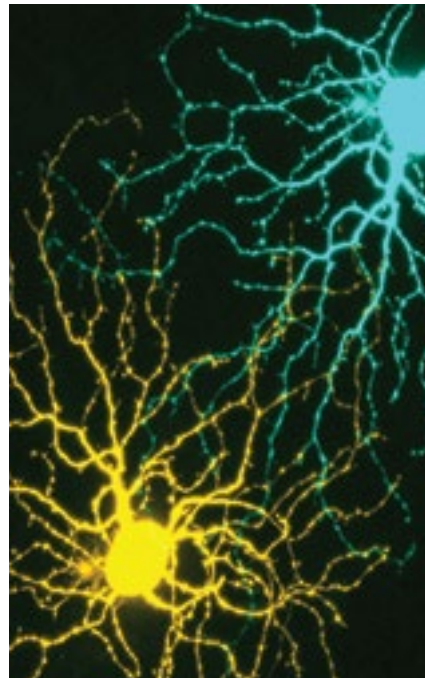




Neuroscience
2015

CHICAGO

OCTOBER 17 - 21

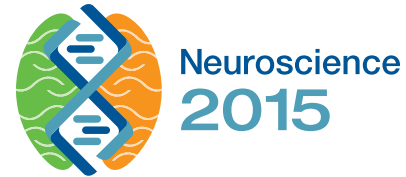


Preliminary Program

go.sfn.org/prelim2015



SOCIETY *for*
NEUROSCIENCE



Be a part of scientific discovery as it happens at Neuroscience 2015

Neuroscience 2015 convenes researchers and clinicians of all levels and backgrounds to share groundbreaking results, theories, and discoveries to bring the world closer to new breakthroughs in neuroscience.

Join us in Chicago for five days of science, networking, education, and career opportunities — and explore Chicago and its architecture, cuisine, and culture!

Discover Breakthroughs

Learn from the top minds in the field, view nearly 15,000 abstracts, and attend lectures, symposia, satellite events, and workshops.

Experience Innovative Technology

Explore hundreds of exhibits featuring new products and solutions to help advance your science.

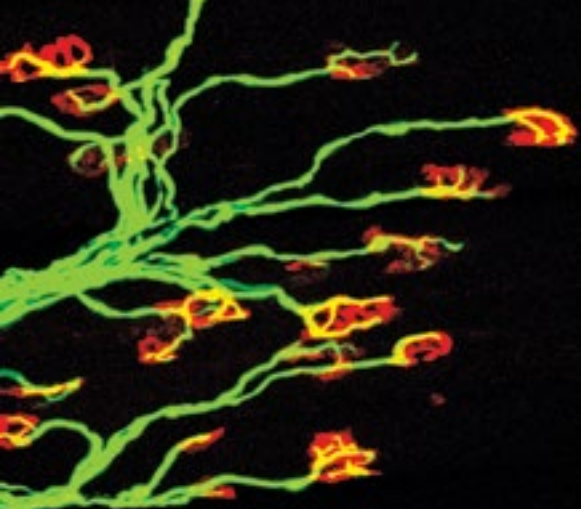
Jump-Start Your Career

Participate in a professional development workshop, connect with a mentor, visit the NeuroJobs Career Center, and learn about educational options at the Graduate School Fair.

SfN members can save up to \$390 and student members can save up to \$195 on Neuroscience 2015 registration. Residents of developing countries also can attend Neuroscience 2015 at discounted registration rates.

Neuroscience 2015 is where innovation and collaboration happen.

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Presidential Special Lectures

Themes and Variations in Circuits and Behavior **CME**

Saturday, Oct. 17, 5:15–6:25 p.m.



Cori Bargmann, PhD
Howard Hughes
Medical Institute
*The Rockefeller
University*

Behavior is variable, both within and between individuals. The nematode worm *C. elegans* allows scientists to explore how genes, neurons, circuits, and the environment interact to give rise to flexible behaviors. Studies of *C. elegans* foraging behaviors have provided insights into three levels of behavioral variability: the gating of information flow by circuit state over seconds, the extrasynaptic regulation of circuits by neuropeptides and neuromodulators over minutes, and natural genetic variation.

The Molecular Logic of Neural Circuits: Implications for Autism and Schizophrenia **CME**

Sunday, Oct. 18, 5:15–6:25 p.m.



Thomas C. Südhof, MD
Howard Hughes
Medical Institute
*Stanford University
School of Medicine*

Neural circuits process information by transmitting and computing signals at synapses. The hypothesis is that interactions between trans-synaptic cell-surface molecules, such as neuroligins, determine the molecular logic of neural circuits, and that some autism and schizophrenia syndromes are produced by impairments in this molecular logic, as evidenced by neuroligin mutations in autism and schizophrenia. With these hypotheses, the lecturer will provide a conceptual framework for understanding neural circuits in health and disease.

Immune Mechanisms of Synapse Loss in Health and Disease **CME**

Monday, Oct. 19, 5:15–6:25 p.m.



Beth Stevens, PhD
Boston Children's
Hospital
Harvard Medical School

How synapses are eliminated in the developing and diseased brain remains a mystery. During development, synaptic pruning is required for precise wiring and emerging evidence implicates immune-related molecules and immune cells called microglia. This talk will review research on how these pathways regulate the formation, refinement, and elimination of specific axons and synapses during development. The discoveries suggest ways of protecting synapses in neurodegenerative and psychiatric disorders involving synapse loss.

Grid Cells and Cortical Maps for Space **CME**

Tuesday, Oct. 20, 5:15–6:25 p.m.



May-Britt Moser, PhD
Kavli Institute for Systems
Neuroscience and
Centre for Neural
Computation
*Norwegian University of
Science and Technology*

The medial entorhinal cortex (MEC) is part of the brain's circuit for dynamic representation of self-location. The metric of this representation is provided by grid cells — cells with spatial firing fields that tile environments in a periodic hexagonal pattern. This lecture will discuss the morphological identity of cells that express this pattern, how they are organized, how they interact with the environment, and how grid cells and place cells contribute to a wider circuit for goal-directed navigation.

Featured Lectures

DAVID KOPF LECTURE ON NEUROETHICS Giving Voice to Consciousness: Neuroethics, Human Rights, and the Indispensability of Neuroscience

Joseph J. Fins, MD

Weill Medical College,
Cornell University

*Support contributed by:
David Kopf Instruments*

Monday, Oct. 19, 11:30 a.m.–12:40 p.m.

The ability of neuroprosthetics to restore functional communication in patients with disorders of consciousness has the potential to reintegrate patients into the nexus of family and community. As a worthy scientific pursuit, Fins will argue that this effort is a moral imperative that links respect for persons with the reemergence of voice out of covert consciousness. As such, it is a human rights issue for a population too long marginalized. For rights to come to mind, patients will need greater access to medical care and research and the skilled engagement of the neuroscience community.



ALBERT AND ELLEN GRASS LECTURE CME Receptors, Neurons, and Circuits: The Biology of Mammalian Taste

Charles Zuker, PhD

Howard Hughes
Medical Institute
Columbia University

*Support contributed by:
The Grass Foundation*

Monday, Oct. 19, 3:15–4:25 p.m.

The taste system is one of our fundamental senses, responsible for detecting and responding to sweet, bitter, umami, salty, and sour stimuli. Zuker's laboratory studies the logic of taste coding as a platform to understand how the brain creates an internal representation



of the outside world and transforms sensory signals at the periphery into percepts, actions, and behaviors.

FRED KAVLI HISTORY OF NEUROSCIENCE LECTURE 100 Years of Stress and the HPA Axis

Mary F. Dallman, PhD

University of California,
San Francisco

*Support contributed by:
The Kavli Foundation*

Tuesday, Oct. 20, 2:30–3:40 p.m.

In 1915, Walter B. Cannon described responses to a variety of stressors and concluded that stress causes changes in the brain and body that are preparatory for behaviors such as fight or flight. From subcellular to psychological levels, enormous conceptual and methodological advances have occurred in understanding stress and responses of the brain-HPA and sympathetic nervous system axes in the last century. These advances tend to be isolated within, but not across, disciplines. Our current knowledge provides far greater detail of understanding and it does not change the conclusions drawn by Cannon.



DIALOGUES BETWEEN NEUROSCIENCE AND SOCIETY

Neuroscience and the Law: Strange Bedfellows

Chair: Jed S. Rakoff, JD

US District Court, Southern District of New York

Support contributed by: Elsevier
Saturday, Oct. 17, 11 a.m.–1 p.m.

Neuroscience is a hot topic with lawyers and judges, as recent advances in our understanding of the brain have raised important and unexpected implications for the development and application of legal principles. These implications, however, can sometimes be overstated, which presents a potential for abuse and warrants caution. Hear Senior U. S. District Judge Jed S. Rakoff, a founding member of the MacArthur Foundation Project on Law and Neuroscience, explore the legal and ethical questions raised as neuroscience enters the courtroom and affects the judicial system.

Special Lectures

THEME A: DEVELOPMENT

Development and Reprogramming of Neuronal Diversity in the Central Nervous System CME

Paola Arlotta, PhD

Harvard University

The mammalian central nervous system (CNS) contains an unparalleled diversity of neuronal subtypes, which are largely generated during embryonic development and maintained unchanged in the adult. This lecture will cover progress made in understanding the regulatory, molecular logic that shapes neuronal diversity in the embryo, consider its importance for CNS assembly and function, and discuss recent evidence for the unexpected capacity of central neurons to post-mitotically “reprogram” their class-specific features.

Genetic Dissection of Neocortical Circuits CME

Z. Josh Huang, PhD

Cold Spring Harbor Laboratory

The computational power of the neocortex emerges from a basic neural architectural plan rooted in the genome and conserved across species. Whereas a set of glutamatergic projection neurons constitute inter-areal processing streams and cortical output channels, diverse GABAergic interneurons regulate the spatiotemporal configuration of neural ensembles. Systematic cell targeting and cell fate mapping provide entry points for integrating multiple approaches toward understanding the assembly and organization of cortical circuits. This lecture will discuss the progress and prospect on genetic targeting of glutamatergic and GABAergic neurons in the mouse, focusing on the construction and function of a chandelier cell-pyramidal cell module.

The Genetic Logic of Synapse Formation and Axon Regeneration CME

Yishi Jin, PhD

Howard Hughes Medical Institute
University of California, San Diego

Genetic dissection in *C. elegans* has long been a powerful approach to discover the function of genes and to elucidate the molecular and cellular network underlying how synapses form and function. Recent technological innovation using laser surgery of single axons and *in vivo* imaging has also made *C. elegans* a new model for axon regeneration. Importantly, genes regulating synaptogenesis and axon regeneration are highly conserved in function across animal phyla. This lecture will focus on the key findings and discuss implications to human health.

THEME B: NEURAL EXCITABILITY, SYNAPSES, AND GLIA: CELLULAR MECHANISMS

From Spontaneous Neurotransmitter Release to Rapid Antidepressant Action CME

Ege T. Kavalali, PhD

University of Texas Southwestern
Medical Center

Recent studies report a key role for spontaneous neurotransmission in regulation of synaptic plasticity, homeostasis, and behavior such as rapid antidepressant responses. There is also increasing evidence that the presynaptic basis of spontaneous neurotransmitter release events and their postsynaptic targets are segregated from those of evoked release, suggesting an autonomous role for spontaneous neurotransmission in neuronal signaling. This presentation will discuss these recent studies on the mechanisms and functions of spontaneous neurotransmitter release.

Inhibition and Excitation in the Cerebellar Nuclei CME

Indira M. Raman, PhD

Northwestern University

Neurons in the cerebellar nuclei integrate high-frequency inhibition from convergent Purkinje cells with excitation from diverse mossy fibers to generate cerebellar outputs that lead to regulation of precise motor behaviors. This lecture will include a discussion of the synaptic and cellular specializations of Purkinje neurons, mossy fibers, and neurons of the cerebellar nuclei that contribute to information coding by the cerebellum in mice.

Strange Synapses and Circuits of the Basal Ganglia CME

Bernardo Sabatini, MD, PhD

Harvard Medical School

The basal ganglia are a phylogenetically old and evolutionarily conserved set of nuclei crucial for goal-oriented motor action. Nevertheless, many aspects of their circuitry, function, and regulation remain mysterious. Sabatini will present recent work from his group revealing complex and unexpected interactions between nuclei of the basal ganglia. These include the surprisingly widespread use of multiple fast-acting neurotransmitters by neuromodulatory systems. The results will be discussed in terms of action initiation and reinforcement.

THEME C: DISORDERS OF THE NERVOUS SYSTEM

CLINICAL NEUROSCIENCE LECTURE Neurotrophin Signaling and Epileptogenesis: Mechanistic and Therapeutic Insights CME

James O. McNamara, MD

Duke University Medical Center

The lack of preventive treatments for common diseases of the nervous system is a glaring

unmet medical need. Temporal lobe epilepsy is a common and devastating disease. An episode of prolonged seizures in an otherwise healthy individual is thought to cause severe temporal lobe epilepsy emerging years later. Recent discoveries have identified targets and therapies to prevent this disease in experimental animals. This presentation will review these discoveries and focus on the causal role of excessive neurotrophin signaling in development of temporal lobe epilepsy.

Striatal Synaptic Dysfunction in Parkinson's and Huntington's Diseases CME

D. James Surmeier, PhD

Feinberg School of Medicine
Northwestern University

Traditional models of basal ganglia disorders are grounded in the assumption that network dysfunction is driven by alterations in intrinsic excitability of striatal neurons. Recent work has challenged this assumption, showing that mouse models of Parkinson's disease have profound cell-specific alterations in striatal synaptic strength and connectivity. Cell-specific synaptic dysfunction also is being found in mouse models of Huntington's disease. This talk will summarize this work and link it to the motor symptoms of these two diseases.

THEME D: SENSORY AND MOTOR SYSTEMS

Cortical Control of Arm Movements: A Dynamical Systems Perspective CME

Krishna V. Shenoy, PhD

Stanford University

Investigating the neural control of arm movements has involved, primarily, either attempts to account for single-neuron responses in terms of tuning for movement parameters or attempts to decode movement

Special Lectures (cont.)

parameters from populations of tuned neurons. These have led to many seminal advances but have not produced an agreed-upon conceptual framework. This lecture will review how a dynamical systems perspective may help researchers understand why motor cortical activity evolves the way it does, how it relates to movement parameters, and how a unified conceptual framework may result.

THEME E: INTEGRATIVE SYSTEMS: NEUROENDOCRINOLOGY, NEUROIMMUNOLOGY, AND HOMEOSTATIC CHALLENGE

GPS Mechanisms of Migrating Monarch Butterflies CME

Steven M. Reppert, MD

University of Massachusetts Medical School

This lecture will focus on the navigational mechanisms exploited by eastern North American monarch butterflies during their iconic fall migration. This includes use of a time-compensated sun compass and of a light-dependent inclination magnetic compass. Genomic and genetic strategies have been developed to define the genetic underpinning of the migration. The monarch butterfly has emerged as a model system to study the neural, molecular, and genetic basis of long-distance animal migration.

Neurocircuitry Controlling Feeding and Drinking Behaviors in Mice CME

Richard Palmiter, PhD

University of Washington

The development of genetic, viral, and optical technologies has revolutionized approaches for dissecting neuronal circuits that control basic behaviors and physiological process, including ingestion. Selective activation of specific neurons stimulates robust feeding or drinking,

while activation of other neurons inhibits feeding or drinking. Deciphering the neuronal circuits engaged by these manipulations and the molecular phenotype of neurons involved is an ongoing endeavor.

THEME F: COGNITION AND BEHAVIOR

A Causal Analysis of the Attentional Network CME

Robert Desimone, PhD

McGovern Institute for Brain Research at MIT

The most behaviorally-relevant stimuli in scenes are selected for processing and control over behavior ("attention"). The effects of selection are widespread, making it difficult to distinguish cause from effect in the attentional network. However, the flow of control can be inferred through the analysis of timing, and the use of "causal" methods such as pharmacological inactivation and optogenetics, to establish the impact of one circuit on another. New insights into the biological mechanism of attention are beginning to emerge.

Making, Breaking, and Linking Engrams CME

Sheena A. Josselyn, PhD

Hospital for Sick Children

A fundamental goal of neuroscience is to understand how information is encoded, stored, linked, and used in the brain. The physical or functional representation of a memory (the memory trace or "engram") is thought to be sparsely encoded over a distributed memory network. However, identifying the precise neurons that make up a given engram has challenged scientists since Karl Lashley conceded defeat in his "search for the engram" in 1950. This lecture will discuss new insights into how engrams are formed, linked, and used.

Uncertainty, Choice, and Dopamine CME

Stan B. Floresco, PhD

University of British Columbia

We routinely evaluate choices where decisions and actions may or may not yield different types of rewards. These situations trigger competitive decision biases that reflect interplay between different prefrontal cortical, amygdalar, striatal, and habenular nodes within dopaminergic circuitry. This lecture will discuss some of the interactions between these circuits that shape decision biases and underlie conflicting urges when evaluating options that vary in terms of potential risks and rewards.

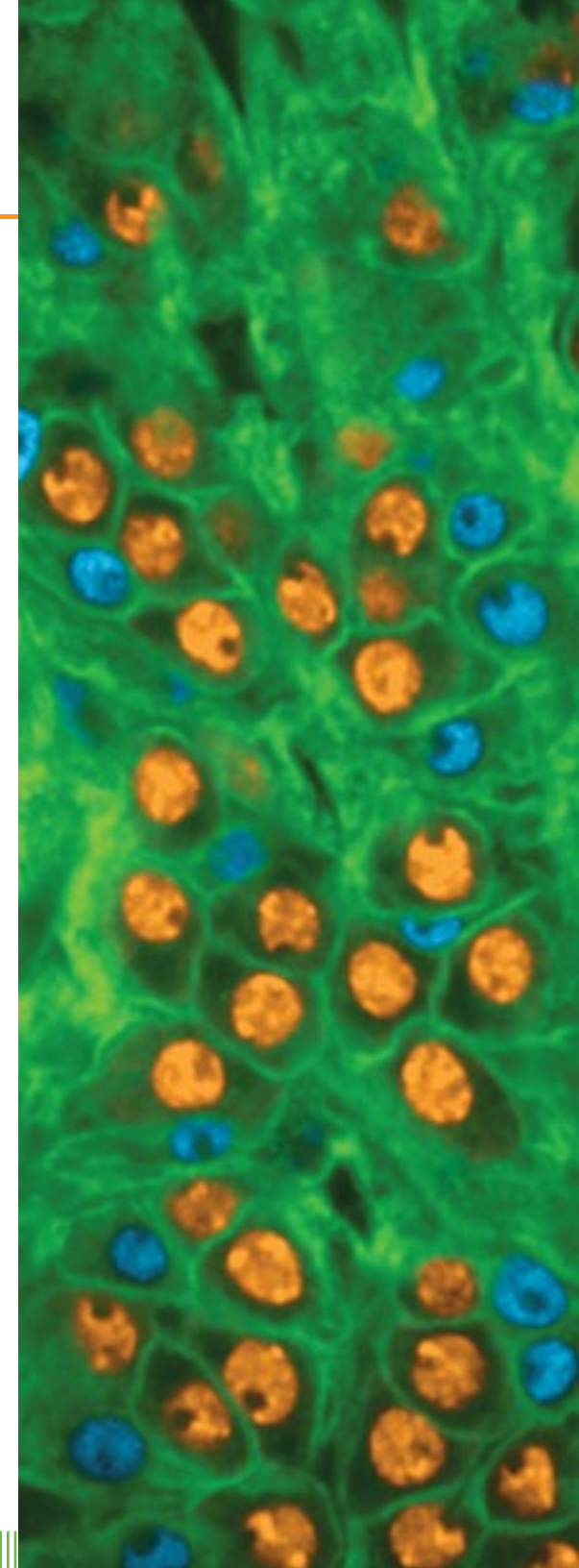
THEME G: NOVEL METHODS AND TECHNOLOGY DEVELOPMENT

Nanoscopy with Focused Light: Principles and Applications CME

Stefan W. Hell, PhD

Max Planck Institute for Biophysical Chemistry

Throughout the 20th century, it was well accepted that lens-based light microscopy could not discern details finer than half the wavelength of light (>200 nm). However, in the 1990s, it was discovered that this barrier can be effectively overcome such that fluorescent features can be resolved virtually down to molecular dimensions. This lecture will discuss the simple yet powerful physical principles that allowed researchers to overcome the diffraction limit with a special emphasis on STED and RESOLFT microscopy relating these "nanoscopy" techniques to the neurosciences.



Symposia

THEME A: DEVELOPMENT

Synapse Formation and Neurodevelopmental Disorders **CME**

Chair: Lin Mei, MD, PhD

Co-Chair: Claire Legay, PhD

Understanding Neural Circuits through Dendrite Development and Function **CME**

Chair: Kang Shen, MD, PhD

Co-Chair: Joshua R. Sanes, PhD

THEME B: NEURAL EXCITABILITY, SYNAPSES, AND GLIA: CELLULAR MECHANISMS

Advanced Molecular Imaging of Synapses in Health and Disease **CME**

Chair: Thomas A. Blanpied, PhD

Co-Chair: Shigeo Okabe, MD, PhD

Dysregulation of mTOR Signaling in Mouse Models of Autism **CME**

Chair: R. Suzanne Zukin, PhD

New Frontiers in Understanding Glia **CME**

Chair: Ben A. Barres, MD, PhD

THEME C: DISORDERS OF THE NERVOUS SYSTEM

Adolescent Alcohol Exposure: Long-Term Neurobiological and Behavior Consequences **CME**

Chair: Soundar Regunathan, PhD

Co-Chair: Antonio Noronha, PhD

How Does the Brain Implement Adaptive Decision-Making to Eat? **CME**

Chair: Valérie Compan, PhD

Human iPSC Derived Cells for Modeling Neurodegenerative Disease and Drug Discovery **CME**

Chair: Eugenia M. Jones, PhD

Co-Chair: Eric Chiao, PhD

Novel Ideas and Tools to Enhance the Neurobiological Study of Drug Addiction with an Eye Towards Intervention Development and Biomarker Identification **CME**

Chair: Rita Goldstein, PhD

Olfaction and Neurogenesis in Neurodegenerative Diseases **CME**

Chair: Rona K. Graham, PhD

Rethinking Dogma in Thalamocortical Epilepsies **CME**

Chair: John R. Huguenard, PhD

Co-Chair: Hee-Sup Shin, MD, PhD

THEME D: SENSORY AND MOTOR SYSTEMS

Cellular and Circuit Mechanisms of Multisensory Integration and Plasticity **CME**

Chair: Hey-Kyoung Lee, PhD

Co-Chair: Patrick O. Kanold, PhD

Retinal Microcircuits for the Computation of Motion Direction: Functional Organization, Development, and Behavior **CME**

Chair: H. Sebastian Seung, PhD

THEME E: INTEGRATIVE SYSTEMS: NEUROENDOCRINOLOGY, NEUROIMMUNOLOGY, AND HOMEOSTATIC CHALLENGE

New Approaches to Understanding How the Hypothalamus Controls Adaptive and Integrative Behavior **CME**

Chair: William Wisden, PhD

THEME F: COGNITION AND BEHAVIOR

Hidden Variables of Behavior: Neuronal Parameters Underlying Brain States **CME**

Chair: Mark J. Schnitzer, PhD

Identifying and Manipulating the Synapses, Cells, and Circuits of Memory Engrams: Implications for Memory and Memory Disorders **CME**

Chair: Alcino J. Silva, PhD

Time in Cortical Circuits **CME**

Chair: Gerald T. Finnerty, PhD

Co-Chair: Dean V. Buonomano, PhD

THEME G: NOVEL METHODS AND TECHNOLOGY DEVELOPMENT

All-Optical Interrogation of Neural Circuits **CME**

Chair: Michael Hausser, PhD

Co-Chair: Valentina Emiliani, PhD

Early Reports from the BRAIN Initiative Frontline: Advancing Technologies to Accelerate Our Understanding of Brain Function **CME**

Chair: Eve E. Marder, PhD

Co-Chair: Jane I. Roskams, PhD



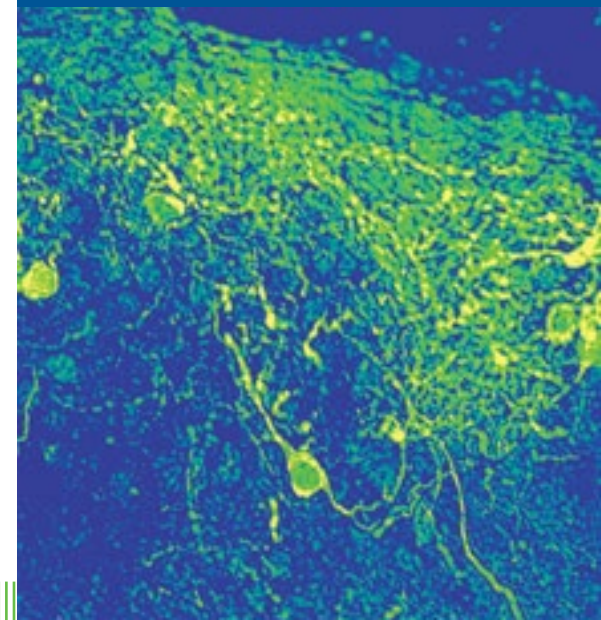
EMPIRICAL APPROACHES TO NEUROSCIENCE AND SOCIETY SYMPOSIUM

Statistics and Computation for an Increasingly Quantitative Scientific Future

Chair: Rita J. Balice-Gordon, PhD

Saturday, Oct. 17, 1:30–4 p.m.

The replication of scientific studies is a widely-recognized challenge in neuroscience and requires practical solutions that can impact research, funding, publishing, and training. Speakers will discuss best practices in experimental design, statistical rigor, impact on animal use, methodological descriptions, reagent validation and sharing, data sharing, and the impact these have on funding and publishing practices. This symposium will also explore the role of inherent scientific biases and how these might be mitigated to achieve higher standards of reproducibility.



CME These activities have been approved for *AMA PRA Category 1 Credit*.™ For details, see page 9 and visit SfN.org/cme.

Find the latest session information at SfN.org/symposia.

Minisymposia

THEME A: DEVELOPMENT

Genomic Views of Transcriptional Enhancers: Essential Determinants of Cellular Identity and Activity-Dependent Responses in Neurons **CME**

Chair: Jesse M. Gray, PhD

Co-Chair: Tae-Kyung Kim, PhD

Selection and Consolidation of Neuronal Circuits: Lessons from Learning and Development **CME**

Chair: Kuan Hong Wang, PhD

THEME B: NEURAL EXCITABILITY, SYNAPSES, AND GLIA: CELLULAR MECHANISMS

Emerging Insight into the Critical Role of Astrocyte Ion Channels in Homeostasis and Neuron-Glia Signaling **CME**

Chair: Min Zhou, MD, PhD

Co-Chair: Michelle L. Olsen, PhD

New Insights into Signal Generation at the Presynaptic Active Zone **CME**

Chair: Annalisa Scimemi, PhD

Co-Chair: Tobias Moser, MD, PhD

THEME C: DISORDERS OF THE NERVOUS SYSTEM

Axonal Transport Defects in Neurodegenerative Diseases: Mechanisms and Molecular Components Involved **CME**

Chair: Gerardo Morfini, PhD

Co-Chair: Scott Brady, PhD

Chaperones in Neurodegeneration **CME**

Chair: Iris Lindberg, PhD

Corticospinal Motor Neurons in Health and Disease **CME**

Chair: Hande Ozdinler, PhD

Epigenetic Landscape of Stress and Addiction: Novel Therapeutic Possibilities **CME**

Chair: Jean Lud Cadet, MD

Co-Chair: Elisabeth Binder, MD, PhD

Modern Approaches Toward More Predictive Mouse Models of Neurodegenerative Diseases **CME**

Chair: Gareth R. Howell, PhD

Co-Chair: Bruce T. Lamb, PhD

Mood and Reward Networks in Chronic Pain Conditions **CME**

Chair: Venetia Zachariou, PhD

Co-Chair: Ipek Yalcin, PhD

New Perspectives for the Rescue of Cognitive Disability in Down Syndrome **CME**

Chair: Renata Bartesaghi

Co-Chair: Diana Bianchi, MD

Redox Signaling in Neurological Dysfunction **CME**

Chair: Rodrigo Franco, PhD

Co-Chair: Lourdes Massieu, PhD

Transcriptomic Approaches to Neural Regeneration **CME**

Chair: Mark H. Tuszynski, MD, PhD

THEME D: SENSORY AND MOTOR SYSTEMS

Behavior Diversity in Individuals: Genetic and Circuit Mechanisms **CME**

Chair: Brian Grone, PhD

Co-Chair: Carlos J. Pantoja, MD, PhD

Brainy and Handy: What Robotics and Prosthetics Can Learn from Touch Receptors in the Hand **CME**

Chair: Esther P. Gardner, PhD

Different Brains, Common Circuits? Visual Decision-Making in Rodents and Primates **CME**

Chair: David J. Freedman, PhD

Dorsal Striatum: From Microcircuits and Modulation to *In Vivo* Function **CME**

Chair: Jens Hjerling-Leffler, PhD

Co-Chair: David Robbe, PhD

Pain and Poppies: The Good, the Bad, and the Ugly of Opioid Analgesics **CME**

Chair: Tuan Trang, PhD

Co-Chair: Catherine Cahill, PhD

Peripheral Optogenetic Neuromodulation: Progress and Challenges **CME**

Chair: Scott L. Delp, PhD

Reward-Driven Learning in Primary Sensory Cortices **CME**

Chair: Alfredo Kirkwood, PhD

THEME E: INTEGRATIVE SYSTEMS: NEUROENDOCRINOLOGY, NEUROIMMUNOLOGY, AND HOMEOSTATIC CHALLENGE

Corticotropin Releasing Factor: Novel Molecular, Cellular, and System Roles **CME**

Chair: Danny G. Winder, PhD

Co-Chair: Nicholas W. Gilpin, PhD

Disrupted Sleep: From Molecules to Cognition **CME**

Chair: Eus J.W. Van Someren, PhD

Co-Chair: Chiara Cirelli, MD, PhD

Sex-Specific Mechanisms of Stress Susceptibility **CME**

Chair: Debra Bangasser, PhD

Co-Chair: Mollee R. Farrell, PhD

THEME F: COGNITION AND BEHAVIOR

Can We Merge the Divergent Views of Hippocampal Function? **CME**

Chair: Daniela Schiller, PhD

Co-Chair: Howard B. Eichenbaum, PhD

Internally and Memory-Guided Behaviors: The Role of Frontal Cortical Ensembles **CME**

Chair: Nandakumar Narayanan, MD, PhD

Co-Chair: Alex C. Kwan, PhD

Learning to Generalize: Neural, Behavioral, and Computational Basis of Categorization **CME**

Chair: Matthew V. Chafee, PhD

Co-Chair: Hugo Merchant, PhD

Optogenetic Dissection of the Basal Forebrain Neuromodulatory Control of Cortical Activation, Plasticity, and Cognition **CME**

Chair: Shih-Chieh Lin, MD, PhD

Co-Chair: Adam Kepecs, PhD

The Medial Prefrontal Cortex: Emotional Regulation Across Species **CME**

Chair: Hannah F. Clarke, PhD

Understanding Goal-Directed Decision-Making in Humans: Computations and Circuits **CME**

Chair: Amitai Shenhav, PhD

Co-Chair: Richard W. Morris, PhD

THEME G: NOVEL METHODS AND TECHNOLOGY DEVELOPMENT

3D Retinal Organoids from Human Pluripotent Stem Cells: Promise to Alleviate Blindness or Better Disease Model? **CME**

Chair: Magdalene Seiler, PhD

Clearing and Labeling Methods for High Resolution Imaging of Intact Biological Specimens **CME**

Chair: Ali Erturk, PhD

Co-Chair: Viviana Gradinaru, PhD

Clinician-Scientists and Continuing Medical Education (CME)



New for Clinician-Scientists at Neuroscience 2015

Recognizing the value of basic discovery and its application to curing disease, SfN has always served clinician-scientists, and is continuing that focus now more than ever. Neuroscience 2015 will feature the Clinical Neuroscience Lecture, designed to offer the clinician-scientist perspective about a particular disease or disorder (pg. 4). SfN will also provide a clinical neuroscience curated itinerary highlighting sessions that focus on translational research. Clinician-scientist attendees can take advantage of select programming while earning Continuing Medical Education (CME) credits. Remember to sign up for the SfN CME program during registration or on-site at the meeting.

Physicians: Improve Competencies While Earning CME Credit

The Society for Neuroscience's (SfN) annual meeting is a forum for the education of

physicians in the field of neuroscience. By attending lectures, symposia, and minisymposia, physicians receive both a broad overview of the field and detailed information about the most recent research on specific topics. Abstracts for each plenary session contain brief descriptions of the material to be presented. By attending these events, physicians better understand the basic science that underlies clinical practice.

Statement of Need

It is important that physicians comprehend the basic science that underlies clinical medicine. SfN's annual meeting is the premier venue for this educational opportunity. Physicians learn about the most up-to-date, cutting-edge discoveries regarding the brain and nervous system.

Global Learning Objective

Physicians will integrate the most up-to-date information and research on the mechanism,

treatment, and diagnosis of conditions related to neurological and psychiatric disorders into their diagnostic and therapeutic modalities of practice to determine the best treatment for the patient.

Accreditation

SfN is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

CME Registration

CME registration must be completed before or during the annual meeting. Those who do not register before the conclusion of the meeting will not be able to request CME credits. Two weeks before the meeting, CME registrants will receive an email with the CME Supplemental Program, which contains important information regarding the CME program, including disclosure information and instructions for obtaining CME credits.

Clinical Content at Neuroscience 2015

- Clinical Neuroscience Lecture: Neurotrophin Signaling and Epileptogenesis: Mechanistic and Therapeutic Insights (pg. 5)
- Curated itinerary geared toward clinicians
- Clinical Neuroscience Social (pg. 14)

Program at a Glance

FRIDAY, OCT. 16		SUNDAY, OCT. 18	
8 a.m.–5 p.m.	Neurobiology of Disease Workshop: Human Brain Malformations: From Genetics to Therapeutics	8 a.m.–noon	Posters/Nanosymposia
8 a.m.–6 p.m.	Short Course #1: Using iPS Cells and Reprogramming to Model Neural Development and Disease	8:30–11 a.m.	Symposia/Minisymposia CME
8:30 a.m.–6 p.m.	Short Course #2: The Impact of Human Genetics and Genomics in Neurobiology: From Disease Discovery to Fundamental Mechanisms (and Back)	9–11 a.m.	A Guide to Publishing in Journals
1–5:30 p.m.	Short Course #3: Optimizing Experimental Design for High-Quality Science	9:30 a.m.–5 p.m.	Exhibits
SATURDAY, OCT. 17		11:30 a.m.–1 p.m.	Chapters Workshop
8–9:15 a.m.	Meet-the-Expert Series: Session 1	11:30 a.m.–1 p.m.	Successful Career Advancement through Networking: Is It Who You Know?
9–11 a.m.	Careers Beyond the Bench	11:30 a.m.–1:30 p.m.	Creating Connections and Community in Support of Diverse Neuroscience
9–11 a.m.	Success in Academia	noon–2 p.m.	Graduate School Fair
9:30–10:45 a.m.	Meet-the-Expert Series: Session 2	1–3 p.m.	Social Issues Roundtable: The Income Achievement Gap: Insights from Cognitive Neuroscience
11 a.m.–1 p.m.	Dialogues Between Neuroscience and Society	1–5 p.m.	Posters/Nanosymposia
1–2 p.m.	Getting the Most Out of SfN: The Annual Meeting and Beyond	1:30–4 p.m.	Symposia/Minisymposia CME
1–3 p.m.	Graduate School Fair	2–4 p.m.	Tackling Challenges in Scientific Rigor: The (Sometimes) Messy Reality of Science
1–5 p.m.	Posters/Nanosymposia	2:30–3:40 p.m.	Peter and Patricia Gruber Lecture
1:30–4 p.m.	Empirical Approaches to Neuroscience and Society Symposium	3–5 p.m.	Making the Most of Your International Training Experience
1:30–4 p.m.	Symposia/Minisymposia CME	5:15–6:25 p.m.	Presidential Special Lecture CME
1:30–5 p.m.	How Do I Fund My Science?	6:45–8:45 p.m.	SfN-Sponsored Socials
3–4:30 p.m.	Brain Awareness Campaign Event: Sparking Connections through Brain Awareness around the Globe	MONDAY, OCT. 19	
3–5 p.m.	Mentor-Mentee Interaction	8 a.m.–noon	Posters/Nanosymposia
5:15–6:25 p.m.	Presidential Special Lecture CME	8:30–11 a.m.	Symposia/Minisymposia CME
6:30–8:30 p.m.	Diversity Fellows Poster Session	9–11 a.m.	Exploring New Communications Channels: Science Blogging
6:30–8:30 p.m.	International Fellows Poster Session	9–11 a.m.	Teaching Neuroscience to Nonscientists
6:30–8:30 p.m.	Trainee Professional Development Awards Poster Session	9:30 a.m.–5 p.m.	Exhibits
7:30–9:30 p.m.	Career Development Topics: A Networking Event	11:30 a.m.–12:40 p.m.	David Kopf Lecture on Neuroethics

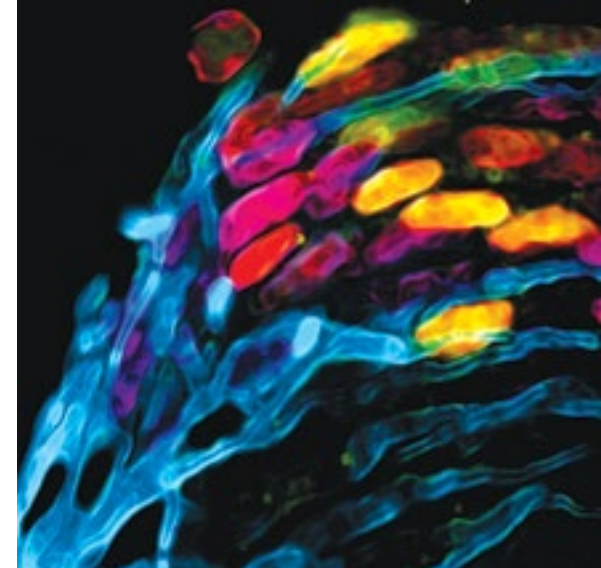
noon–2 p.m.	Graduate School Fair
1–5 p.m.	Posters/Nanosymposia
1:30–4 p.m.	Symposia/Minisymposia CME
3:15–4:25 p.m.	Albert and Ellen Grass Lecture CME
5:15–6:25 p.m.	Presidential Special Lecture CME
6:45–8:45 p.m.	SfN-Sponsored Socials

TUESDAY, OCT. 20

8 a.m.–noon	Posters/Nanosymposia
8:30–11 a.m.	Symposia/Minisymposia CME
9:30 a.m.–5 p.m.	Exhibits
noon–2 p.m.	Animals in Research Panel: Proactive Strategies to Increase the Positive Public Perception of Animals in Research
noon–2 p.m.	Celebration of Women in Neuroscience Luncheon
noon–2 p.m.	Graduate School Fair
1–5 p.m.	Posters/Nanosymposia
1:30–4 p.m.	Symposia/Minisymposia CME
2:30–3:40 p.m.	Fred Kavli History of Neuroscience Lecture
3–5 p.m.	Public Advocacy Forum: Sports-Related Brain Injuries and Their Ethical, Social, and Neuroscience Considerations
5:15–6:25 p.m.	Presidential Special Lecture CME
6:45–7:30 p.m.	SfN Members' Business Meeting
6:45–8:45 p.m.	SfN-Sponsored Socials
9 p.m.–midnight	Graduate Student Reception




WEDNESDAY, OCT. 21


8 a.m.–noon	Posters/Nanosymposia
8:30–11 a.m.	Symposia/Minisymposia CME
9:30 a.m.–5 p.m.	Exhibits
1–5 p.m.	Posters/Nanosymposia
1:30–4 p.m.	Symposia/Minisymposia CME



Workshops, Meetings, and Events

Professional Development, Advocacy, and Networking Resources

 Preregistration Required
 Course Fee
 Professional Development

 Networking
 Public Outreach

WORKSHOP FEES

Short Courses 1 and 2

(Includes electronic syllabus and lunch)

Student member.....	\$150
Student nonmember.....	\$225
Postdoctoral member.....	\$225
Postdoctoral nonmember.....	\$340
Faculty member.....	\$295
Faculty nonmember.....	\$445

Short Course 3

(Includes electronic syllabus)

Student member.....	\$100
Student nonmember.....	\$150
Postdoctoral member.....	\$150
Postdoctoral nonmember.....	\$225
Faculty member.....	\$200
Faculty nonmember.....	\$300

Neurobiology of Disease Workshop..... \$35

(Includes breakfast, lunch, and reception)

Note: Preregistration is required for Short Courses and the Neurobiology of Disease Workshop. **Register at Sfn.org/registration.**

Friday, Oct. 16

NEUROBIOLOGY OF DISEASE WORKSHOP

Human Brain Malformations:

From Genetics to Therapeutics

8 a.m.–5 p.m.

Organizers: Peter Crino, MD, PhD;

Mustafa Sahin, MD, PhD

Contact: training@sfn.org

Support contributed by: National Institute of Neurological Disorders and Stroke

SHORT COURSE 1

Using iPSCs Cells and Reprogramming to Model Neural Development and Disease

8 a.m.–6 p.m.

Organizer: Kevin Eggan, PhD

Contact: training@sfn.org

SHORT COURSE 2

The Impact of Human Genetics and Genomics in Neurobiology: From Disease Discovery to Fundamental Mechanisms (and Back)

8:30 a.m.–6 p.m.

Organizer: Nicholas Katsanis, PhD

Contact: training@sfn.org

SHORT COURSE 3

Optimizing Experimental Design for High-Quality Science

8 a.m.–12:30 p.m.

Organizers: Mara Dierssen, MD, PhD; Magda Giordano, PhD; Chris McBain, PhD; Charles Mobbs, PhD; John Ngai, PhD; Rae Nishi, PhD

Contact: mpd@sfn.org

Saturday, Oct. 17

MEET-THE-EXPERT SERIES

Contact: mpd@sfn.org

Session 1: 8–9:15 a.m.

Ravi Allada, MD

A Journey Around the Clock and Beyond: From Bedside to Bench and Back

Matteo Carandini, PhD

From One Neuron to Many: Recording from Populations in Visual Cortex and Beyond

John Cryan, PhD

The Microbiome: A Key Regulator of Brain and Behavior

Jeffrey Diamond, PhD

Neuronal and Glial Recordings Provide Different Perspectives on the Dynamics of Neurotransmitter Diffusion and Uptake

Z. Josh Huang, PhD

Genetic Dissection of Neocortical Circuits in the Mouse

Session 2: 9:30–10:45 a.m.

Guo-li Ming, MD, PhD

Disease-In-A Dish: The Future of iPSCs

Erich Jarvis, PhD

Jumping the Evolutionary Divide: How Breaking Down Human Egos and Building Up New Technologies Leads Us to Understand Complex Brain Traits, Including Convergent Evolution of Spoken Language

Frances B. Jensen, MD

Translational Studies in Epilepsy and Epileptogenesis: Evaluating Synaptic Function *In Vitro* and *In Vivo*

William Martin, PhD

The Garden of Forking Paths: Your PhD as a Gateway into Discovery, Analytics, and Entrepreneurship

Cheryl Stucky, PhD

Adventures in Pain Biology at Many Levels and Locations

Catherine Woolley, PhD

Sex Differences in the Brain: What Are They, What Aren't They, and When Do They Matter?

Careers Beyond the Bench

9–11 a.m.

Organizer: Elisabeth Van Bockstaele, PhD

Contact: mpd@sfn.org

Success in Academia

9–11 a.m.

Organizer: Tracy Bale, PhD

Contact: mpd@sfn.org

Getting the Most Out of SfN: The Annual Meeting and Beyond

1–2 p.m.

Organizer: Hermes Yeh, PhD

Contact: mpd@sfn.org

Graduate School Fair

1–3 p.m.

Contact: ndp@sfn.org

How Do I Fund My Science?

1:30–5 p.m.

Organizer: Kenneth Maynard, PhD

Contact: mpd@sfn.org

BRAIN AWARENESS CAMPAIGN EVENT

Sparking Connections through Brain Awareness around the Globe

3–4:30 p.m.

Contact: baw@sfn.org

Mentor-Mentee Interaction

3–5 p.m.

Organizers: Michael Levine, PhD; Ian Paul, PhD; Jennifer Raymond, PhD

Contact: mpd@sfn.org

Diversity Fellows Poster Session

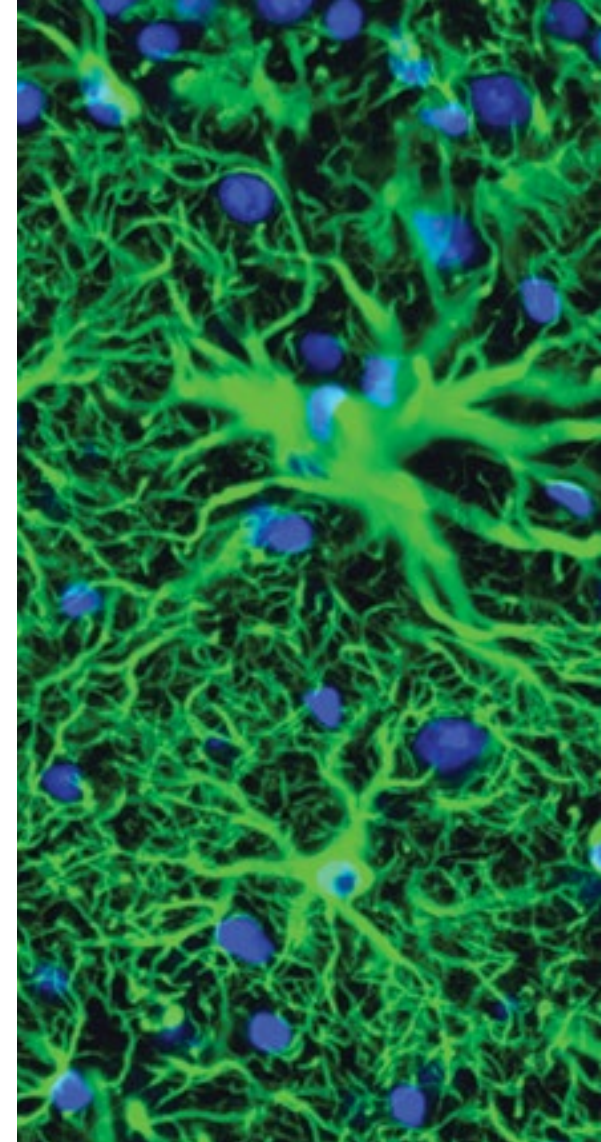
6:30–8:30 p.m.

Contact: mpd@sfn.org

International Fellows Poster Session

6:30–8:30 p.m.

Contact: globalaffairs@sfn.org



Trainee Professional Development Awards Poster Session 📄 🗓

6:30–8:30 p.m.

Contact: awards@sfn.org

Career Development Topics: A Networking Event 📄 🗓

7:30–9:30 p.m.

Contact: mpd@sfn.org

Sunday, Oct. 18

A Guide to Publishing in Journals 📄 🗓

9–11 a.m.

Organizer: Toby Charikin, PhD

Contact: mpd@sfn.org

Chapters Workshop 📄 🗓

11:30 a.m.–1 p.m.

Contact: chapters@sfn.org

Successful Career Advancement through Networking: Is It Who You Know? 📄 🗓

11:30 a.m.–1 p.m.

Organizers: Mark Baxter, PhD; Rebecca Shansky, PhD

Contact: mpd@sfn.org

Creating Connections and Community in Support of Diverse Neuroscientists 📄 🗓

11:30 a.m.–1:30 p.m.

Organizer: Claire Horner-Devine, PhD

Contact: mpd@sfn.org

Graduate School Fair 🗓

noon–2 p.m.

Contact: ndp@sfn.org

SOCIAL ISSUES ROUNDTABLE

The Income Achievement Gap: Insights from Cognitive Neuroscience 📄 🗓

1–3 p.m.

Organizer: John D.E. Gabrieli, PhD

Contact: advocacy@sfn.org

Tackling Challenges in Scientific Rigor: The (Sometimes) Messy Reality of Science 📄 🗓

2–4 p.m.

Organizers: John Morrison, PhD; Barbara Lom, PhD

Contact: mpd@sfn.org

Making the Most of Your International Training Experience 📄 🗓

3–5 p.m.

Organizer: Michael Zigmond, PhD

Contact: mpd@sfn.org

Monday, Oct. 19

Exploring New Communications Channels: Science Blogging 📄 🗓

9–11 a.m.

Organizer: Scott Thompson, PhD

Contact: mpd@sfn.org

Teaching Neuroscience to Nonscientists 📄 🗓

9–11 a.m.

Organizer: Richard Olivo, PhD

Contact: mpd@sfn.org

Graduate School Fair 🗓

noon–2 p.m.

Contact: ndp@sfn.org

Tuesday, Oct. 20

ANIMALS IN RESEARCH PANEL

Proactive Strategies to Increase the Positive Public Perception of Animals in Research 📄 🗓

noon–2 p.m.

Organizer: Michael E. Goldberg, MD

Contact: advocacy@sfn.org

Celebration of Women in Neuroscience Luncheon 📄 🗓

noon–2 p.m.

Contact: cwinn@sfn.org

Graduate School Fair 🗓

noon–2 p.m.

Contact: ndp@sfn.org

PUBLIC ADVOCACY FORUM

Sports Related Brain Injuries and Their Ethical, Social, and Neuroscience Considerations 📄 🗓

3–5 p.m.

Organizer: Anne Young, MD, PhD

Contact: advocacy@sfn.org

SfN Members' Business Meeting 🗓

6:45–7:30 p.m.

Contact: info@sfn.org

Graduate Student Reception 🗓

9 p.m.–midnight

Contact: meetings@sfn.org

Find the latest session information at SfN.org/workshops.

Child Care and Youth Programs

On-site child care and youth programs will be available for children ages 6 months to 12 years. KiddieCorp, a national firm with more than 20 years of experience in conference child care, provides attendees with a trustworthy option during the annual meeting. Space is limited — reserve early!

kiddiecorp.com/neurokids.htm

SfN-Sponsored Socials

SUNDAY, OCT. 18, 6:45–8:45 P.M.	MONDAY, OCT. 19, 6:45–8:45 P.M.	TUESDAY, OCT. 20, 6:45–8:45 P.M.
Cajal Club Social	Alzheimer's and Related Dementias Social	Cognitive Neuroscience Social
Cell Death and Cell Stress Social	Behavioral Neuroendocrinology Social	Computational Neuroscience Social
Clinical Neurosciences Social	Developmental Neurobiology Social	Epilepsy Social
Hearing and Balance Social	Faculty for Undergraduate Neuroscience Social	Eye Movement and Vestibular System Social
Neuroethology/Invertebrate Neurobiology Social	Hippocampus Social	Neuroendocrinology Social
Neuroinformatics Social	Ingestive Social	Neuroethics Social
Pain Neuroscience Social	Music Social	Neuron-Glia Interactions Social
Spinal Cord Injury Social	Neural Control of Autonomic and Respiratory Function Social	Optogenetics Social
Synapses and Excitatory Amino Acids Social	Psychopharmacology Social	Sensorimotor Social
	Vision Social	Songbird Social



Satellite Events

MULTI-DAY EVENTS			FRIDAY, OCTOBER 16
7th Annual Meeting of the Society for the Neurobiology of Language Oct. 15 8:30 a.m.–6:30 p.m. Oct. 16 8:30 a.m.–7:30 p.m. Oct. 17 8–10 a.m.	14th Annual Molecular and Cellular Cognition Society Meeting Poster Session Oct. 15 6:30–9:30 p.m. Symposium Oct. 16 9 a.m.–5 p.m.	Barrels XVIII Oct. 15 8:30 a.m.–10 p.m. Oct. 16 8:30 a.m.–5 p.m.	S4SN 2015 Annual Meeting 7 a.m.–8 p.m.
8th Workshop on Advances in Electrocorticography Oct. 15–16 8:30 a.m.–6 p.m.	2015 International Neuroethics Society Annual Meeting Public Program Oct. 15 5–7:30 p.m. Annual Meeting Oct. 16 9 a.m.–7:30 p.m.	Cell Symposia: Engineering the Brain – Technologies for Neurobiological Applications Oct. 15–16 8 a.m.–6 p.m.	Satellite Meeting of Comparative Cognition Society 7:30 a.m.–5:30 p.m.
10th Brain Research Conference – RNA Metabolism in Neurological Disease Oct. 15–16 8:30 a.m.–6 p.m.	American Society for Neurorehabilitation and Translational and Computational Motor Control Joint Annual Meeting Oct. 15 8 a.m.–5 p.m. Oct. 16 8 a.m.–7 p.m.	The J. B. Johnston Club for Evolutionary Neuroscience Oct. 15 7:30 a.m.–7:30 p.m. Oct. 16 7 a.m.–9 p.m.	Advances and Perspectives in Auditory Neurophysiology (APAN) 8 a.m.–7 p.m.
		Chicago Neuroimaging Workshop on the Dynamic Social Brain Oct. 22–23 8 a.m.–7 p.m.	National Eye Institute Audacious Goals Initiative (AGI) Discussion: Reconnecting Neurons in the Visual System 8:30 a.m.–12:30 p.m.

Neural Mechanisms of Feeding and Swallowing and Their Applications to Rehabilitation 8:30 a.m.–6 p.m.
SPINES Neuroscience Symposium 8:30 a.m.–8 p.m.
Brain Stimulation Based Neural Circuit Modeling: Linking Levels of Analysis 9 a.m.–5:30 p.m.
Using NEURON to Model Cells and Networks 9 a.m.–5 p.m.
The Virtual Brain: Node #3 Workshop 9 a.m.–5:30 p.m.
Joint NIDA–NIAAA Young Investigator Symposium 4:30–6 p.m.
SATURDAY, OCTOBER 17
Promoting Your Research 8:30–10:30 a.m.
Using the Neuroscience Gateway Portal (NSG) for Parallel Simulations 9–10:30 a.m.
Examining Nervous System Functions from a First–Person Frame of Reference Using Semblance Hypothesis 9:30–10:30 a.m.
Friends of Case Western and Cleveland Clinic Social 6:30–8:30 p.m.
Chinese Neuroscientists Social 6:30–9 p.m.
g.tec's Brain-Computer Interface Workshop for Control, Assessment, and Rehabilitation 6:30–10 p.m.

SUNDAY, OCTOBER 18
New Techniques in Electro– and Optophysiology 6:30–8:00 p.m.
Arab Neuroscientists Social 6:30–8 p.m.
ASPET's Neuropharmacology Division Social 6:30–8 p.m.
Decision–Making Social: Society for Neuroeconomics 6:30–8 p.m.
Evelyn F. McKnight Brain Research Foundation Poster Reception 6:30–8:30 p.m.
Filling Unmet Medical Need in CNS Diseases: Systems Biology for Fun(ding) & Profit 6:30–8:30 p.m.
g.tec's Functional Mapping with the ECoG Workshop 6:30–8:30 p.m.
UW-Madison Neuroscience Training Program Social 6:30–8:30 p.m.
Schizophrenia Social 6:30–8:30 p.m.
Ernst Strüngmann Forum Social 6:30–9:30 p.m.
Quantitative Microscopy: Enhancing the Reproducibility of Your Research Results with Stereology 6:30–10 p.m.
Rutgers Brain Health Institute Reception 6:30–10 p.m.

Boston University Graduate Program for Neuroscience Reception 7–10 p.m.
Dutch Neuroscience Social 7–10 p.m.
University of Chicago 12th Annual Social 8–10 p.m.
International Behavioral Neuroscience Society (IBNS) Social 6:30–8:00 p.m.
MONDAY, OCTOBER 19
<i>In Vitro</i> Microelectrode Array Recording Techniques 6:30–7:30 p.m.
Scientists Empowering Scientists 6:30–8:30 p.m.
Wireless <i>In Vivo</i> Neural Recording and Stimulation 6:30–7:30 p.m.
5th Annual International Society for Serotonin Research Mixer 6:30–8 p.m.
Simons Foundation Autism Research Initiative (SFARI) Social 6:30–8:30 p.m.
Friends of Ohio State University Social 6:30–8:30 p.m.
Imaging Neuronal Activity in Freely-Moving Animals: Linking Neural Circuit Dynamics to Behaviors 6:30–9 p.m.

12th Annual Christopher Reeve "Hot Topics" in Stem Cell Biology 6:30–9:30 p.m.
Association of Korean Neuroscientists: Annual Meeting and Social 6:30–9:30 p.m.
LGBT Social 7–9 p.m.
Sleep and Circadian Biology DataBlitz 8–10 p.m.
The Grass Foundation and Marine Biological Laboratory (MBL) Social 6:30–8:00 p.m.
Club Hypnos 6:30–8:30 p.m.



Registration

Attend Neuroscience 2015 with more than 30,000 neuroscience researchers, clinicians, and advocates to hear the latest discoveries, explore new tools and technologies, and advance your career. This meeting is a must-attend event for neuroscientists at all career stages!

All members must be in good standing at the time of registering for the annual meeting to receive member rates. Membership status will be verified.

Fees vary based on registration categories and options. Refunds will not be issued for incorrect registration category. If you are uncertain about your membership status, contact membership@sfn.org or call (202) 962-4000.

Bonus Day opens at noon EDT on July 14 for members who renewed their membership by Jan. 31, 2015.

REGISTRATION CATEGORY	ADVANCE Opens at noon EDT on July 15 for all members; noon EDT on July 21 for nonmembers	ONLINE DISCOUNT Opens at midnight EDT on September 17 and continues through the annual meeting	ON-SITE IN LINE Opens at 7:30 a.m. CDT October 17 and continues through the annual meeting
Member	\$350	\$405	\$485
Member, Category II	\$145	\$170	\$205
Member, Category III	\$205	\$230	\$265
Postdoctoral Member	\$265	\$305	\$365
Postdoctoral Member, Category II	\$95	\$110	\$130
Postdoctoral Member, Category III	\$150	\$170	\$205
Student Member	\$175	\$205	\$245
Student Member, Category II	\$65	\$75	\$90
Student Member, Category III	\$100	\$115	\$135
Student Member, Undergraduate	\$90	\$105	\$125
Student Member, Undergraduate Category II	\$35	\$40	\$45
Student Member, Undergraduate Category III	\$50	\$60	\$70
Nonmember	\$630	\$730	\$875
Student Nonmember	\$315	\$370	\$440
Guest – Nonscientific	\$50	\$55	\$65
CME Accreditation	\$85	\$100	\$100

Join and Save

Save up to \$400 on your registration by joining SfN. Member savings on registration exceed the cost of membership, and membership also includes online access to *The Journal of Neuroscience* and Neuronline, SfN's home for learning, discussion and resources in support of global professional development, public education, and advocacy.

Accepted Forms of Payment

MasterCard, Visa, American Express, Discover Card, checks, or money orders in U.S. dollars that are drawn on a U.S. bank made payable to the Society for Neuroscience are accepted. Cash is accepted on-site only.

Place Your Registration on Hold for Organization/Company Payment

The Registration on Hold option is available for online credit card payments only. Individuals

who require their organization/company to pay for their registration may select this option. You may start the registration process and place your registration on hold until SfN receives payment. An email will be sent to you and the payer with a link allowing for payment of the registration.

To receive the advance registration rate, payment must be received before or by the advance registration deadline at 11:59 p.m. EDT on September 16. After this date, higher registration fees will apply (no exceptions). NOTE: Registration is not complete and housing reservation access won't be permitted until SfN receives payment.

Contact Information

sfnregistration@xpressreg.net
(888) 736-6690 (U.S. and Canada)
+1 (508) 743-8563 (International)
9 a.m.–5 p.m. EDT

Environmental responsibility is an integral part of SfN's business decision-making.

DOWNLOAD MEETING APP AND SAVE

SfN is committed to helping the environment by reducing waste, so starting this year, SfN will print fewer program books. Attendees will receive free printed copies of the general information book and the *Exhibit Guide*, and they may purchase printed daily books and the author index for a minimal fee. Information from the daily books will

be in the meeting mobile app, available as a free download for iPad, iPhone, and Android devices. This year's app is better than ever with improved schedule features, more detailed map views to help you find your way around, and new exhibitor search functionality so you can identify which products and vendors you can't miss! The information will also be available in the Neuroscience Meeting Planner. Computer terminals will be available in the convention center for easy onsite access.

DAILY BOOK FEES	ADVANCE	ONLINE	ON-SITE
Full Set of 5 Daily Books and Author Index, Member	\$20	\$25	\$25
Full Set of 5 Daily Books and Author Index, Nonmember	\$30	\$35	\$35
Individual Daily Books, Member	\$10	\$10	\$10
Individual Daily Books, Nonmember	\$15	\$15	\$15

Daily books should be ordered at the time of registration. A limited number of daily books will be available for purchase on-site at the annual meeting on a first-come, first-served basis.

Travel and Hotel Information

AIRPORTS

Chicago O'Hare International Airport (ORD)

flychicago.com/ohare
(773) 686-2200

Approximate 40-minute drive (17 miles) to downtown Chicago and McCormick Place

Midway International Airport (MDW)

flychicago.com/midway
(773) 838-0600

Approximate 20-minute drive (11 miles) to downtown Chicago and McCormick Place

INTERNATIONAL ATTENDEES

Visa Information

If you are from a nation participating in the Visa Waiver Program, review U.S. travel regulations early to ensure compliance. For more information and to request an official invitation letter, visit SfN.org/visainfo.

Hotel Information

Housing for advance registered members who renewed by Jan. 31, 2015, opens at noon EDT on July 14; for all other members at noon EDT on July 15; and for advance nonmembers at noon EDT on July 21. Housing is open through September 18.

- Reservations can be made online or by phone, fax, or mail. Online hotel reservations are encouraged and will be given priority. Reservations are not accepted directly by participating hotels or SfN headquarters.
- The Fairmont Chicago and the Hyatt Regency Chicago Downtown are the official co-headquarters hotels.

Reservation Policies and Procedures

- To make a hotel reservation through SfN Housing, you must be registered for Neuroscience 2015. Only one hotel room may be reserved per paid registrant until August 24.
- Upon registering, each attendee will receive a unique registration confirmation number that is required to make a hotel reservation. Reservations must be guaranteed with a valid credit card or check deposit.
- SfN Housing will make your reservation based on your requests; however, special requests cannot be guaranteed. It is the attendee's responsibility to reconfirm requests directly with the assigned hotel prior to arrival.
- A limited number of lower-priced hotel rooms have been set aside through August 31 for students and member category I, II, and III registrants.
- Housing for exhibitors opens July 28. For exhibitor hotel reservation information, visit SfN.org/exhibits.
- You may change or cancel hotel reservations until 9 p.m. EDT on September 18.

Contact Information

<http://sfncmrushelp.com>
(866) 999-3093 (U.S. and Canada)
+1 (415) 268-2091 (International)
9 a.m.–9 p.m. EDT



Getting Around Chicago is as Easy as 1, 2, 3



1

With years of experience in hosting large gatherings and a state-of-the-art convention center, Chicago is ready to welcome Neuroscience 2015! SfN has made navigating Chicago a breeze! Whether you choose to take the dedicated SfN shuttle bus directly from your hotel, hop on Metra or the world-famous elevated "L" train system, or grab a taxi, the McCormick Place Convention Center is a quick trip from your hotel.

Complimentary SfN Shuttle Service

With shuttle bus service operating every 10 minutes during peak-time, and 20 minutes during off-peak, you can conveniently travel between your official SfN meeting hotel and the convention center. For Neuroscience 2015, SfN offers a fleet of shuttle buses dedicated to your travel. With the exception of the Hyatt Regency McCormick Place, adjacent to the convention center, shuttle service will be available to all SfN contracted hotels. In addition, because of Chicago's commitment to successful large meetings, some shuttle routes operate on a dedicated traffic-free "busway" from downtown to the convention center.

2

Public Transportation

Chicago offers two options for public transportation: Metra (the commuter train system) and CTA (the "L" light rail system). Metra — with stops within walking distance to half of the SfN-contracted hotel rooms — has a stop inside McCormick Place. SfN has contracted with Metra to provide additional train service for Neuroscience 2015. Free Metra passes will be available to all attendees.

If you opt to take the L, also convenient to many Neuroscience 2015 hotels, the Roosevelt Road station is near the convention center. SfN will run a complimentary looping shuttle from this station to McCormick Place.

3

Taxi

With more than 6,500 vehicles, Chicago has the second largest taxi fleet in the country. Discounted shared rides are available between the convention center and downtown. In addition, a taxi dispatch center is located in McCormick Place to ensure cabs are readily available to meet demand.

Find the latest information at SfN.org.

Annual Meeting Contributors

The Society for Neuroscience gratefully acknowledges the generous support of the following event contributors:



AstraZeneca
Young Investigator Award



The Dana Foundation
Science Educator Award



David Kopf Instruments
David Kopf Lecture on Neuroethics



Eli Lilly and Company Foundation
Julius Axelrod Prize



eLife Science Publications, Ltd.
Trainee Professional Development Awards



Elsevier
Dialogues Between Neuroscience
and Society Lecture



eNeuro
Trainee Professional Development
Awards Poster Session



Friends of SfN Fund
and SfN Memorial Fund
Trainee Professional Development Awards

The Grafstein Family

Bernice Grafstein Award for Outstanding
Accomplishments in Mentoring



The Grass Foundation
Albert and Ellen Grass Lecture
Donald B. Lindsley Prize in
Behavioral Neuroscience



The Gruber Foundation
Peter and Patricia Gruber International
Research Award in Neuroscience
Peter and Patricia Gruber Lecture

The Journal of Neuroscience

The Journal of Neuroscience
Trainee Professional Development
Awards Poster Session



The Kavli Foundation
Fred Kavli History of
Neuroscience Lecture



MedImmune
Presidential Special Lecture



National Institute of Neurological
Disorders and Stroke
Neurobiology of Disease Workshop
Neuroscience Scholars Program



National Primate Research Centers
Animals in Research Panel

The Nemko Family

The Nemko Family
Nemko Prize in Cellular or
Molecular Neuroscience



Pfizer
Trainee Professional Development
Awards



The Swartz Foundation
Swartz Prize for Theoretical and
Computational Neuroscience

The Trubatch Family

The Trubatch Family
Janett Rosenberg Trubatch
Career Development Awards

The Waletzky Award Prize Fund

The Waletzky Award Prize Fund
Jacob P. Waletzky Award

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This image shows dye-filled, genetically identified retinal ganglion cells (RGCs). Some RGC types are more likely than others to degenerate in the early stages

of glaucoma, one of the leading causes of blindness. RGCs whose dendrites reside in the "Off" sublayer of the inner retina are particularly vulnerable. Courtesy, with permission: Rana N. El-Danaf and Andrew D. Huberman, 2015, *The Journal of Neuroscience* 35: 2329-2343

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Neuromuscular junction staining of a postnatal day 9 mouse splenius capitis, a muscle affected in spinal muscular atrophy (SMA). Acetylcholine receptors, labeled with α -bungarotoxin, are shown in red. Neurofilament/Synaptic Vesicle 2 are shown in green. Courtesy, with permission: Nimrod Miller, Zhihua Feng, Brittany M. Edens, Ben Yang, Han Shi, Christie C. Sze, Benjamin Taige Hong, Susan C. Su, Jorge A. Cantu, Jacek Topczewski, Thomas O. Crawford, Chien-Ping Ko, Charlotte J. Sumner, Long Ma, and Yong-Chao Ma, 2015, *The Journal of Neuroscience* 35: 6038-6050

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Tyrosine hydroxylase immunoreactive juxtglomerular cells in the olfactory bulb of a mouse expressing a mutant form of ER81, a transcription factor thought to regulate species-specific transcription of genes required for differentiation of dopaminergic neurons. Courtesy, with permission: Jan E. Melom and J. Troy Littleton, 2013, *The Journal of Neuroscience* 33: 1169-1178

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3D reconstruction of abnormal hypertrophic astrocytes with long, thick processes in the hippocampus of a mouse model of Alexander disease (GFAP⁺). Astrocytes are immunostained for glial fibrillary acidic protein (GFAP) with Nissl counterstain for nuclei. Courtesy, with permission: Alexander A. Sosunov, Eileen Guilloyle, Xiaoping Wu, Guy M. McKhann 2nd, and James E. Goldman, 2013, *The Journal of Neuroscience* 33: 7439-7450

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Expression of Neurogenin3 (yellow) in ventral spinal cord progenitors (indicated by Nkx2.2 staining, purple) precedes neuronal differentiation (indicated by β III-tubulin staining, light blue). Neurogenin3 in the spinal cord restricts the development of the serotonergic system to the hindbrain. Courtesy, with permission: Abel L. Carcagno, Daniela J. Di

a network surrounding neuronal cell bodies. Neuronal nuclei are stained orange and glial nuclei are stained blue. Courtesy, with permission: Jan E. Melom and J. Troy Littleton, 2013, *The Journal of Neuroscience* 33: 1169-1178

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For members who joined or renewed their 2015 membership by Jan. 31, 2015.
- **Advance Member Registration and Housing Opens July 15**
- **Advance Nonmember Registration and Housing Opens July 21**

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