seattle, WA.

Time: Tuesday, November 6, 2018, 3:20 PM - 3:55 PM

529.05. A convergent molecular pathway in Parkinsonian neurodegeneration

X. Wang
Neurosurgery, Stanford University, Palo Alto, CA.

Time: Tuesday, November 6, 2018, 3:55 PM - 4:00 PM

529.06. Closing Remarks

Symposium

530. The Dynamic Brain: Signatures of Fast Functional Reconfiguration, Their Interpretability, and Clinical Value

Theme I: Techniques

Location: SDCC 6B

Time: Tuesday, November 6, 2018, 1:30 PM - 4:00 PM

Communication across brain regions fluctuates tirelessly as we interact with our environment. Established patterns of functional connectivity (e.g., DMN) often disintegrate in the span of a few minutes, making the concept of networks elusive under such volatile conditions. This symposium will review how to best capture, model, and interpret dynamic patterns of functional connectivity in the human brain. It will then discuss in what ways aberrant dynamic connectivity underlies clinical conditions.

Time: Tuesday, November 6, 2018, 1:30 PM - 4:00 PM

530. Chair

J. Gonzalez-Castillo
National Institute of Mental Health, NIH, Bethesda, MD.

Time: Tuesday, November 6, 2018, 1:30 PM - 4:00 PM

530. Co Chair

P. Bandettini
Lab of Brain, National Institute of Mental Health, NIH, Bethesda, MD.

Time: Tuesday, November 6, 2018, 1:30 PM - 1:35 PM

530.01. Introduction

Time: Tuesday, November 6, 2018, 1:35 PM - 2:10 PM

530.02. The dynamic functional connectome: State-of-the-art and methods

D. Van De Ville
Bioengineering (EPFL) and Radiology (UniGE), Ecole Polytechnique Fédérale de Lausanne, Geneva, SWITZERLAND.

Time: Tuesday, November 6, 2018, 2:10 PM - 2:45 PM

530.03. Modulating the stability and integration of intrinsic networks

B. Misic
Montreal Neurological Institute, McGill University, Montreal, QC, CANADA.

Time: Tuesday, November 6, 2018, 2:45 PM - 3:20 PM

530.04. Interpretability of dynamic FC based on concurrent neuronal and hemodynamic measures

E. M. Hillman
Biomedical Engineer, Columbia Univ, New York, NY.

Time: Tuesday, November 6, 2018, 3:20 PM - 3:55 PM

530.05. Dynamic functional connectivity biomarkers

V. Calhoun
Biomedical Engineering, University of New Mexico, Albuquerque, NM.

Time: Tuesday, November 6, 2018, 3:55 PM - 4:00 PM

530.06. Closing Remarks

Symposium

531. Language Networks Derived From Direct Intracranial Recordings in Humans

Theme H: Cognition

Location: SDCC 6C

Time: Tuesday, November 6, 2018, 1:30 PM - 4:00 PM

Intracranial recordings in humans provide data unsurpassed in spatiotemporal resolution that yield novel insight into the rapid computations that underlie language. This symposium details results from a broad array of questions asked and experimental paradigms used across five labs to probe language architecture — from reading and sentence comprehension to lexical retrieval and articulation processes. This new knowledge about language networks carries implications for learning and disease.

Time: Tuesday, November 6, 2018, 1:30 PM - 4:00 PM

531. Chair

N. Tandon
Neurological Surgery, University of Texas Health Science Center at Houston, Houston, TX.

Time: Tuesday, November 6, 2018, 1:30 PM - 4:00 PM

531. Co Chair

S. Dehaene
Cognitive Neuroimaging Unit, INSERM-CEA-University Paris Saclay, National Institute for Health and Medical Research, GIF/YVETTE, FRANCE.

Time: Tuesday, November 6, 2018, 1:30 PM - 1:35 PM

531.01. Introduction

Time: Tuesday, November 6, 2018, 1:35 PM - 2:10 PM

531.02. Computational neuroanatomy of speech production

G. Hickok
Center for Language Science, University of California - Irvine, Irvine, CA.

Time: Tuesday, November 6, 2018, 2:45 PM - 3:20 PM

531.03. Brain dynamics supporting lexical retrieval in language production

S. Ries-Cornou
Center for Clinical and Cognitive Neuroscience, San Diego State University, San Diego, CA.

Time: Tuesday, November 6, 2018, 2:10 PM - 2:45 PM

531.04. Meaning composition in the human language network

E. Fedorenko
Department of Psychiatry, Massachusetts General Hospital, Charlestown, MA.

Time: Tuesday, November 6, 2018, 3:20 PM - 3:55 PM

531.05. Intracranial studies of the constituent structure of language

S. Dehaene
Cognitive Neuroimaging Unit, INSERM-CEA-University Paris Saclay, National Institute for Health and Medical Research, GIF/YVETTE, FRANCE.

Time: Tuesday, November 6, 2018, 3:55 PM - 4:00 PM

531.06. Closing Remarks

Minisymposium

532. Neuropeptide Signaling: From Physiology to Behavior

Theme F: Integrative Physiology and Behavior

Location: SDCC 6E

Time: Tuesday, November 6, 2018, 1:30 PM - 4:00 PM

Neuropeptides comprise the largest and most diverse class of neuromodulators, and they mediate integral processes ranging from energy homeostasis to behavior. This minisymposium will highlight recent experimental and technical advances in understanding mechanisms by which neuropeptide signaling can influence physiology and behavior at both the cellular and circuit level in a range of organisms.

Time: Tuesday, November 6, 2018, 1:30 PM - 4:00 PM

532. Chair

J. Garrison
Laboratory of Neurobiology, Buck Institute for Research on Aging, Novato, CA.

Time: Tuesday, November 6, 2018, 1:30 PM - 1:35 PM

532.01. Introduction

Time: Tuesday, November 6, 2018, 1:35 PM - 1:55 PM

532.02. Sensations driving oxytocin neurons towards sociality

V. Grinevich
Laboratory of Neuropeptides, Heidelberg University and DKFZ, Heidelberg, GERMANY.

Time: Tuesday, November 6, 2018, 1:55 PM - 2:15 PM

532.03. Neuropeptidergic control of defensive behavior in larval zebrafish

A. Douglass
Department of Neurobiology & Anatomy, University of Utah, Salt Lake City, UT.

Time: Tuesday, November 6, 2018, 2:15 PM - 2:35 PM

532.04. Cellular and circuit mechanisms of neuropeptide signaling

J. Garrison
Laboratory of Neurobiology, Buck Institute for Research on Aging, Novato, CA.

Time: Tuesday, November 6, 2018, 2:35 PM - 2:55 PM

532.05. Molecular basis of neuropeptidergic modulation on *Drosophila* aggression

K. Asahina
Salk Institute, La Jolla, CA.

Time: Tuesday, November 6, 2018, 2:55 PM - 3:15 PM

532.06. Oxytocinergic modulation of midbrain dopamine systems

Y. Kozorovitskiy
Neurobiology, Northwestern Univ, Evanston, IL.

Time: Tuesday, November 6, 2018, 3:15 PM - 3:35 PM

532.07. Neuropeptidomics: Unraveling peptidergic signaling in *C. elegans*

L. Temmerman
Biology, KU Leuven, Leuven, BELGIUM.

Time: Tuesday, November 6, 2018, 3:35 PM - 4:00 PM

532.08. Closing Remarks

Minisymposium

533. Molecular and Nano-Organization of Synapses

Theme B: Neural Excitability, Synapses, and Glia

Location: SDCC 28A

Time: Tuesday, November 6, 2018, 1:30 PM - 4:00 PM

Recent progress has revealed that the nerve terminal, synaptic cleft, and postsynaptic site form a trans-cellular unit that is precisely aligned on a nanoscale to transmit information. This minisymposium will investigate the machinery of each compartment and how compartments are integrated by synaptic adhesion molecules and by glial- and neuron-secreted factors. Going beyond a static picture, the minisymposium will also address dynamic properties of synaptic compartments that contribute to remodeling.

Time: Tuesday, November 6, 2018, 1:30 PM - 4:00 PM

533. Chair

T. Biederer
Dpt. of Neuroscience, Tufts University School of Medicine, Boston, MA.

Time: Tuesday, November 6, 2018, 1:30 PM - 1:35 PM

533.01. Introduction

Time: Tuesday, November 6, 2018, 1:35 PM - 1:55 PM

533.02. Assembly and function of the presynaptic active zone

P. S. Kaeser
Department of Neurobiology, Harvard Medical School, Boston, MA.

Time: Tuesday, November 6, 2018, 1:55 PM - 2:15 PM

533.03. Tuning presynaptic inhibition by retrograde signals and a Contactin/Caspr co-receptor complex

J. Kaltschmidt
Department of Neurosurgery, Stanford University, Stanford, CA.

Time: Tuesday, November 6, 2018, 2:15 PM - 2:35 PM

533.04. Super-resolution imaging of trans-synaptic neurexin-neuroligin adhesions with small monomeric probes

O. Thoumine
Institut Interdisciplinaire de Neuroscience, Université Bordeaux, Bordeaux, FRANCE.

Time: Tuesday, November 6, 2018, 2:35 PM - 2:55 PM

533.05. Molecular organization and dynamics of the synaptic cleft

T. Biederer
Dpt. of Neuroscience, Tufts University School of Medicine, Boston, MA.

Time: Tuesday, November 6, 2018, 2:55 PM - 3:15 PM

533.06. Control of synapse function by dynamic trans-neuronal nanostructure

T. A. Blanpied
Department of Physiology, University of Maryland School of Medicine, Baltimore, MD.

Time: Tuesday, November 6, 2018, 3:15 PM - 3:35 PM

533.07. Astrocyte regulation of neuronal glutamate receptors

N. J. Allen
Molecular Neurobiology, Salk Institute, La Jolla, CA.

Time: Tuesday, November 6, 2018, 3:35 PM - 4:00 PM

533.08. Closing Remarks

Minisymposium

534. Sex Differences and Hormone Action in the Limbic System

Theme G: Motivation and Emotion

Location: SDCC 29D

Time: Tuesday, November 6, 2018, 1:30 PM - 4:00 PM

Limbic system function is critical for the control of emotion, motivation, and memory. Sex differences and hormone effects have been demonstrated in the limbic system, including in the nucleus accumbens, amygdala, and hippocampus. This minisymposium will highlight recent work on the electrophysiological and molecular mechanisms underlying these differences, how they interact with environmental stimuli such as stress, and their relevance to mental illness and other disorders.

Time: Tuesday, November 6, 2018, 1:30 PM - 4:00 PM

534. Chair

J. Meitzen
Biological Sciences, North Carolina State University, Raleigh, NC.

Time: Tuesday, November 6, 2018, 1:30 PM - 1:35 PM

534.01. Introduction

Time: Tuesday, November 6, 2018, 1:35 PM - 1:55 PM

534.02. Sex differences in medium spiny neuron function in the nucleus accumbens

J. Meitzen
Biological Sciences, North Carolina State University, Raleigh, NC.

Time: Tuesday, November 6, 2018, 1:55 PM - 2:15 PM

534.03. Sex differences in nucleus accumbens inputs: Basal differences and influence of stress exposure

L. A. Briand
Psychology, Temple University, Philadelphia, PA.

Time: Tuesday, November 6, 2018, 2:15 PM - 2:35 PM

534.04. Sex-specific regulation of stress-induced pre-synaptic plasticity in the nucleus accumbens: Implications for mood disorders

G. E. Hodes
Neuroscience, Virginia Tech, Blacksburg, VA.

Time: Tuesday, November 6, 2018, 2:35 PM - 2:55 PM

534.05. Sex differences in peptide and ethanol effects on amygdala synapses

D. Kirson
Neuroscience, The Scripps Research Institute, La Jolla, CA.

Time: Tuesday, November 6, 2018, 2:55 PM - 3:15 PM

534.06. Estradiol modulates hippocampal plasticity in paternal California mice

E. R. Glasper
Department of Psychology, University of Maryland, College Park, MD.

Time: Tuesday, November 6, 2018, 3:15 PM - 3:35 PM

534.07. Electrophysiological analyses complement and extend the understanding of female and male hippocampus

H. E. Scharfman
Dementia Research, The Nathan Kline Institute For Psych. Res., Orangeburg, NY.

Time: Tuesday, November 6, 2018, 3:35 PM - 4:00 PM

534.08. Closing Remarks

Symposium

615. Multiple Axes of Dopamine Systems for Behavioral Controls: From Fly Via Rodent to Monkey

Theme F: Integrative Physiology and Behavior

Location: SDCC 6A

Time: Wednesday, November 7, 2018, 8:30 AM - 11:00 AM

Across the animal kingdom, dopamine plays a central role in regulating diverse flexible and habitual behaviors. This symposium brings together researchers using different models, from invertebrates to primates, to discuss how multiple dopamine systems work in concert to generate appropriate behavioral control. This comparative framework will highlight conserved and divergent organizational principles across dopamine systems and how they confer flexibility to neural circuits and behavior.

Time: Wednesday, November 7, 2018, 8:30 AM - 11:00 AM

615. Chair

M. Watabe-Uchida
Molecular and Cellular Biology, Center for Brain Science, Harvard University, Cambridge, MA.

Time: Wednesday, November 7, 2018, 8:30 AM - 11:00 AM

615. Co Chair

O. Hikosaka
Laboratory Sensorimotor Research, National Eye Institute, Bethesda, MD.

Time: Wednesday, November 7, 2018, 8:30 AM - 8:35 AM

615.01. Introduction

Time: Wednesday, November 7, 2018, 8:35 AM - 9:10 AM

615.02. Dopaminergic modulation at multiple time-scales in *Drosophila*

V. Ruta
Science for the benefit of humanity, The Rockefeller University, New York, NY.

Time: Wednesday, November 7, 2018, 9:10 AM - 9:45 AM

615.03. Source-target topography and functional diversity of dopamine substantia nigra neurons in mice

J. Roeper
Institute of Neurophysiology, Goethe University Frankfurt, Frankfurt, GERMANY.

Time: Wednesday, November 7, 2018, 9:45 AM - 10:20 AM

615.04. Separate dopamine systems reinforce behavioral choice along value and threat axes in mice

M. Watabe-Uchida
Molecular and Cellular Biology, Center for Brain Science, Harvard University, Cambridge, MA.

Time: Wednesday, November 7, 2018, 10:20 AM - 10:55 AM

615.05. Two groups of monkey dopamine neurons for flexible and stable decisions

O. Hikosaka
Laboratory Sensorimotor Research, National Eye Institute, Bethesda, MD.

Time: Wednesday, November 7, 2018, 10:55 AM - 11:00 AM

615.06. Closing Remarks

Symposium

616. Mental Structures and Sequences: Evolutionary Solutions From Birds to Primates

Theme H: Cognition

Location: SDCC 6B

Time: Wednesday, November 7, 2018, 8:30 AM - 11:00 AM

The human brain appears to be specialized for certain operations. To what extent aspects of our neurobiology can find realistic animal models constitutes a pressing issue for neuroscience. This is most salient in the domain of language, a uniquely human neurocognitive capacity. This symposium will review the revolution taking place in understanding the neurobiology of language as it includes how the brain creates mental structures and which aspects engage evolutionarily conserved or convergent neural mechanisms.

Time: Wednesday, November 7, 2018, 8:30 AM - 11:00 AM

616. Chair

C. I. Petkov
Institute of Neuroscience, Newcastle University, Newcastle upon Tyne, UNITED KINGDOM.

Time: Wednesday, November 7, 2018, 8:30 AM - 11:00 AM

616. Co Chair

A. Friederici
Cognitive and Brain Sciences, Max Planck Institute, Leipzig, GERMANY.

Time: Wednesday, November 7, 2018, 8:30 AM - 8:35 AM

616.01. Introduction

Time: Wednesday, November 7, 2018, 8:35 AM - 9:10 AM

616.02. Language in our brain: The origins of a uniquely human capacity

A. Friederici
Cognitive and Brain Sciences, Max Planck Institute, Leipzig, GERMANY.

Time: Wednesday, November 7, 2018, 9:10 AM - 9:45 AM

616.03. The temporal structure of perception and production: An evolutionary linking hypothesis

D. Poeppel
Psychology, New York University, New York City.

Time: Wednesday, November 7, 2018, 9:45 AM - 10:20 AM

616.04. Structured sequence learning, language evolution, and primate fronto-temporal neural systems

C. I. Petkov
Institute of Neuroscience, Newcastle University, Newcastle upon Tyne, UNITED KINGDOM.

Time: Wednesday, November 7, 2018, 10:20 AM - 10:55 AM

616.05. Conserved neural coding principles and generative models for songbird communication and natural language

T. Gentner
Psychology, UCSD, La Jolla, CA.

Time: Wednesday, November 7, 2018, 10:55 AM - 11:00 AM

616.06. Closing Remarks

Minisymposium

617. Human Stem Cell Models to Validate Rare and Common Variants Contributing to Neurodevelopmental Disorders

Theme I: Techniques

Location: SDCC 6C

Time: Wednesday, November 7, 2018, 8:30 AM - 11:00 AM

As genetic studies identify a growing list of variants underlying neuropsychiatric disease and addiction, unraveling how these risk factors interact within and between the diverse cell types of the brain becomes critical. This minisymposium will discuss recent molecular and phenotypic insight uncovered using hiPSC-derived neurons and glia, with a focus on integrating these findings with datasets generated from consortia-led genomic and post-mortem studies of large patient cohorts.

Time: Wednesday, November 7, 2018, 8:30 AM - 11:00 AM

617. Chair

K. Brennand
Department of Genetics and Genomics, Icahn School of Medicine at Mount Sinai, New York, NY.

Time: Wednesday, November 7, 2018, 8:30 AM - 8:35 AM

617.01. Introduction

Time: Wednesday, November 7, 2018, 8:35 AM - 8:55 AM

617.02. Functional inference and CRISPR editing of noncoding risk variants of schizophrenia in hiPSC model

J. Duan
Department of Psychiatry and Behavioral Sciences, NorthShore University Healthsystem/University of Chicago, Evanston, IL.

Time: Wednesday, November 7, 2018, 8:55 AM - 9:15 AM

617.03. Interrogating convergent cell and molecular phenotypes across neuropsychiatric disorders with iPSC technology

A. E. Urban
School of Medicine, Stanford University, Palo Alto, CA.

Time: Wednesday, November 7, 2018, 9:15 AM - 9:35 AM

617.04. Using induced human neurons to study addiction related gene variants

Z. Pang
Child Health Institute of New Jersey, Rutgers, New Brunswick, NJ.

Time: Wednesday, November 7, 2018, 9:35 AM - 9:55 AM

617.05. Convergence of independent DISC1 mutations on impaired neurite growth via decreased UNC5D expression

T. L. Young-Pearse
Dept Neurology, Brigham and Women's Hospital, Harvard Medical School, Boston, MA.

Time: Wednesday, November 7, 2018, 9:55 AM - 10:15 AM

617.06. Evaluating the contribution of rare and common variants to genetic risk for schizophrenia using stem cells

K. Brennand
Department of Genetics and Genomics, Icahn School of Medicine at Mount Sinai, New York, NY.

Time: Wednesday, November 7, 2018, 10:15 AM - 10:35 AM

617.07. Using human stem cell models to elucidate molecular mechanisms in Autism Spectrum Disorder

L. Barrett
Stanley Center for Psychiatric Research at the Broad Institute, Broad Institute, Cambridge, MA.

Time: Wednesday, November 7, 2018, 10:35 AM - 11:00 AM

617.08. Closing Remarks

Minisymposium

618. Novel Molecular Targets for the Treatment of Pain

Theme D: Sensory Systems

Location: SDCC 6E

Time: Wednesday, November 7, 2018, 8:30 AM - 11:00 AM

The opioid crisis and the side effects of opioid therapy have illustrated the great medical and scientific need for new pain therapies that do not have the drawbacks of opioids. Covering topics ranging from downstream molecular signaling effectors of opioid receptors to new receptor targets, this minisymposium will highlight recent advances in finding new molecular targets for the treatment of pain and explore how these targets can be manipulated to improve pain and/or opioid therapy.

Time: Wednesday, November 7, 2018, 8:30 AM - 11:00 AM

618. Chair

J. M. Streicher
Pharmacology, University of Arizona, Tucson, AZ.

Time: Wednesday, November 7, 2018, 8:30 AM - 11:00 AM

618. Co Chair

T. Largent-Milnes
Pharmacology, University of Arizona, Tucson, AZ.

Time: Wednesday, November 7, 2018, 8:30 AM - 8:35 AM

618.01. Introduction

Time: Wednesday, November 7, 2018, 8:35 AM - 8:55 AM

618.02. Spinal cord heat shock protein 90 as a novel target to enhance opioid analgesia and reduce side effects

J. M. Streicher
Pharmacology, University of Arizona, Tucson, AZ.

Time: Wednesday, November 7, 2018, 8:55 AM - 9:15 AM

618.03. Sex differences in targeting ion anti-porters for pain

T. Largent-Milnes
Pharmacology, University of Arizona, Tucson, AZ.

Time: Wednesday, November 7, 2018, 9:15 AM - 9:35 AM

618.04. Opioid and neurokinin receptor signaling platforms for pain and analgesia

M. Canals
Drug Discovery Biology, Monash University, Melbourne, AUSTRALIA.

Time: Wednesday, November 7, 2018, 9:35 AM - 9:55 AM

618.05. Anti-nociceptive potential for novel allosteric modulators of the type 1 cannabinoid receptor

R. Laprairie
College of Pharmacy and Nutrition, University of Saskatchewan, Saskatoon, SK, CANADA.

Time: Wednesday, November 7, 2018, 9:55 AM - 10:15 AM

618.06. Molecular targets downstream of A_3AR agonism in chronic pain states

T. Doyle
Pharmacology and Physiology, Saint Louis University, St Louis, MO.

Time: Wednesday, November 7, 2018, 10:15 AM - 10:35 AM

618.07. Resolving inflammatory pain by macrophages and specialized pro-resolving mediators

R. Ji
Medical Center, Duke University, Durham, NC.

Time: Wednesday, November 7, 2018, 10:35 AM - 11:00 AM

618.08. Closing Remarks

Minisymposium

619. The Endolysosomal System and Proteostasis: From Development to Degeneration

Theme C: Neurodegenerative Disorders and Injury

Location: SDCC 28A

Time: Wednesday, November 7, 2018, 8:30 AM - 11:00 AM

Intracellular membrane trafficking represents a very unique challenge for neurons because of their highly elaborate cellular architecture. Genes regulating endocytosis and subsequent endosomal routing, in particular, are frequently linked to neurological diseases. This minisymposium will discuss novel insight into the mechanisms of endosomal trafficking in neurons, the effects on proteostasis, and the functional impact on neuronal development and degeneration.

Time: Wednesday, November 7, 2018, 8:30 AM - 11:00 AM

619. Chair

H. Zhang
Neuroscience and Cell Biology, Rutgers Robert Wood Johnson Medical School, Piscataway, NJ.

Time: Wednesday, November 7, 2018, 8:30 AM - 11:00 AM

619. Co Chair

B. R. Winckler
Cell Biology, University of Virginia, Charlottesville, VA.

Time: Wednesday, November 7, 2018, 8:30 AM - 8:35 AM

619.01. Introduction

Time: Wednesday, November 7, 2018, 8:35 AM - 8:55 AM

619.02. Proteostasis in dendrites: Regulating endosomal flux for lysosomal degradation

B. R. Winckler
Cell Biology, University of Virginia, Charlottesville, VA.

Time: Wednesday, November 7, 2018, 8:55 AM - 9:15 AM

619.03. Systems analysis of neurodevelopmental and neurodegenerative mechanisms in Menkes disease

V. Faundez
Cell Biology, Emory University, Atlanta, GA.

Time: Wednesday, November 7, 2018, 9:15 AM - 9:35 AM

619.04. Neuronal autophagy and intercellular regulation of homeostasis in the brain

S. Maday
Neuroscience, University of Pennsylvania, Philadelphia, PA.

Time: Wednesday, November 7, 2018, 9:35 AM - 9:55 AM

619.05. Axonal transport and autophagy-lysosomal regulation in Alzheimer’s disease

Q. Cai
Cell Biology and Neuroscience, Rutgers, The State University of New Jersey, Piscataway, NJ.

Time: Wednesday, November 7, 2018, 9:55 AM - 10:15 AM

619.06. Endosomal trafficking defects and Alzheimer’s disease

C. Almeida
CHRONIC DISEASES RESEARCH CENTER, Nova University of Lisbon, Lisboa, PORTUGAL.

Time: Wednesday, November 7, 2018, 10:15 AM - 10:35 AM

619.07. Par polarity proteins in endolysosomal trafficking and Alzheimer's disease

H. Zhang
Neuroscience and Cell Biology, Robert Wood Johnson Medical School, Rutgers University, Piscataway, NJ.

Time: Wednesday, November 7, 2018, 10:35 AM - 11:00 AM

619.08. Closing Remarks

Minisymposium

620. Neural Proteomics in Synapse Development and Function

Theme A: Development

Location: SDCC 29D

Time: Wednesday, November 7, 2018, 8:30 AM - 11:00 AM

An explosion of proteomic approaches is increasingly playing a greater role in understanding synapse biology, via identification of novel protein interactions and signaling networks that regulate synapses. This minisymposium will explore synapse biology across model systems, with insight stemming from proteomics. Cutting-edge experimental strategies for quantitative profiling and interactome mapping reveal biology underlying synapse formation, function, and its role in physiology and disease.

Time: Wednesday, November 7, 2018, 8:30 AM - 11:00 AM

620. Chair

B. Grill
Neuroscience, Scripps Research Institute, Jupiter, FL.

Time: Wednesday, November 7, 2018, 8:30 AM - 11:00 AM

620. Co Chair

K. A. Martemyanov
Neuroscience, Scripps Research Institute, Jupiter, FL.

Time: Wednesday, November 7, 2018, 8:30 AM - 8:35 AM

620.01. Introduction

Time: Wednesday, November 7, 2018, 8:35 AM - 8:55 AM

620.02. Toward single-synapse proteome analysis

S. G. Grant
Department of Molecular Neuroscience, The University of Edinburgh, Edinburgh, UNITED KINGDOM.

Time: Wednesday, November 7, 2018, 8:55 AM - 9:15 AM

620.03. Mapping trans-synaptic interactions involved in function and wiring of the first visual synapse

K. A. Martemyanov
Neuroscience, Scripps Florida, Jupiter, FL.

Time: Wednesday, November 7, 2018, 9:15 AM - 9:35 AM

620.04. Chemogenetic and optogenetic tools for characterizing neuronal proteomes and transcriptomes

A. Ting
Genetics, Biology & Chemistry (by courtesy), Stanford University, Palo Alto, CA.

Time: Wednesday, November 7, 2018, 9:35 AM - 9:55 AM

620.05. Measuring neuron specific striatal synaptic proteomes

J. Savas
Neurology, Northwestern University, Chicago, IL.

Time: Wednesday, November 7, 2018, 9:55 AM - 10:15 AM

620.06. Cell-type specific neuronal proteomes

E. M. Schuman
Max Planck Institute for Brain Research, Max Planck Institute for Brain Research, Frankfurt, GERMANY.

Time: Wednesday, November 7, 2018, 10:15 AM - 10:35 AM

620.07. Deciphering the molecular mechanisms of synapse formation and axon termination using *C. elegans*

B. Grill
Neuroscience, The Scripps Research Institute, Jupiter, FL.

Time: Wednesday, November 7, 2018, 10:35 AM - 11:00 AM

620.08. Closing Remarks

Minisymposium

621. Cortical Control of Locomotion and Posture

Theme E: Motor Systems

Location: SDCC 31C

Time: Wednesday, November 7, 2018, 8:30 AM - 11:00 AM

Understanding mechanisms of complex natural movements is the ultimate goal of motor systems neuroscience. This minisymposium will discuss recent advances in locomotion and posture research gained in the freely behaving cat. Focusing on parietal, pre-motor, and motor cortical mechanisms of full body movements, it will include a new analytical description of corticospinal processing that allows steering, and a description of powered limb prosthesis integrated with nerves and muscles.

Time: Wednesday, November 7, 2018, 8:30 AM - 11:00 AM

621. Chair

I. N. Beloozerova
Neurobiology, Barrow Neurological Inst, Phoenix, AZ.

Time: Wednesday, November 7, 2018, 8:30 AM - 8:35 AM

621.01. Introduction

Time: Wednesday, November 7, 2018, 8:35 AM – 8:55 AM

621.02. The inverse model of the central pattern generator reveals motor systems dynamics of rhythmic and reaching movements

S. Yakovenko
Human Performance, West Virginia University, Morgantown, WV.

Time: Wednesday, November 7, 2018, 8:55 AM – 9:15 AM

621.03. Gaze behavior during walking

T. J. Rivers
Ecology and Evolutionary Biology, University of Kansas, Lawrence, KS.

Time: Wednesday, November 7, 2018, 9:15 AM – 9:35 AM

621.04. Contribution of cat premotor areas to visually-guided locomotion

T. Nakajima
Research Center for Brain Function and Medical Engineering, Asahikawa Medical University, Asahikawa, JAPAN.

Time: Wednesday, November 7, 2018, 9:35 AM – 9:55 AM

621.05. Parietal cortex contributions to working memory-guided obstacle avoidance

C. Wong
Physiology and Pharmacology, University of Western Ontario, London, ON, CANADA.

Time: Wednesday, November 7, 2018, 9:55 AM – 10:15 AM

621.06. Motor cortex for step accuracy and stability

B. Farrell
Physical Therapy, Georgia State University, Atlanta, GA.

Time: Wednesday, November 7, 2018, 10:15 AM – 10:35 AM

621.07. Cat locomotion with a powered prosthesis integrated with residual bone, skin, sensory nerves, and muscles

H. Park
Electrical & Computer Engineering, Texas A&M University, College Station, TX.

Time: Wednesday, November 7, 2018, 10:35 AM – 11:00 AM

621.08. Closing Remarks

Symposium

705. Unveiling the Extracellular Space of the Brain: From Super-Resolved Microstructure to *In Vivo* Function

Theme B: Neural Excitability, Synapses, and Glia

Location: SDCC 6A

Time: Wednesday, November 7, 2018, 1:30 PM - 4:00 PM

The extracellular space (ECS) of the brain provides the physical stage and signaling platform where neuronal and glial players perform in concert. While the ECS takes up a fifth of brain volume, its topology is incredibly complex and miniaturized, defying traditional investigative approaches. This symposium will review our current knowledge of the ECS, evaluating recent methodological and conceptual progress that throws new light on this understudied yet critically important compartment of the brain.

Time: Wednesday, November 7, 2018, 1:30 PM - 4:00 PM

705. Chair

V. U. Nägerl
Interdisciplinary Institute for Neuroscience, CNRS, University of Bordeaux, Bordeaux, FRANCE.

Time: Wednesday, November 7, 2018, 1:30 PM - 4:00 PM

705. Co Chair

S. Hrabetova
Department of Cell Biology, State University of New York, Downstate Medical Center, Brooklyn, NY.

Time: Wednesday, November 7, 2018, 1:30 PM - 1:35 PM

705.01. Introduction

Time: Wednesday, November 7, 2018, 1:35 PM - 2:10 PM

705.02. Exploring the structure and function of brain extracellular space with biophysical and computational methods

S. Hrabetova
Department of Cell Biology, State University of New York, Downstate Medical Center, Brooklyn, NY.

Time: Wednesday, November 7, 2018, 2:10 PM - 2:45 PM

705.03. Super-resolution imaging and local viscosity of the extracellular space in live brain tissue by single-nanotube tracking

L. Cognet
Institute of Optics, University of Bordeaux, Talence, FRANCE.

Time: Wednesday, November 7, 2018, 2:45 PM - 3:20 PM

705.04. STED imaging of extracellular space and its structural dynamics in live brain tissue

V. U. Nägerl
Interdisciplinary Institute for Neuroscience, CNRS, University of Bordeaux, Bordeaux, FRANCE.

Time: Wednesday, November 7, 2018, 3:20 PM - 3:55 PM

705.05. Use-dependent plasticity of synaptic microenvironment

D. Rusakov
Institute of Neurology, University College London, London, UNITED KINGDOM.

Time: Wednesday, November 7, 2018, 3:55 PM - 4:00 PM

705.06. Closing Remarks

Symposium

706. The Emerging Role of the Amygdala in Modulating the Somatosensory and Emotional Components of Pain and Itch

Theme F: Integrative Physiology and Behavior

Location: SDCC 6B

Time: Wednesday, November 7, 2018, 1:30 PM - 4:00 PM

Pain involves a complex mix of sensory, cognitive, and emotional processes. This symposium will address the emerging role of the amygdala in modulating all of these components in the mammalian limbic system. Speakers will provide important and novel mechanistic insight at the cellular, synaptic, and circuit levels achieved through cutting-edge microscopy, recording, and rodent behavioral techniques.

Time: Wednesday, November 7, 2018, 1:30 PM - 4:00 PM

706. Chair

B. J. Kolber
Biological Sciences, Duquesne University, Pittsburgh, PA.

Time: Wednesday, November 7, 2018, 1:30 PM - 1:35 PM

706.01. Introduction

Time: Wednesday, November 7, 2018, 1:35 PM - 2:10 PM

706.02. Cell-type-specific ON/OFF switch for pain in the central amygdala

Y. Carrasquillo
National Center for Complementary and Alternative Medicine, National Institutes of Health, Bethesda, MD.

Time: Wednesday, November 7, 2018, 2:10 PM - 2:45 PM

706.03. Amygdala CRF neurons: Pain-related neuroplasticity and behavioral consequences

V. Neugebauer
Pharmacology and Neuroscience, Texas Tech University Health Sciences Center, Lubbock, TX.

Time: Wednesday, November 7, 2018, 2:45 PM - 3:20 PM

706.04. The central amygdala regulates widespread mechanical sensitivity

F. Kato
Neuroscience, Jikei University School of Medicine, Tokyo, JAPAN.

Time: Wednesday, November 7, 2018, 3:20 PM - 3:55 PM

706.05. Functional and genetic dissection of central amygdala neurons underlying sensory and aversive components of itch

R. W. Gereau, IV
Anesthesiology, Washington University School of Medicine, St. Louis, MO.

Time: Wednesday, November 7, 2018, 3:55 PM - 4:00 PM

706.06. Closing Remarks

Minisymposium

707. From Recent to Remote Memory and Back

Theme H: Cognition

Location: SDCC 6C

Time: Wednesday, November 7, 2018, 1:30 PM - 4:00 PM

What makes some memories fade rapidly and others persist for a lifetime? Studies have indicated that recent and remote memories of a similar experience have different qualities and may be supported by different brain circuits. Integrating knowledge from ongoing work, this minisymposium brings together experts studying the topic at different levels of organization, measuring how networks, neurons, and spines change over time, and manipulating neurons and glia to test their involvement in long-term memory.

Time: Wednesday, November 7, 2018, 1:30 PM - 4:00 PM

707. Chair

Y. Ziv
Neurobiology, Weizmann Institute of Science, Rehovot, ISRAEL.

Time: Wednesday, November 7, 2018, 1:30 PM - 4:00 PM

707. Co Chair

I. Goshen
Edmond and Lily Safra Center For Brain Sciences, The Hebrew University, Jerusalem, ISRAEL.

Time: Wednesday, November 7, 2018, 1:30 PM - 1:35 PM

707.01. Introduction

Time: Wednesday, November 7, 2018, 1:35 PM - 1:55 PM

707.02. Identification of an inhibitory hippocampal-thalamic pathway that is necessary for remote memory retrieval

F. Xia
Hospital for Sick Children, Toronto, ON, CANADA.

Time: Wednesday, November 7, 2018, 1:55 PM - 2:15 PM

707.03. Prefrontal circuit dynamics in goal directed memory

P. Rajasethupathy
Neuroscience and Behavior, Rockefeller University, New York, NY.

Time: Wednesday, November 7, 2018, 2:15 PM - 2:35 PM

707.04. Hippocampal mechanisms for memory retrieval

B. J. Wiltgen
Center for Neuroscience, UC Davis, Davis, CA.

Time: Wednesday, November 7, 2018, 2:35 PM - 2:55 PM

707.05. Cellular substrates for network information processing in hippocampal CA1

A. Attardo
Psychiatry, Max Planck Institute of Psychiatry, Munich, GERMANY.

Time: Wednesday, November 7, 2018, 2:55 PM - 3:15 PM

707.06. Bidirectional recent and remote memory modulation by CA1 astrocytes manipulation

I. Goshen
Edmond and Lily Safra Center For Brain Sciences, The Hebrew University, Jerusalem, ISRAEL.

Time: Wednesday, November 7, 2018, 3:15 PM - 3:35 PM

707.07. Stability and dynamics in neural codes for long-term memory of places and events

Y. Ziv
Neurobiology, Weizmann Institute of Science, Rehovot, ISRAEL.

Time: Wednesday, November 7, 2018, 3:35 PM - 4:00 PM

707.08. Closing Remarks

Minisymposium

708. The Basal Ganglia: Beyond Action Selection

Theme E: Motor Systems

Location: SDCC 6E

Time: Wednesday, November 7, 2018, 1:30 PM - 4:00 PM

New approaches — both behavioral and physiological — have enabled a new depth of interrogation of the neural correlates of behavior. Perhaps nowhere has this process been more powerful than in the basal ganglia, where recent insight is shifting the operational paradigm of function from a binary gating of action to a nuanced shaping of behavior. This minisymposium will cover the implications of animal model work and connect findings with human studies of healthy and clinical subjects.

Time: Wednesday, November 7, 2018, 1:30 PM - 4:00 PM

708. Chair

E. A. Yttri
Biological Sciences, Carnegie Mellon University, Pittsburgh, PA.

Time: Wednesday, November 7, 2018, 1:30 PM - 1:35 PM

708.01. Introduction

Time: Wednesday, November 7, 2018, 1:35 PM - 1:55 PM

708.02. A role for the basal ganglia: Superior colliculus circuit in decision-making

M. Basso
UCLA, Los Angeles, CA.

Time: Wednesday, November 7, 2018, 1:55 PM - 2:15 PM

708.03. The missing, the short, and the long: Levodopa responses and dopamine actions

R. Albin
University of Michigan, Ann Arbor, MI.

Time: Wednesday, November 7, 2018, 2:15 PM - 2:35 PM

708.04. Action monitoring and learning functions of the dorsal striatum

D. M. Robbe
Institut de Neurobiologie de la Méditerranée, Marseille, FRANCE.

Time: Wednesday, November 7, 2018, 2:35 PM - 2:55 PM

708.05. Basal ganglia and cortex: Who's in charge here?

R. S. Turner
Department of Neurobiology, University of Pittsburgh, Pittsburgh, PA.

Time: Wednesday, November 7, 2018, 2:55 PM - 3:15 PM

708.06. How does the GPe fit into the indirect pathway?

A. Gittis
Carnrgie Mellon University, Pittsburgh, PA.

Time: Wednesday, November 7, 2018, 3:15 PM - 3:35 PM

708.07. The role of the cortico-striatal axis in goal-oriented movement

E. A. Yttri
Neurobiology, Carnegie Mellon University, Pittsburg, PA.

Time: Wednesday, November 7, 2018, 3:35 PM - 4:00 PM

708.08. Closing Remarks

Minisymposium

709. Sonic Hedgehog and Cell-Specific Programming: Circuits, Disease, and Repair

Theme A: Development

Location: SDCC 28A

Time: Wednesday, November 7, 2018, 1:30 PM - 4:00 PM

An emerging body of research has uncovered diverse roles for Sonic Hedgehog signaling in a wide range of neurodevelopmental contexts affecting the function of brain circuits, including the production and maintenance of diverse cell types and the establishment of cell-specific wiring. This minisymposium will highlight recent developments describing the role of Sonic Hedgehog in conferring cell specific identity, circuit connectivity, and injury repair in the developing and mature nervous system.

Time: Wednesday, November 7, 2018, 1:30 PM - 4:00 PM

709. Chair

C. C. Harwell
Neurobiology, Harvard Medical School, Boston, MA.

Time: Wednesday, November 7, 2018, 1:30 PM - 4:00 PM

709. Co Chair

R. Ihrie
Cell and Developmental Biology, Vanderbilt University, Nashville, TN.

Time: Wednesday, November 7, 2018, 1:30 PM - 1:35 PM

709.01. Introduction

Time: Wednesday, November 7, 2018, 1:35 PM - 1:55 PM

709.02. Making bigger and folded brains: Conserved functions of hedgehog signaling

Y. Han
Developmental Neurobiology, St. Jude Children's Research Hospital, Memphis, TN.

Time: Wednesday, November 7, 2018, 1:55 PM - 2:15 PM

709.03. Positional identity, Hh signaling, and mTOR in the postnatal stem cell niche

R. Ihrie
Cell and Developmental Biology, Vanderbilt University, Nashville, TN.

Time: Wednesday, November 7, 2018, 2:15 PM - 2:35 PM

709.04. Neurons diversify astrocytes in the adult cerebellum through sonic hedgehog signaling

T. Farmer
Centre for Research in Neuroscience, McGill University Health Centre, Montreal, QC, CANADA.

Time: Wednesday, November 7, 2018, 2:35 PM - 2:55 PM

709.05. Sonic hedgehog signaling in astrocyte-synapse interactions

D. Garcia
Department of Biology, Drexel University, Philadelphia, PA.

Time: Wednesday, November 7, 2018, 2:55 PM - 3:15 PM

709.06. Hedgehog interacting protein in visual circuit development

J. Triplett
Center for Neuroscience Research, Childrens National Medical Center, Washington, DC.

Time: Wednesday, November 7, 2018, 3:15 PM - 3:35 PM

709.07. Neuron derived Sonic hedgehog directs cortical circuit assembly

C. C. Harwell
Neurobiology, Harvard Medical School, Boston, MA.

Time: Wednesday, November 7, 2018, 3:35 PM - 4:00 PM

709.08. Closing Remarks

Minisymposium

710. Multitransmitter Neurons: The Function and Regulation of Neurotransmitter Cotransmission

Theme B: Neural Excitability, Synapses, and Glia

Location: SDCC 29D

Time: Wednesday, November 7, 2018, 1:30 PM - 4:00 PM

Many neurons signal through multiple small-molecule neurotransmitters, adding an additional layer of complexity to our understanding of synaptic transmission. This minisymposium will discuss recent examples of multitransmitter neurons, emphasizing the physiological and behavioral function of cotransmission and how the neurotransmitter(s) a neuron releases may be regulated by development or activity.

Time: Wednesday, November 7, 2018, 1:30 PM - 4:00 PM

710. Chair

A. J. Granger
Harvard Medical School, Boston, MA.

Time: Wednesday, November 7, 2018, 1:30 PM - 1:35 PM

710.01. Introduction

Time: Wednesday, November 7, 2018, 1:35 PM - 1:55 PM

710.02. Layer- and cell type-selective co-transmission by a basal forebrain cholinergic projection to the olfactory bulb

R. P. Seal
Neurobiology, University of Pittsburgh, Pittsburgh, PA.

Time: Wednesday, November 7, 2018, 1:55 PM - 2:15 PM

710.03. Role of glutamate co-release in selective dopamine neuron degeneration

T. S. Hnasko
Department of Neuroscience, University of California, San Diego, La Jolla, CA.

Time: Wednesday, November 7, 2018, 2:15 PM - 2:35 PM

710.04. The fine balancing act of direction selective GABAergic/cholinergic retinal starburst amacrine cells

G. Awatramani
Biology, University of Victoria, Victoria, BC, CANADA.

Time: Wednesday, November 7, 2018, 2:35 PM - 2:55 PM

710.05. The function of GABA co-release from excitatory basal ganglia inputs to the lateral habenula

S. Shabel
Psychiatry, Neuroscience, UT Southwestern Medical Center, Dallas, TX.

Time: Wednesday, November 7, 2018, 2:55 PM - 3:15 PM

710.06. Dynamic co-expression and co-transmission of acetylcholine and glutamate from adult zebrafish motoneurons to regulate locomotion

K. Ampatzis
Neuroscience, Karolinska Institutet, Department of Neuroscience, Solna, SWEDEN.

Time: Wednesday, November 7, 2018, 3:15 PM - 3:35 PM

710.07. Function of GABA co-transmission from dopamine neurons

Y. Zhang
Physiology, Anatomy, and Genetics, University of Oxford, Oxford, UNITED KINGDOM.

Time: Wednesday, November 7, 2018, 3:35 PM - 4:00 PM

710.08. Closing Remarks