When citing an abstract from the 2025 annual meeting, please use the format below.

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Information is current as of October 1, 2025. See the Neuroscience 2025 Neuroscience Meeting Planner on SfN.org for the most up-to-date information.

Minisymposium

MIN01: Development of Molecular Neuropathology in Down Syndrome Across the Lifespan — Anita Bhattacharyya

Theme: Theme A – Development

Location: SDCC Rm 6DE

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

Description: Down syndrome is the most common genetic form of intellectual disability and the most common genetic form of Alzheimer's disease, yet there is little information about how these two processes may be linked. This session will explore how neurodevelopment is disrupted and how neurodegeneration emerges in Down syndrome through presentations of molecular features of the brain throughout the lifespan, from prenatal development to Alzheimer's disease onset in adulthood.

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

MIN01.01. Chair

A. Bhattacharyya;
University of Wisconsin-Madison, Madison, WI

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

MIN01.02. Molecular mechanisms of altered cortical development in Down syndrome

L. De La Torre-Ubieta;
UCLA, Los Angeles, CA

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

MIN01.03. Spatial and Single-Cell Analysis Reveals Molecular and Cellular Defects in Fetal Brains with Down Syndrome

L. Tao;
Institutes of Brain Science, Fudan University, Shanghai, China

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

MIN01.04. Molecular mechanisms underlying early postnatal cortical development deficits in Down syndrome

A. M. Sousa;
UW-Madison, Madison, WI

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

MIN01.05. Molecular differences in early postnatal basal forebrain foreshadows neurodegeneration in Down syndrome.

A. Bhattacharyya;
University of Wisconsin-Madison, Madison, WI

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

MIN01.06. Alzheimer disease neuropathology evolves across the lifespan in the brains of people with Down syndrome

E. Head;
University of California-Irvine, Irvine, CA

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

MIN01.07. Spatial transcriptomic architecture of DS-AD

V. Swarup;
University of California, Irvine, Irvine, CA

Minisymposium

MIN02: Glial Responses to Traumatic Brain Injury and Stroke: Mechanistic Implications for Brain Injury — Shinghua Ding

Theme: Theme D – Neuroimmunity, Neurovasculature, and Neural Injury

Location: SDCC Rm 6B

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

Description: Central nervous system (CNS) injury including ischemic stroke and traumatic brain injury (TBI) is a leading cause of human death and disability. Glial cells including astrocytes, microglia, and oligodendrocytes are important partners of neurons and are activated after injury. This session will provide mechanistic insights into reactive glial cells in functional recovery after CNS injury. The speakers have different academic ranks including postdoctoral fellow, assistant professor, and professor.

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

MIN02.01. Chair

S. Ding;
University of Missouri, Columbia, MO

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

MIN02.02. Targeting astrocytes in post-stroke neural repair: why, where, and how

A. J. Gleichman;
Ohio State University College of Medicine, Columbus, OH

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

MIN02.03. Astrocyte metabolism and function: insights from in vitro study.

S. Yang;
Univ North Texas Hlth Sci Ctr, Fort Worth, TX

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

MIN02.04. NAMPT-mediate metabolic change of reactive astrocytes improves stroke outcomes.

Z. ZHANG;
University of Missouri-Columbia, COLUMBIA, MO

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

MIN02.05. Non-excitatory amino acid transporters drive astroglial swelling and amplify hypoxic and ischemic neuronal injury.

S. A. Kirov;
Medical College of Georgia at Augusta University, Augusta, GA

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

MIN02.06. Role of blood plasma factors in traumatic brain injury (TBI)-mediated microglial activation.

R. M. Ritzel, First;
University of Texas Health Science Center at Houston, Houston, TX

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

MIN02.07. Oligodendrocyte dysfunction in repetitive mTBI-mediated demyelination

D. Sun;
Univ. of Pittsburgh Med School, Pittsburgh, PA

Minisymposium

MIN03: Converging Themes in Multisensory and Sensorimotor Integration — Patrick Haggard

Theme: Theme F – Motor Systems

Location: SDCC Rm 29

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

Description: The nervous system combines information across multiple sensory sources to flexibly regulate behavior. The recent research presented here nevertheless reveals striking variations across systems in how these processes work. The nervous system obeys Bayesian principles for cue combination, but only when multiple signals can be attributed to a common

cause. This session will investigate how attribution and integration are related, across several sensory and motor systems.

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

MIN03.01. Chair

P. Haggard;
University College London, London, United Kingdom

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

MIN03.02. Sensorimotor Adaptation for Motor Augmentation

M. Molina-Sanchez;
MRC Cognition and Brain Sciences Unit, University of Cambridge, Cambridge, United Kingdom

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

MIN03.03. Decoding self-motion from visual image sequences: implicit behavioural responses and CNN models

H. Gomi;
NTT Communication Sci Labs, Kanagawa, Japan

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

MIN03.04. Biologically plausible algorithms to integrate sensory streams and motor actions, without explicit supervision

M. Sahani;
Gatsby Unit, UCL, London, United Kingdom

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

MIN03.05. Bayesian Causal Inference in multisensory perception

L. Shams;
UCLA, Los Angeles, CA

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

MIN03.06. Multisensory integration, and its applications, in adults and children with and without visual impairment

M. Gori;
ISTITUTO ITALIANO DI TECNOLOGIA, Genova, Italy

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

MIN03.07. Disentangling the spatial information carried by sensory and motor signals during self-touch

P. Haggard;
University College London, London, United Kingdom

Minisymposium

MIN04: Cognitive Maps in the Prefrontal Cortex — Mathias Sablé-Meyer

Theme: Theme I – Cognition

Location: SDCC Rm 6CF

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

Description: The prefrontal cortex (PFC) is critical for cognition. A plethora of findings implicate rich neural representations of learned task structures in the PFC. What dimensions of the external world and of our mental processes do these representations encode? And how do they facilitate flexible behavior? This minisymposium brings together empirical research from rodents, nonhuman primates, and humans with theoretical modeling to tackle these questions head on.

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

MIN04.01. Chair

M. Sablé-Meyer;
UNITED KINGDOM.

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

MIN04.02. Neural models of compositionality

A. Pouget;
University of Geneva, Geneva, Switzerland

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

MIN04.03. A Neural Mechanism for Representing Hierarchical Structure in Human Prefrontal Cortex

M. Sablé-Meyer;
UCL, London, United Kingdom

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

MIN04.04. An abstract relational map emerges in the human medial prefrontal cortex with consolidation

A. B. Baram;
University of Oxford, Oxford, United Kingdom

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

MIN04.05. Hierarchical control of sequence working memory in macaque prefrontal cortex

L. Wang;
Institute of Neuroscience, CAS, Shanghai, China

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

MIN04.06. Prefrontal representations of a cognitive map for value-guided choice

E. Gutierrez;
University of Oxford, Oxford, United Kingdom

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

MIN04.07. The human brain encodes structured information using the Language of Thought

F. Al Roumi;
Cognitive Neuroimaging Unit, CEA, INSERM, NeuroSpin Center, 91191 Gif/Yvette, France, Gif-Sur-Yvette, FRANCE.

Minisymposium

MIN05: Recent Advances in Optically-Based Investigations of Synaptic Connectivity — Dimitrii Tanese

Theme: Theme J – Techniques

Location: SDCC Rm 28

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

Description: Mapping synaptic connectivity and investigating synaptic signaling are essential for understanding neuronal communication and linking circuits to function. Until recently, technical challenges limited the detection and recording of synapses to typically low-yield, invasive, or *ex vivo* approaches. This minisymposium will present novel strategies and optics-based methods for higher-throughput *in vitro* and *in vivo* investigations of functional synaptic connections at cellular resolution.

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

MIN05.01. Chair

D. Tanese;
Vision Institute, Paris, France

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

MIN05.02. Co Chair

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

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

MIN05.03. Functional connectomics in mouse visual cortex

A. S. Tolias;
Stanford University, Stanford, CA

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

MIN05.04. Mapping local circuits *in vivo* with two-photon holographic light shaping

D. Tanese;
Vision Institute, Paris, France

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

MIN05.05. All-optical mapping of feedback and sensory-evoked synaptic inputs to pyramidal neurons

C. D. Dürst;
University of Geneva, Department of Basic Neurosciences, Geneva, Switzerland

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

MIN05.06. Long-range spinal circuit motifs revealed by circuit optogenetics in zebrafish

M. Koyama;
University of Toronto, Toronto, ON, Canada

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

MIN05.07. High-Throughput Synaptic Mapping of Excitatory and Inhibitory Distributions in Cortical Circuits

M. A. Gajowa;
University of California, Berkeley, Berkeley, CA

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

MIN05.08. Illuminating causal links between neural circuit activity and behavior

M. Hausser;
UCL / HKU, London / HK, United Kingdom

Minisymposium

MIN06: Beyond Dissociated Single Cells: High-Resolution Spatial Omics in Aging and Disease — Vilas Menon

Theme: Theme C – Neural Aging and Degeneration

Location: SDCC Rm 6B

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

Description: Single cell studies have identified selective alterations in neurons and glia associated with aging and neurological disease. However, these studies discard spatial information since they rely on dissociated cells; localizing cell type-specific changes in intact tissue is the next frontier in single cell omics. This minisymposium will highlight results from a new class of single cell-resolution spatial transcriptomics, proteomics, and lipidomics studies of aging and neurodegenerative disease.

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

MIN06.01. Chair

V. Menon;
Columbia University Irving Medical Center, New York, NY

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

MIN06.02. Large-scale highly-multiplexed ISH on human brain tissue identifies layer-specific cellular rearrangements associated with Alzheimer's Disease

J. L. Close;
Allen Institute for Brain Science, SEATTLE, WA

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

MIN06.03. High-resolution transcriptome-wide profiling of human brain tissue in aging and Alzheimer's Disease

A. Keller;
Saarland University, Saarbrucken, Germany

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

MIN06.04. Spatial approaches uncover conserved and distinct alterations in human brain tissue across diseases

V. Menon;
Columbia University Irving Medical Center, New York, NY

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

MIN06.05. 3-D profiling of human brain tissue with highly multiplexed antibody staining identifies cellular associations with brain pathologies

M. Taga;
Columbia University Irving Medical Center, New York, NY

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

MIN06.06. Brain region-specific lipid alterations in aging and Alzheimer's Disease models using high-resolution spatial lipidomics

L. B. McIntire;
Weill Cornell Graduate School of Medical Sciences, New York, NY

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

MIN06.07. Single cell-resolution brain-wide spatial proteomics characterization of cell type-specific compositional changes in aging and disease

K. M. O'Connell;
The Jackson Laboratory, Bar Harbor, ME

Minisymposium

MIN07: Connectivity, Computation, and Plasticity of the Early Visual System: Diversity and Common Rules — Xuefeng Shi

Theme: Theme E – Sensory Systems

Location: SDCC Rm 28

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

Description: The visual system is a complex hierarchical structure that computes diverse visual information to guide cognition and behavior. Elucidating the principles that govern the development and function of the visual system's circuitry is a central goal in visual neuroscience. This session will highlight recent advances in connectivity, computation, and plasticity in the retinocollicular and retino-geniculo-cortical pathways.

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

MIN07.01. Chair

X. Shi;
Tianjin Eye Hospital, Nankai University, Tianjin, China

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

MIN07.02. Co Chair

W. Wei;
University of Chicago, Chicago, IL

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

MIN07.03. Pattern, plaids, and perception: circuit insights into retinal motion processing

Z. Deng;
University of Chicago, Chicago, IL

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

MIN07.04. Vector summation of motion direction in the superior colliculus

C. Li;
University of Virginia, Charlottesville, VA

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

MIN07.05. Synaptic dynamics governing spatial integration in primary visual cortex

L. L. Glickfeld;
Duke University, Durham, NC

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

MIN07.06. Coarse to fine developmental maturation in primary visual cortex

G. B. Smith;
University of Minnesota, Minneapolis, MN

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

MIN07.07. Development and maintenance of visual circuits in the mouse superior colliculus

J. W. Triplett;
Children's National Hospital, Washington, DC

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

MIN07.08. A developmental critical period for ocular dominance plasticity of binocular neurons in mouse superior colliculus

Y. Gu;
Fudan University, Shanghai, China

Minisymposium

MIN08: Critical Periods and Beyond: Dynamic Functions of Perineuronal Nets in Cognition, Development, and Disease — Jon Sakata

Theme: Theme G – Integrative Physiology and Behavior

Location: SDCC Rm 6CF

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

Description: Perineuronal nets (PNNs) are extracellular matrices that surround neurons regulating cognition, sensory processing, and behavior. Although the appearance of PNNs at the end of developmental critical periods identified them as “molecular brakes” on plasticity, recent studies extend their contributions to substance abuse disorders, metabolism, neurodegeneration, and more. This session will integrate fundamental and clinical studies to identify conserved and novel functions of PNNs.

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

MIN08.01. Chair

J. T. Sakata;
McGill University, Montreal, QC, Canada

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

MIN08.02. Co Chair

B. A. Sorg;
Legacy Research Institute, Portland, OR

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

MIN08.03. Normalizing CA2 perineuronal nets in developing Shank3B-/- and Fmr1-/- mice restores social memory

E. J. Diethorn;
Princeton University, Princeton, NJ

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

MIN08.04. Experience- and perineuronal net-dependent maturation of episodic-like memory function in the hippocampus

A. I. Ramsaran;
The Hospital for Sick Children, Toronto, ON, Canada

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

MIN08.05. Influence of perineuronal nets in motor circuitry on vocal learning and performance of songbirds

X. Wan;
McGill University, Montréal, QC, Canada

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

MIN08.06. Early-life sleep disruption modifies PNN maturation surrounding parvalbumin interneurons in prairie voles

N. E. P. Milman;
OHSU, Portland, OR

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

MIN08.07. Comprehensive mouse atlas of cortical perineuronal nets reveal new insights into their roles in social behaviors

K. Krishnan;
University of Tennessee At Knoxville, Knoxville, TN

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

MIN08.08. Perineuronal net destabilization is linked to decreased brain volume and loss of cognition in aged humans

K. M. Alonge;
University of Washington, Seattle, WA

Minisymposium

MIN09: Unlocking Lateral Entorhinal Cortex Functions: From Memory Formation to Aging and Alzheimer's Disease — Susana Mingote

Theme: Theme I – Cognition

Location: SDCC Rm 29

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

Description: This session will explore the function of the lateral entorhinal cortex (LEC) in healthy, aging, and Alzheimer's disease (AD) conditions. As a key player in episodic memory, the LEC is among the earliest regions affected by aging and AD. Understanding its vulnerabilities is crucial for developing interventions to mitigate cognitive decline. This minisymposium will highlight recent advances in LEC circuit functions and mechanisms underlying memory and its susceptibility to aging and AD.

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

MIN09.01. Chair

S. Mingote;
CUNY Advanced Science Res Ctr, New York, NY

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

MIN09.02. Hippocampus-projecting neurons in the lateral entorhinal cortex are modulated by long-range inputs from medial entorhinal cortex

M. P. Witter;
Kavli Inst. Systems Neuroscience, Norw. Univ. Sci, Trondheim, Netherlands

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

MIN09.03. Investigating Lateral Entorhinal Cortex inputs to the hippocampus and their effects on neurogenesis

J. A. Ainge;
University of St Andrews, St Andrews, United Kingdom

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

MIN09.04. Episodic memory: from the lateral entorhinal cortex to a distributed network.

N. Origlia;
CNR- Neuroscience Institute, PISA, Italy

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

MIN09.05. Age-Related Vulnerability of Dopamine-Glutamate Neurons Projecting to the Lateral Entorhinal Cortex

S. Mingote;
CUNY Advanced Science Res Ctr, New York, NY

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

MIN09.06. Functional consequences of lateral entorhinal cortical cholinergic dysfunction in cognitive aging

M. R. Ananth;
NIH/NINDS, Bethesda, MD

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

MIN09.07. Early disruption of entorhinal dopamine in a knock-in model of Alzheimer’s disease

T. Nakagawa;
University of California, Irvine, Irvine, CA

Minisymposium

MIN10: Excitatory and Inhibitory Circuit Rewiring in Development and Adulthood — Csaba Foldy

Theme: Theme A – Development

Location: SDCC Rm 6A

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

Description: The brain is remarkably flexible and adaptive. Neurons modify their connections throughout life in response to learning, sensory experiences, and insults. While the role of synaptic plasticity in circuit remodeling is well established, our understanding of large-scale structural reorganization, such as axonal rewiring, remains limited. This minisymposium will highlight recent advances in understanding brain rewiring in development and adulthood.

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN10.01. Chair

C. Foldy;
University of Zurich, Zurich, Switzerland

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN10.02. Co Chair

L. Lim;
VIB/KU Leuven, Leuven, Belgium

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN10.03. Postmitotic diversification and wiring of cortical inhibitory neurons

L. Lim;
VIB/KU Leuven, Leuven, Belgium

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN10.04. Perinatal influence on the formation of the cortical network

M. F. Paredes;
UCSF, San Francisco, CA

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN10.05. Rewiring of adult brain circuits with molecular programming

C. Foldy;
University of Zurich, Zurich, Switzerland

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN10.06. From sight to scent: reorganization of sensory circuits after brain injury

S. Grade;
Institute of Molecular Biotechnology (IMBA), Vienna, Austria

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN10.07. Migrating interneurons shape cerebral cortex morphogenesis and wiring across species

L. Nguyen;
University of Liège, Liege, Belgium

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN10.08. Distinct excitatory and inhibitory spinal circuit plasticity that regulates age of injury-dependent locomotor recovery after spinal lesion

A. Takeoka;
RIKEN Center for Brain Science, Saitama, Japan

Minisymposium

MIN11: Astrocytes as Therapeutic Targets in Neurodegenerative Disorders — Isabel Salas

Theme: Theme B – Neural Excitability, Synapses, and Glia

Location: SDCC Rm 6DE

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

Description: This minisymposium will explore the emerging roles of astrocytes in neurodegenerative disorders, emphasizing their contributions to disease pathogenesis and progression and their therapeutic potential. The speakers will also discuss the use of novel omics technologies, murine, and human induced pluripotent stem cell (iPSC)-based models to explore mechanisms underlying the involvement of astrocytes in pathological processes, as well as recent efforts to identify novel therapeutic targets and biomarkers for neurodegenerative diseases.

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN11.01. Chair

I. Salas;
Salk Institute, La Jolla, CA

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN11.02. Co Chair

A. M. Arranz;
Achucarro Basque Center For Neuroscience, Leioa, Spain

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN11.03. Regulation of CNS immunity by astrocytes

F. J. Quintana;
Harvard Medical School, Boston, MA

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN11.04. Exploring astrocyte roles and signaling in neurodegenerative disease

C. Escartin;
NeuroPSI, CNS, Paris-Saclay Université, Paris, France

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN11.05. Molecular alterations of astrocyte-vasculature interactions in Alzheimer's disease mouse models and human brains.

B. Díaz Castro;
UK Dementia Research Institute. The University of Edinburgh, Edinburgh, United Kingdom

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN11.06. Divergent Effects of APOE3 and APOE4 Human Astrocytes on Key Alzheimer’s Disease Hallmarks in Chimeric Mice

A. M. Arranz;
Achucarro Basque Center For Neuroscience, Leioa, Spain

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN11.07. Principles Underlying Astrocyte-Neuron Connectivity in Parkinson’s Disease

n. elazar;
Duke University School of Medicine, Durham, NC

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN11.08. Targeting astrocyte factors to prevent synaptic dysfunction in Alzheimer’s disease

I. H. Salas;
Salk Institute, La Jolla, CA

Minisymposium

MIN12: The Neuromuscular Junction: A Shared Vulnerability in Aging and Disease — Smita Saxena

Theme: Theme C – Neural Aging and Degeneration

Location: SDCC Rm 28

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

Description: This session will delve into neuromuscular junction (NMJ) dysfunction in both aging and disease, examining its role in the development and progression of conditions like amyotrophic lateral sclerosis (ALS), spinal muscular atrophy (SMA), and Charcot-Marie-Tooth (CMT). Expert-led presentations will explore cellular and molecular changes at the NMJ by normal aging and pathophysiology, impacts on motor neuron and muscle function, and how aging accelerates disease pathogenesis. The session will aim to identify therapeutic targets to mitigate NMJ failure, enhance function, and improve quality of life.

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN12.01. Chair

S. Saxena;
University of Missouri, Columbia, MO

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN12.02. Co Chair

K. R. Moss;
University of Missouri, Columbia, MO

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN12.03. A glial perspective of mouse and human NMJs in aging and disease

R. Robitaille;
University of Montreal, Montreal, QC, Canada

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN12.04. Targeting presynaptic neuromuscular function as a therapeutic approach for ALS

Y. Badawi;
University of Pittsburgh, Pittsburgh, PA

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN12.05. Charcot-Marie-Tooth disease and the neuromuscular junction: mechanistic insights and therapeutic opportunities

J. Funke;
The Jackson Laboratory, Bar Harbor, ME

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN12.06. Age-related NMJ transmission failure

F. B. Darvishi;
University of Missouri, Columbia, MO

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN12.07. MuSK regulates neuromuscular junction Nav1.4 localization and excitability

L. A. Fish;
University of Michigan, Ann Arbor, MI

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN12.08. ClC-1 inhibition as a novel approach to restore muscle activation in neuromuscular disease

T. Pedersen;
Aarhus University, NMD Pharma, Aarhus, Denmark

Minisymposium

MIN13: The Gut Microbiome in Traumatic Brain Injury: Insights From Bench and Bedside — Cole Vonder Haar

Theme: Theme D – Neuroimmunity, Neurovasculature, and Neural Injury

Location: SDCC Rm 29

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

Description: Increasingly, the gut microbiome and enteric nervous system are recognized as significant contributors to a multitude of neurological and psychiatric disorders. An understanding of how the gut microbiome influences brain injuries and their sequelae is still developing. This session will highlight recent discoveries establishing a causal role for the gut microbiome in the evolution of post-injury pathology and functional consequences.

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN13.01. Chair

C. Vonder Haar;
Ohio State University, Columbus, OH

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN13.02. Investigating the role of the brain-gut axis in socio-emotional functioning following mild traumatic brain injury in adolescent rats

R. Mychasiuk;
Monash University, Melbourne, Australia

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN13.03. Alterations in the GH/IGF-1 axis and gut microbiome after traumatic brain injury

R. J. Urban;
The University of Texas Medical Branch, Galveston, TX

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN13.04. The gut microbiome and post-TBI impairments in decision-making

C. Vonder Haar;
Ohio State University, Columbus, OH

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN13.05. Exploring microbiome-derived biomarkers and therapeutics for TBI

S. Villapol;
Houston Methodist Research Institute, Houston, TX

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN13.06. Prognostic and therapeutic applications for microbial metabolites following trauma

D. W. Simon;
University of Pittsburgh, Pittsburgh, PA

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN13.07. Protection against post-traumatic epilepsy by commensal gut Gram-negative bacteria.

A. M. Mazarati;
University of California Los Angeles David Geffen School of Medicine, Los Angeles, CA

Minisymposium

MIN14: Emerging Experimental Approaches to Probe Conserved Neurobehavioral Mechanisms Underlying Affiliative and Antagonistic Social Behaviors — Farah Bader

Theme: Theme G – Integrative Physiology and Behavior

Location: SDCC Rm 6B

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

Description: This session will feature research integrating advanced tools for neural circuit recording and manipulation applied across diverse species, multi-scale computational modeling, and evolutionary and ethological frameworks to generate new paradigms for interrogating the conservation and divergence of neural circuit functions underlying social behaviors within such domains as aggression, sociality, courtship, and parental behavior.

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN14.01. Chair

F. N. Bader;
National Institute of Health, Rockville, MD

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN14.02. Co Chair

A. L. Falkner;
Princeton University, Princeton, NJ

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN14.03. Mapping the neural dynamics of social dominance and defeat

A. L. Falkner;
Princeton University, Princeton, NJ

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN14.04. Unraveling the neural basis of affective states using dynamical systems: from neural representation to causal perturbation

A. Nair;
Caltech, Pasadena, CA

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN14.05. Neuromodulatory landscapes shaping sociality

Y. Kozorovitskiy;
Northwestern University, Evanston, IL

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN14.06. Hippocampal Representation during natural collective behaviors in bats

M. M. Yartsev;
UC Berkeley, Berkeley, CA

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN14.07. Sensory and emotional processing of social signals

R. C. Froemke;
NYU Grossman School of Medicine, New York, NY

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN14.08. Natural behavior is learned through dopamine-mediated reinforcement

V. Gadagkar;
Columbia University, New York, NY

Minisymposium

MIN15: Circuit-Based Approaches to Understanding the Anterior Cingulate Cortex (ACC) — Julie Fudge

Theme: Theme H – Motivation and Emotion

Location: SDCC Rm 6CF

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

Description: The ACC is an interface between “interoceptive” and “exteroceptive” worlds. The “interoceptive” subgenual ACC is now a clear marker and therapeutic target for severe mood disorders. Nearby ACC subregions play roles in effortful decision-making and monitoring social cues, also affected by these illnesses. This session will feature breakthroughs in the functional and structural details ACC subcircuitry primates and humans, to broaden understanding of symptoms, and drive precision targeting in psychiatry.

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN15.01. Chair

J. L. Fudge;
University of Rochester Medical Center, Rochester, NY

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN15.02. Co Chair

D. C. Myers;
University of Rochester, Rochester, NY

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN15.03. Combinations of prefrontal cortical and thalamic afferents differentially innervate macaque sgACC and pgACC.

D. C. Myers;
University of Rochester, Rochester, NY

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN15.04. ACC gyrus neurons encode identity of social images.

E. Rich;
New York University, New York, NY

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN15.05. Downstream of the ACC: motivation under aversive conditions is regulated by a striatopallidal pathway in non-human primates.

J.-m. N. OH;
Kyoto University, Kyoto, Japan

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN15.06. Assessing the brain wide effects of chemogenetic and electrical neuromodulation of subcallosal anterior cingulate cortex.

S. H. Fujimoto;
Icahn School of Medicine At Mount Sinai, New York, NY

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN15.07. Resting fMRI-guided TMS evokes subgenual anterior cingulate response in depression.

D. J. Oathes;
University of Pennsylvania Perelman School of Medicine, Philadelphia, PA

Time: Sunday, November 16, 2025, 2:00 PM - 4:30 PM

MIN15.08. Ethologically relevant neurobehavioral biomarkers of emotional state.

N. R. Provenza;
Baylor College of Medicine, HOUSTON, TX

Minisymposium

MIN16: Brain Networks, Sleep, and Dementia: Identifying the Role of Sleep in Neuropathological Progression and Translational Opportunities — Haung Yu

Theme: Theme C – Neural Aging and Degeneration

Location: SDCC Rm 6CF

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

Description: Sleep disturbance is linked to memory impairment and proteinopathy as seen in Alzheimer's disease (AD). The intricacies of how sleep disorders can be involved in neurodegenerative diseases are paramount to abating early AD pathological changes. This session will present work on mechanistic changes in neuronal or glymphatic networks, with translational insight as to how modulation of these systems can preserve memory and reduce neuropathology and may be used to identify vulnerable populations.

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

MIN16.01. Chair

H. (. Yu;
University of Toronto, Toronto, ON, Canada

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

MIN16.02. Co Chair

K. Kastanenka;
Harvard, Boston, MA

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

MIN16.03. Dynamics of sleep impairment and autophagy

H. Yu;
University of Toronto, Toronto, ON, Canada

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

MIN16.04. Neural Network Dynamics and Microglial Activation During Sleep

K. Kastanenka;
Harvard, Boston, MA

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

MIN16.05. Region-specific emergence of neuronal activity disruptions with early hAPP/Ab pathology

M. J. Rowan;
Emory University School of Medicine, Atlanta, GA

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

MIN16.06. Slow wave sleep as a therapeutic target for Alzheimer's disease

B. A. Kent;
Simon Fraser University, Burnaby, BC, Canada

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

MIN16.07. Restoring Glymphatic Flow After TBI Normalizes Sleep Patterns

R. HUSSAIN;
University of Rochester, NY, Center for Translational Neuromedicine, Rochester, NY

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

MIN16.08. Relationships among local NREM sleep features, Alzheimer's disease biomarkers, and sleep-dependent memory

B. A. Mander;
University of California, Irvine, Irvine, CA

Minisymposium

MIN17: The Richness of Vision in the Mammalian Brain: Neural Codes for Visual Perception and Behavior in Three Dimensions — Kristine Krug

Theme: Theme E – Sensory Systems

Location: SDCC Rm 29

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

Description: Primates and other mammals need to interact with a rich 3D environment to survive. Building on a detailed understanding of how binocular depth is encoded across the visual cortex, recent research has significantly contributed toward unraveling the neural representations and codes that shape our rich visual interactions with the 3D world around us. This session will highlight recent advances in our understanding of 3D perception and cognition across mice, tree shrews, monkeys, and humans.

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

MIN17.01. Chair

K. Krug;
Otto-von-Guericke-University, Magdeburg, Germany

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

MIN17.02. Co Chair

A. Rosenberg;
University of Wisconsin - Madison, Madison, WI

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

MIN17.07. Neural mechanisms of combining different cues for 3D perception in primates.

K. Krug;
Otto-von-Guericke-University, Magdeburg, Germany

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

MIN17.04. Stereoscopic vision and behavior in the mouse.

J. M. Samonds;
University of Texas At Austin, Austin, TX

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

MIN17.05. Probing binocular disparity tuning in the human using multi-modal neuroimaging

H. Bridge;
University of Oxford, Oxford, United Kingdom

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

MIN17.06. How 3D shape vision works.

C. E. Connor;
Johns Hopkins Univ, Baltimore, MD

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

MIN17.03. Neural mechanisms for stereoscopic depth in tree shrew V1.

S. Tanabe;
University of Virginia, Charlottesville, VA

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

MIN17.08. Mechanisms of spatial constancy for 3D object vision in primates.

A. Rosenberg;
University of Wisconsin - Madison, Madison, WI

Minisymposium

MIN18: Beyond Value: Noncanonical Roles for Dopamine in Aversion and Reward — Melissa Sharpe

Theme: Theme H – Motivation and Emotion

Location: SDCC Rm 6B

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

Description: Traditionally, dopamine has been restricted to reward processing and value assignment. However, recent work reveals a role for dopamine beyond value, ushering in a new era in the study of dopamine function. This minisymposium will reveal novel findings across diverse dopamine circuits in a range of procedures, including threat avoidance, chronic pain, aggression, and complex learning tasks. This work requires us to build new theories of dopamine that reflect this diversity of dopamine function.

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

MIN18.01. Chair

M. Sharpe;
University of Sydney, Sydney, Australia

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

MIN18.02. Co Chair

M. C. Creed;
Washington University In St. Louis, Saint Louis, MO

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

MIN18.03. Dopamine integrates information about salient stimuli and actions topromote learning in dynamic environments

E. S. Calipari;
Vanderbilt University, Nashville, TN

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

MIN18.04. Unexpected dopamine signatures in ventral hippocampus during learning

M. Sharpe;
University of Sydney, Sydney, Australia

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

MIN18.05. Cell-type specific encoding of habenular prediction errors

E. L. Sylwestrak;
University of Oregon, Eugene, OR

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

MIN18.06. Mesolimbic adaptations in mesolimbic dopamine neurons underlying affective symptoms of chronic pain

M. Creed;
Washington University In St. Louis, Saint Louis, MO

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

MIN18.07. Prefrontal dopamine activity is critical for rapid threat avoidance learning.

Z. Zeidler;
University of California, Los Angeles, Los Angeles, CA

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

MIN18.08. Midbrain responses to errors in the prediction of value-neutral features of reward

T. Kahnt;
NIH, NIDA IRP, Baltimore, MD

Minisymposium

MIN19: Novel Tools and Methods for Noninvasive, Remote Neuromodulation — Minsuk Kwak

Theme: Theme J – Techniques

Location: SDCC Rm 28

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

Description: This session will explore cutting-edge, non-invasive, and wireless neuromodulation techniques that enable precise spatiotemporal control of neural activity. Topics include magnetogenetics, sonogenetics, and wireless optogenetics, alongside advances integrating genetic engineering and nanoscale materials for cell type-specific and wireless manipulation of deep brain neurons and pathways in vivo, offering new insights into behavior, physiology, and neurological treatments.

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

MIN19.01. Chair

M. Kwak;
Yonsei University, Seoul, Korea, Republic of

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

MIN19.02. Co Chair

L. Jae Hyun;
Yonsei University, Seoul, Korea, Republic of

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

MIN19.03. A high-performance magnetogenetics, m-Torquer, for wireless neuromodulation in freely moving animals

M. Kwak;
Yonsei University, Seoul, Korea, Republic of

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

MIN19.04. Minimally-invasive optogenetics to dissect brain and body circuits.

R. Chen;
UCSF, San Francisco, CA

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

MIN19.05. A method to achieve transient and reversible optical transparency in live animals with absorbing molecules

G. Hong;
Stanford University, Stanford, CA

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

MIN19.06. Sonogenetics for non-invasive neuromodulation

S. H. Chalasani;
The Salk Institute For Biological Studies, La Jolla, CA

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

MIN19.07. Wireless neuromodulation at submillimeter precision using microwave

C. Yang;
Boston University, Boston, MA

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

MIN19.08. Assembly of adeno-associated virus for efficient, non-invasive gene delivery

J. Park;
KAIST, Daejeon, Korea, Republic of

Minisymposium

MIN20: Shaping the Neocortex: Radial Glia and Astrocytes in Development and Evolution — Carmen Falcone

Theme: Theme A – Development

Location: SDCC Rm 6CF

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

Description: The session will highlight the crucial roles of radial glia and astrocytes in neocortex development and evolution. By integrating cutting-edge research on the neocortex across mammals, the speakers will show how these cells underlie the evolutionary expansion and the increase in brain complexity. The speakers will follow a developmental trajectory, from radial glia to astrocytes, thus providing a cohesive narrative linking cellular mechanisms to large-scale brain structures and evolutionary processes.

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN20.01. Chair

C. Falcone;
Towson University, Towson, MD

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN20.02. Co Chair

N. Kalebic;
Human Technopole, Milan, Italy

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN20.03. Human Accelerated Regions (HARs) fine-tuned regulation of neurogenesis and brain evolution

F. Mosti;
Duke University, Durham, NC

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN20.04. Radial Glia Morphology in Neocortex Development and Evolution

N. Kalebic;
Human Technopole, Milan, Italy

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN20.05. How Folds of the Cerebral Cortex Form and What They Mean

H. Kawasaki;
School of Med, Kanazawa University, Ishikawa, Japan

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN20.06. FeMale Glia: Influence of Sex Differences on Astrocyte Functions

B. Di Benedetto;
University Hospital Regensburg, Regensburg, Germany

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN20.07. Using Multi-Species Co-Cultures and Metabolic Challenges to Understand Astrocyte Evolution

C. C. Babbitt;
University of Massachussetts Amherst, Amherst, MA

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN20.08. Evolution and Development of Astrocytes: The Unique Features of Astrocytes in Primates

C. Falcone;
Towson University, Towson, MD

Minisymposium

MIN21: Single Cell Multiomics in Central Nervous System Injury and Recovery — Ozgun Gokce

Theme: Theme C – Neural Aging and Degeneration

Location: SDCC Rm 6B

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

Description: This session will highlight the pivotal moment in neurodegenerative research, driven by the convergence of single cell and spatial data generation. It will explore opportunities to understand cognitive decline, develop interventions for central nervous system injury and neurodegenerative disorders, and discuss best practices from the *Nature Neuroscience* Focus issue on single cell genomics, emphasizing how omics can guide neuroscience research and shape future directions.

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN21.01. Chair

O. Gokce;
Medical Faculty, University of BonnMedical Faculty, University of Bonn, German Center for Neurodegenerative Diseases (DZNE), bonn, Germany

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN21.02. Co Chair

N. Habib;
Hebrew University of Jerusalem, Jerusalem, Israel

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN21.03. Spatial and single-cell Approaches to Unravel White Matter Injury and Repair Mechanisms

O. GOKCE;
Medical Faculty, University of BonnMedical Faculty, University of Bonn, German Center for Neurodegenerative Diseases (DZNE), bonn, Germany

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN21.04. Using multiomics to define spatially restricted reactive astrocyte substates in disease.

S. A. Liddelow;
NYU Grossman School of Medicine, New York, NY

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN21.05. Single-Cell Insights into Sex-Specific Mechanisms of Demyelination in Aging and Alzheimer's Disease

L. Gan;
Weill Cornell Medicine, New York, NY

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN21.06. Spatiotemporally resolved molecular and cellular architecture of spinal cord injury

E. R. Burnside;
DZNE, Bonn, Germany

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN21.07. Genetic Control of Brain Expression and Splicing in Neurodegeneration

T. Raj;
Icahn School of Medicine at Mount Sinai, New York, NY

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN21.08. Divergent Cellular Trajectories in Brain Aging and Alzheimer's Disease

N. Habib;
Hebrew University of Jerusalem, Jerusalem, Israel

Minisymposium

MIN22: Advances in Cell Therapy for Neural Repair — Michael Lane

Theme: Theme D – Neuroimmunity, Neurovasculature, and Neural Injury

Location: SDCC Rm 29

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

Description: This session will present the latest advances in cell therapies for neural repair, featuring a diverse panel of experts and rising stars in neurotrauma. Cell therapy represents a leading approach for treating brain and spinal cord injury, with significant preclinical evidence for promoting repair and recovery, and translational developments. The session will highlight the convergence of stem cell biology, neuroscience, and engineering innovations that are transforming the therapeutic landscape.

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN22.01. Chair

M. A. Lane;
Drexel University, Philadelphia, PA

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN22.02. Co Chair

L. Zholudeva;
Gladstone Institutes, San Francisco, CA

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN22.03. Human Spinal Interneurons for Spinal Cord Repair

L. V. Zholudeva;
Gladstone Institutes, San Francisco, CA

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN22.04. Advances in Translation of Cell Therapy for Neurological Disorders

C. N. Svendsen;
Cedars-Sinai Medical Center, Los Angeles, CA

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN22.05. Cell-based Strategies for Repairing the Damaged Brain

I. L. Llorente;
Stanford University, Palo Alto, CA

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN22.06. Harnessing Human Neural Progenitor Cells for Neural Repair

E. C. Tsai;
Ottawa Hospital Research Institute, University of Ottawa, Ottawa, ON, Canada

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN22.07. Engineering Organoids to Treat Neurological Injury and Disease

L. O. Qiang;
Drexel University, PHILADELPHIA, PA

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN22.08. Preclinical study of an induced pluripotent stem cell-derived dopaminergic progenitor cell product for the treatment of Parkinson's disease, BR DA02

C. A. Paladini;
BlueRock Therapeutics, Cambridge, MA

Minisymposium

MIN23: No Central Executive?: Decision Formation Through Multi-Area Population Dynamics — Christopher Fetsch

Theme: Theme F – Motor Systems

Location: SDCC Rm 30

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

Description: Natural behavior is scaffolded by countless perceptual judgments and associated motor plans. Recent work suggests that this process evolves in a distributed manner across many brain areas, but how (and why) distributed circuits coordinate their activity during decision formation remains unclear. This session will highlight the use of high-density recording, causal circuit manipulation, and computational theory to uncover how population dynamics across multiple areas mediate perceptual decisions.

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN23.01. Chair

C. R. Fetsch;
Johns Hopkins University, Baltimore, MD

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN23.02. Co Chair

C. Chandrasekaran;
Boston University, Boston, MA

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN23.03. Mechanisms of Across-Area Consensus: How Cortical Areas Reach Agreement During Sensory Processing

M. Javadzadeh;
Cold Spring Harbor Laboratory, Cold Spring Harbor, NY

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN23.06. Distributed dynamics of decisions about actions

P. Cisek;
University of Montreal, Montreal, QC, Canada

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN23.04. Multi-area neural dynamics underlying flexible perceptual decisions

C. Chandrasekaran;
Boston University, Boston, MA

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN23.05. Parallel distributed computation of a perceptual choice and degree of confidence

C. R. Fetsch;
Johns Hopkins University, Baltimore, MD

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN23.07. A multi-region recurrent circuit for evidence accumulation in rats

D. Gupta;
University College London, London, United Kingdom

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN23.08. A brain-wide map of neural activity during perceptual decision-making with prior expectations

T. A. Engel;
Princeton University, Princeton, NJ

Minisymposium

MIN24: Anxiety and Beyond: Diversity in Ventral Hippocampus Circuits and Functions — Benedicte Amilhon

Theme: Theme H – Motivation and Emotion

Location: SDCC Rm 28

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

Description: The ventral hippocampus mediates diverse cognitive and emotional behaviors. This functional diversity is tied to intricate connectivity with other brain regions, including parallel input-outputs and local sub-circuits. This session will highlight recent circuit studies investigating the roles of distinct ventral hippocampus outputs (to lateral septum, nucleus accumbens, medial prefrontal cortex), inputs (from raphe nuclei), and local circuits, in reward-, emotion- and context-related functions.

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN24.01. Chair

B. Amilhon;
Université de Montréal - CHU Sainte-Justine Azrieli Research Center, Montreal, QC, Canada

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN24.02. Co Chair

A. Macaskill;
University College London, London, United Kingdom

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN24.03. Serotonergic inputs to the ventral hippocampus underlie sex differences in anxiety

B. Amilhon;
Université de Montréal - CHU Sainte-Justine Azrieli Research Center, Montreal, QC, Canada

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN24.04. Contribution of ventral hippocampal circuits in approach-avoidance decision making

R. Ito;
University of Toronto, Toronto, ON, Canada

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN24.05. Neuronal circuits of anxiety in the ventral hippocampus

S. Ciocchi;
University of Bern, Bern, Switzerland

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN24.06. A role for the ventral hippocampus in hidden state inference

A. Macaskill;
University College London, London, United Kingdom

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN24.07. Learning about reward and aversion in the ventral hippocampus

M. Kheirbek;
UCSF, San Francisco, CA

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

MIN24.08. Reward integration in ventral hippocampus projections to nucleus accumbens modulates engagement

R. C. Bagot;
McGill University, Montreal, QC, Canada

Minisymposium

MIN25: Behavioral Timescale Synaptic Plasticity: Phenomenology, Mechanisms and Role in Learning and Memory — Antoine Madar

Theme: Theme B – Neural Excitability, Synapses, and Glia

Location: SDCC Rm 29

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

Description: Hebbian synaptic plasticity is currently the main, but limited, framework to relate neuronal activity, network structure, learning, and memory. However, in recent years, a series of experimental and computational modeling studies have revealed a potentially more impactful form of synaptic plasticity, triggered on large dendritic spikes, related to somatic bursting and operating on the timescale of seconds. This minisymposium will take stock of what is currently known about behavioral timescale synaptic plasticity.

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

MIN25.01. Chair

A. D. Madar;
University of Chicago, Chicago, IL

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

MIN25.02. How widespread is BTSP?

J. C. Magee;
HHMI, Houston, TX

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

MIN25.03. Dynamics of BTSP induction and expression in CA1 and CA3 during familiarization

A. D. Madar;
University of Chicago, Chicago, IL

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

MIN25.04. Multiple forms of heterosynaptic plasticity regulate the induction of BTSP

T. J. O'Dell;
David Geffen Sch Med UCLA, Los Angeles, CA

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

MIN25.05. Redefining the role of hebbian-plasticity proteins in BTSP

A. Jain;
CHINTA TCG crest, Kolkata, India

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

MIN25.06. Latent representations in hippocampus emerge through Behavioral Timescale Synaptic Plasticity

C. Clopath;
Imperial College London, London, United Kingdom

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

MIN25.07. Application of BTSP to biologically constrained deep learning

A. D. Milstein;
Rutgers University, Piscataway, NJ

Minisymposium

MIN26: More Than Just a Feature Detector: Unveiling the Diverse Roles of the Auditory System — Michele Insanally

Theme: Theme E – Sensory Systems

Location: SDCC Rm 28

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

Description: Classic studies of the auditory system have emphasized its role as a feature detector that conveys sensory information to higher-order brain areas. However,emerging evidence

indicates that the auditory system is critical for decision-making, learning, communication, and other high-order functions. This session will highlight recent cutting-edge studies on the diverse roles and unique neural circuit properties of the auditory system revealing its wider cognitive function beyond uni-sensory processing.

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

MIN26.01. Chair

M. Insanally;
University of Pittsburgh SOM, Pittsburgh, PA

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

MIN26.02. Contributions of diverse cortical neuron responses to auditory perception and learning

M. Insanally;
University of Pittsburgh SOM, Pittsburgh, PA

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

MIN26.03. Corticothalamic circuits encode integral features of avoidance learning

L. M. Haetzel;
DZNE, Bonn, Germany

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

MIN26.04. Development of speech and language representations in children with epilepsy

L. S. Hamilton;
The University of Texas at Austin, Austin, TX

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

MIN26.05. Higher-order sensory cortical computations for learning

C. Drieu;
Johns Hopkins University, Baltimore, MD

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

MIN26.06. Sensorimotor mismatch responses in the auditory cortex

M. Solyga;
Friedrich Miescher Institute for Biomedical Research, Basel, Switzerland

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

MIN26.07. Neural circuits for vocal communication: insights from the singing mouse

A. Banerjee;
Cold Spring Harbor Laboratory, Cold Spring Harbor, NY

Minisymposium

MIN27: Evolutionary Neurogenomics: Multiomics-Enabled Insights Into Neural Circuity and Behavior Across Species — Morgan Wirthlin

Theme: Theme G – Integrative Physiology and Behavior

Location: SDCC Rm 6CF

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

Description: The rise of genomics has provided unprecedented resolution of neural cell types at a molecular level. This opens a unique opportunity for comparative neurogenomics to uncover evolutionary and functional differences in cell types between species. This session will highlight how multi-omics approaches (genomics, transcriptomics, proteomics, and epigenomics) are revealing how evolution acts on cell types, underpinning neural circuitry and behavior changes across diverse species.

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

MIN27.01. Chair

M. E. Wirthlin;
Allen Institute for Brain Science, Seattle, WA

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

MIN27.02. Co Chair

M. Schmitz;
Allen Institute for Brain Science, Seattle, WA

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

MIN27.03. Transcriptomic and cellular composition of dorsal striatum across species

G. Konopka;
UT Southwestern Medical Center, Dallas, TX

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

MIN27.04. From Neural Transcription to Behavior: Insights into Species and Individual Vocal Learning in Songbirds

K. Wada;
Hokkaido University, Sapporo, Japan

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

MIN27.05. Evolution of the vertebrate cerebral cortex: developmental programs, cell types, and tissue architecture

M. Tosches;
Department of Biological Sciences, Columbia University, New York, NY

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

MIN27.06. Age and sex pattern cell-specific gene expression in the primate brain

N. Snyder-Mackler;
Arizona State University, Tempe, AZ

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

MIN27.07. Evolution of Neuronal Diversity in the Vertebrate Retina

K. Shekhar;
University of California, Berkeley, Berkeley, CA

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

MIN27.08. Evolutionary innovation in cortical circuits for vision and behavior across 26 mammalian species

M. Wirthlin;
Allen Institute for Brain Science, Seattle, WA

Minisymposium

MIN28: The Multilane Hippocampus: Parallel Circuits for Memory Processing — Flavio Donato

Theme: Theme I – Cognition

Location: SDCC Rm 6B

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

Description: While the hippocampus is a recognized hub for memory processing, recent research has challenged the long-held assumption of homogeneity within its circuits, revealing an astonishing degree of diversity among its principal neurons and network dynamics. This session will trace the role of hippocampal diversity from development to adulthood, to offer new insights into how the hippocampus may exploit parallel processing channels to implement diverse computations for learning, memory, and navigation.

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

MIN28.01. Chair

F. Donato;
University of Basel, Basel, Switzerland

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

MIN28.02. Co Chair

L. M. De La Prida;
Instituto Cajal CSIC, Madrid, Spain

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

MIN28.03. Rewinding brain development to dissect hippocampal circuits

R. A. Cossart;
INSERM AIX-MARSEILLE UNIVERSITY, Marseille, France

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

MIN28.04. Developmental dynamics shapes the ontogeny of hippocampus dependent memories

F. Donato;
University of Basel, Basel, Switzerland

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

MIN28.05. Decomposing hippocampal neural manifolds: how cell types shape CA1 population dynamics

L. M. De La Prida;
Instituto Cajal CSIC, Madrid, Spain

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

MIN28.06. Geometry and dynamics of memory replay and generalization in the hippocampus

A. Fernandez-Ruiz;
Cornell University, Ithaca, NY

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

MIN28.07. Two ripple profiles coordinate hippocampal principal cell subpopulations offline

D. Dupret;
University of Oxford, Oxford, United Kingdom

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

MIN28.08. Hippocampal sequences span experience relative to reward

L. M. Giocomo;
Stanford University, Stanford, CA

Minisymposium

MIN29: Neurobiology of Early Life Stress — Emily Makowicz

Theme: Theme A – Development

Location: SDCC Rm 6DE

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

Description: This session will bring together researchers studying early-life stress and adversity. Speakers will focus on the pathogenesis and pathophysiology of early-life stress, vulnerability, and resilience, and related psycho-affective disorders. This session will bring diverse perspectives that can mutually inform each other and address the growing concerns regarding early-life stress. This session will highlight the social and clinical implications of investigating the effects of early-life stress.

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

MIN29.01. Chair

E. A. Makowicz;
Columbia University, New York, NY

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

MIN29.02. Co Chair

B. L. Williams;
Columbia University, New York, NY

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

MIN29.03. Neuropeptide signaling mediates anhedonia via an amygdala-accumbens network

M. T. Birnie;
University of California-Irvine, Irvine, CA

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

MIN29.04. Uncovering the impact of early life stress on genomic organization

R. Lin;
Princeton University, Princeton, NJ

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

MIN29.05. Too much too young? Neuroendocrine and neurobehavioral evidence of how the body makes sense of early life adversity

H. C. Brenhouse;
Psychology, Northeastern University, Boston, MA.

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

MIN29.06. Early Life Stress impacts on fear and rewarding behaviors in mice

B. L. Williams;
Columbia University, New York, NY

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

MIN29.07. Early life adversity alters reward-related behaviors and gene expression signatures

A. Cuarenta;
University of Michigan, Ann Arbor, MI

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

MIN29.08. Poverty, dimensions of childhood adversity, and neurodevelopment.

D. Weissman;
Instituto Venezolano De Investigaciones Cientifica, San antonio de los altos, Venezuela, Bolivarian Republic of

Minisymposium

MIN30: Interneuron Computation in Health and Disease — Nathalie Dehorter

Theme: Theme B – Neural Excitability, Synapses, and Glia

Location: SDCC Rm 6CF

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

Description: This minisymposium will review key mechanisms of interneuron function in maintaining the excitation-inhibition balance in both health and disease. Each speaker will explore the critical role of interneurons in brain disorders, including epilepsy and autism.

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

MIN30.01. Chair

N. Dehorter;
The University of Queensland, Brisbane, Australia

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

MIN30.02. Co Chair

E. M. Goldberg;
The Children's Hospital of Philadelphia, Philadelphia, PA

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

MIN30.03. Parvalbumin interneurons' role in sensory processing dysfunctions associated with neurodevelopmental disorders.

G. Di Cristo;
CHU Sainte-Justine Research Center, Université de Montréal, Montreal, QC, Canada

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

MIN30.04. Closed-loop control of inhibitory neuron theta phase locking in the healthy and epileptic hippocampus

Z. Christenson Wick;
Icahn School of Medicine at Mount Sinai, New York, NY

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

MIN30.05. Re-examining the fate of hippocampal interneurons in temporal lobe epilepsy

T. Marissal;
INMED, Marseille, France

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

MIN30.06. Dravet syndrome: Dynamic interneuron dysfunction in a severe neurodevelopmental disorder

E. M. Goldberg;
The Children's Hospital of Philadelphia, Philadelphia, PA

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

MIN30.07. GABAergic interneuron disparities in fragile X mice during early postnatal development

N. KOURDOUGLI;
UCLA, David Geffen School of Medicine, Los Angeles, CA

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

MIN30.08. Modulating Interneuron Function to Restore Developmental Trajectories in Autism

N. Dehorter;
The University of Queensland, Brisbane, Australia

Minisymposium

MIN31: Sensorimotor Integration of Artificial Somatosensory Feedback — Hamid Charkhkar

Theme: Theme F – Motor Systems

Location: SDCC Rm 29

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

Description: This session will explore how artificially elicited somatosensory inputs from emerging neural interfaces shape sensorimotor circuits and motor control. Although recent efforts have centered on characterizing elicited perceptions, a major gap remains in understanding how these signals modulate neural pathways and motor outputs. This minisymposium will highlight the circuit-level integration of these new inputs.

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

MIN31.01. Chair

H. Charkhkar;
Case Western Reserve University, Cleveland, OH

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

MIN31.02. Changes in reflex modulation, muscle coordination, and postural stability from spinal cord stimulation to provide somatosensory feedback

A. Dalrymple;
University of Utah, Salt Lake City, UT

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

MIN31.03. Modulation of grasp-related motor cortical dynamics by stimulation of somatosensory cortex

G. H. Blumenthal;
University of Pittsburgh, Pittsburgh, PA

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

MIN31.04. The contributions of natural and artificial touch to motor cortex

C. M. Greenspon;
University of Chicago, Chicago, IL

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

MIN31.05. Linking Sensation and Movement in Lower-Limb Amputation via Peripheral Nerve Stimulation

H. Charkhkar;
Case Western Reserve University, Cleveland, OH

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

MIN31.06. Neuroprosthesis Providing Artificial Feedback Enhances Sensorimotor Function in Patients with Diabetic Neuropathy

N. Secerovic;
Medical University of Vienna, Vienna, Austria

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

MIN31.07. Leveraging Population Dynamics to understand the impact of Artificial versus Natural Vestibular Feedback on Sensorimotor Integration

R. Wei;
Johns Hopkins University, Baltimore, MD

Minisymposium

MIN32: How Do They Do It?: Mechanisms Driving Microbial Regulation of Addictive Behaviors — Angela Carter

Theme: Theme H – Motivation and Emotion

Location: SDCC Rm 6B

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

Description: Large bodies of data have revealed strong associations between changes in the host microbiome and various neurological and behavioral disorders, including substance abuse. Several studies now also demonstrate causality between changes in microbiome composition and altered brain function. This session will focus on efforts to unravel the mechanisms behind these phenomena, from direct investigations of individual disease-promoting bacteria to systems-level approaches and evolutionary modeling.

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

MIN32.01. Chair

A. M. Carter;
University of Alabama, Birmingham, Birmingham, AL

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

MIN32.02. A molecular perspective of the role of the gut microbiome in addiction

S. Cuesta;
Rutgers, The State University of New Jersey, Piscataway, NJ

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

MIN32.03. Fusobacterium nucleatum upregulates dopaminergic signaling modulators to enhance responses to amphetamines.

A. M. Carter;
University of Alabama, Birmingham, Birmingham, AL

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

MIN32.04. Dueling roles for the microbiota in alcohol consumption and reward

S. L. Thompson;
University of Maryland, Baltimore, Baltimore, MD

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

MIN32.05. Host genotype affects microbiome composition and behavior

J. A. Bubier;
The Jackson Laboratory, Bar Harbor, ME

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

MIN32.06. Gut microbial metabolites at the nexus of epigenetic regulation in addiction

D. D. Kiraly;
Wake Forest School of Medicine, WINSTON SALEM, NC

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

MIN32.07. Competition-induced microbiome dysbiosis may promote addictions

O. Lewin-Epstein;
Massachusetts General Hospital and Harvard Medical School, Boston, MA

Minisymposium

MIN33: Cryo-Electron Tomography in Neurobiology — Shigeki Watanabe

Theme: Theme J – Techniques

Location: SDCC Rm 28

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

Description: Electron microscopy has provided key insights into neurobiology from synapse structure and function to organelle dynamics within the nervous system. With cryo-electron tomography, we are now entering a new realm of revealing the molecular innerworkings at subatomic resolution, bridging structural biology and cell biology. This session will highlight recent breakthroughs in technologies to visualize individual molecules, molecular complexes, and their architecture in the native environment.

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

MIN33.01. Chair

S. Watanabe;
Johns Hopkins University, Baltimore, MD

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

MIN33.02. Co Chair

J. Peukes;
CZ Imaging Institute, San Francisco, CA

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

MIN33.03. The molecular infrastructure of glutamatergic synapses in the mammalian forebrain

J. Peukes;
CZ Imaging Institute, San Francisco, CA

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

MIN33.04. Kiss-shrink-run" mechanisms for synaptic vesicle exocytosis and hyperfast recycling revealed by time-resolved cryo-electron tomography

C. Tao;
University of Science and Technology of China, Hefei, China

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

MIN33.05. Axon injury repair mechanism elucidated by integrative structural biology.

K. Cada;
NHLBI, Bethesda, MD.

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

MIN33.06. A molecular look at neuronal (non-)translation

A. Schwarz;
Max Planck Institute For Brain Research, Frankfurt Am Main, Germany

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

MIN33.07. Molecular organization of glutamate receptors at in situ synapses revealed by cryo-ET

C. J. Spangler;
Oregon Health and Science University, Portland, OR

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

MIN33.08. Advanced ultrastructural imaging of human brain tissue

Y.-W. Chang;
University of Pennsylvania, Philadelphia, PA

Minisymposium

MIN34: APOE Directed Therapeutics in Alzheimer's Diseases — Hussein Yassine

Theme: Theme C – Neural Aging and Degeneration

Location: SDCC Rm 29

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

Description: APOE4 is the strongest genetic risk factor for late-onset Alzheimer's disease, yet very few therapies have been directed at APOE4 to date. This session will present progress on ApoE genetics, lipids, and inflammatory pathways from drug targets to clinical trials.

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

MIN34.01. Chair

H. N. Yassine;
University of Southern California, Los Angeles, CA

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

MIN34.02. Co Chair

O. Chiba-Falek;
Duke University School of Medicine, Durham, NC

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

MIN34.03. Autophagy-lysosome defects modulate lipid accumulation and inflammation in APOE4 Alzheimer’s disease human astrocytes

J. TCW;
Boston University, Boston, MA

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

MIN34.04. APOE-targeted therapeutics for Alzheimer's Disease: Translating single-cell multi-omics discoveries into epigenome therapy

B. O'Donovan;
Duke University, Durham, NC

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

MIN34.05. Monitoring and treating Increased Complement Activation in ApoE4 Carriers

G. M. Cole;
UCLA Neurology/GLAVA GRECC, Los Angeles, CA

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

MIN34.06. APOE4 and Lipid Droplet Dynamics: Proteome Shifts, Inflammatory States, and a Role for PLIN2

I. Stephens;
University of Kentucky, Lexington, KY

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

MIN34.07. APOE4 dysregulates molecular signaling at the blood-brain barrier in mice.

K. Kisler;
University of Southern California, Los Angeles, CA

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

MIN34.08. The ATP Binding Cassette A1 (ABCA1) agonist CS6253 developed for APOE4-associated dementia shows favorable profiles in humans

J. Johansson;
Artery Therapeutics, San Ramon, CA

Minisymposium

MIN35: Representation of Time in the Brain — Sze Chai Kwok

Theme: Theme I – Cognition

Location: SDCC Rm 28

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

Description: Inspired by recent discoveries of neural populations that track time for specific moments (time cells) and elapsed durations (temporal context and periodic time cells), this minisymposium will bring together macro-, meso-, and micro-scale neural evidence for a formulation of how time — and the memory of it — is coded and processed in the human and nonhuman primate brain. Computational principles and relationships to other related phenomena such as memory replay and emotion will also be discussed.

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

MIN35.01. Chair

S. C. Kwok;
Duke Kunshan University, Kunshan, China

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

MIN35.02. Episodic timing and mental time navigation: duration past and ordinality

V. van Wassenhove;
CEA, INSERM, Univ. Paris-Saclay, Paris, France

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

MIN35.03. The neural and computational mechanisms of temporal position coding

G. Xue;
State Key Lab of Cognitive Neurosci. and Learning, China, China

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

MIN35.04. Memory for time and emotion: reciprocal interactions and neural mechanisms

R. C. Lapate;
University of California, Santa Barbara, Santa Barbara, CA

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

MIN35.05. Human time cells contribute to temporal order retrieval

J. J. Sakon;
UCLA, Los Angeles, CA

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

MIN35.06. Replay and trajectory of factorized temporal journey

S. C. Kwok;
Duke Kunshan University, Kunshan, China

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

MIN35.07. Memory in sequence: insights from human single neuron recordings

J. Zheng;
University of California Davis, Davis, CA

Minisymposium

MIN36: Experience-Driven Dynamics in Cortical Inhibition for Learning and Memory — Marlene Bartos

Theme: Theme I – Cognition

Location: SDCC Rm 6CF

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

Description: GABAergic inhibitory interneurons are a highly diverse class of cortical cells, which influence the activity of pyramidal neurons and thereby shape the representation of

afferent information in cortical networks. This minisymposium will discuss bridges between recent *in vivo* and *in vitro* studies to highlight new insights on experience-driven dynamics of hippocampal interneurons and their output synapses underlying the spatiotemporal emergence of memory traces during context learning for behavioral control.

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

MIN36.01. Chair

M. Bartos;
University of Freiburg, Freiburg, Germany

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

MIN36.02. Co Chair

J. R. Geiger;
Charite university medicine, Berlin, Germany

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

MIN36.03. Experience-dependent changes in dendritic and perisomatic inhibition during novel context learning in the dentate gyrus.

M. Bartos;
University of Freiburg, Freiburg, Germany

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

MIN36.04. Experience-dependent recruitment of hippocampal inhibitory engrams during Sharp-Wave Ripples.

S. Viana Da Silva;
DZNE, Berlin, Germany

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

MIN36.05. Navigating new experiences: The secret work of hippocampal VIP neurons in memory formation.

L. Topolnik;
Université Laval, Quebec, QC, Canada

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

MIN36.06. All-optical physiology reveals synaptic bases for learning and memory in behaving mammals.

L. Z. Fan;
MIT, CAMBRIDGE, MA

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

MIN36.07. Inhibitory circuit dynamics of the hippocampus in health and disease

A. Losonczy;
Columbia University, Westport, CT

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

MIN36.08. Pro-cognitive restoration of experience-dependent parvalbumin inhibitory neuron plasticity in neurodevelopmental disorders.

A. Sahay;
MGH and Harvard Medical School, Boston, MA

Minisymposium

MIN37: Oligodendrocyte Pathophysiology and Repair Mechanisms in Multiple Sclerosis, Alzheimer's Disease, and Parkinson's Disease — Brad Lang

Theme: Theme B – Neural Excitability, Synapses, and Glia

Location: SDCC Rm 6DE

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

Description: This session will highlight the pivotal role of oligodendrocytes in neurodegenerative disease pathophysiology, emphasizing their contributions beyond myelination. Understanding oligodendrocyte signaling in central nervous system repair and its role in diseases like Parkinson’s disease and Alzheimer’s disease is vital for developing novel therapies. Integrating advances in stem cell therapeutics and remyelination strategies, this minisymposium will showcase oligodendrocyte biology as a promising avenue for therapeutic innovation.

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

MIN37.01. Chair

B. Lang;
Convelo Therapeutics, Cleveland, OH

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

MIN37.02. Co Chair

S. A. O'Sullivan;
German Center for Neurodegenerative diseases (DZNE), Bonn, Germany

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

MIN37.03. Bridging CNS remyelination and immune regulation through EBI2/oxysterol signaling

A. Rutkowska;
Medical University of Gdansk, Gdansk, Poland

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

MIN37.04. Alpha-Synuclein and white matter adaptations in models of Parkinson's disease

S. A. O'Sullivan;
German Center for Neurodegenerative diseases (DZNE), Bonn, Germany

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

MIN37.05. Local impacts of myelin on axon degeneration in the CNS

S. R. Mayoral;
Brown University, Providence, RI

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

MIN37.06. The role of myelin pathophysiology in executive dysfunction of distinction between hot and cold in tauopathy rat models

N. Hu;
Trinity College Dublin, Dublin, Ireland

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

MIN37.07. CNS myelin formation without active neuronal signaling

M. E. Bechler;
State University of New York Upstate Medical University, Syracuse, NY

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

MIN37.08. Early-stage brain stem cell therapy for treating progressive multiple sclerosis

S. Pluchino;
University of Cambridge (UK), Cambridge, United Kingdom

Minisymposium

MIN38: Neuroimmune Interactions in the Periphery — Hongzhen Hu

Theme: Theme D – Neuroimmunity, Neurovasculature, and Neural Injury

Location: SDCC Rm 28

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

Description: Peripheral neuroimmunology transforms biology by uncovering key neuro-immune interactions across organs and diseases. This session will explore recent breakthroughs in the complex relationship between the peripheral nervous and immune systems, revealing how they

jointly optimize behavior, immunity, and physiology. These insights revolutionize our understanding of disease mechanisms and offer new perspectives on their potential treatments.

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

MIN38.01. Chair

H. Hu;
Icahn School of Medicine at Mount Sinai, Port Washington, NY

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

MIN38.02. Co Chair

B. S. Kim;
Icahn School of Medicine at Mount Sinai, New York, NY

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

MIN38.03. Activating Neuroimmune Reflexes in Humans

K. J. Tracey;
Feinstein Institutes Northwell Health, Manhasset, NY

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

MIN38.04. Vagal TRPV1+ Neurons Modulate Myeloid Cell Dynamics and Host Defense in the Lungs

I. M. Chiu;
Harvard University, Boston, MA

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

MIN38.05. Sensing Allergen: the Lung-Brain Neuroimmune Circuit

X. Sun;
University of California, San Diego, La Jolla, CA

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

MIN38.06. Peripheral Neuroimmune Interactions and Allergic Disorders

N. Gaudenzio;
Toulouse Institute for Infectious and Inflammatory Diseases (Infinity) / Inserm, Toulouse, France

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

MIN38.07. Regulation of Barrier Tissue Immunity by Peripheral Glia

F. Progatzky;
University of Oxford, Oxford, United Kingdom

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

MIN38.08. Metabolic Neuroimmune Training Drives Allergic Immunity

C. Sokol;
Harvard Medical School, Boston, MA

Minisymposium

MIN39: Cellular Structure of the Spinal Cord: From Atlases to Multimodal Cell-Type Annotation — Allan-Hermann Pool

Theme: Theme F – Motor Systems

Location: SDCC Rm 29

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

Description: The spinal cord is a critical somatosensory and motor center. How spinal cell types and their molecular and anatomic properties achieve their myriad functions remains intensely studied yet poorly understood. In this minisymposium, the speakers will highlight recent high-throughput efforts to characterize spinal cellular diversity and functionally, developmentally, and anatomically annotate, as well as therapeutically address spinal neural classes.

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

MIN39.01. Chair

A.-H. Pool;
University of Texas Southwestern Medical Center, Dallas, TX

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

MIN39.02. Co Chair

T. E. Bakken;
Allen Institute for Brain Science, Seattle, WA

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

MIN39.03. A spatial, transcriptomic, and epigenomic characterization of species-conserved dorsal horn neurons

M. J. Leone;
Carnegie Mellon University, Pittsburgh, PA

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

MIN39.04. Anatomic and functional annotation of spinal cord neural diversity in mouse

A.-H. Pool;
University of Texas Southwestern Medical Center, Dallas, TX

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

MIN39.05. The developmental origin of neuronal diversity in the spinal cord dorsal horn

R. B. Roome;
National Institutes of Health, Bethesda, MD

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

MIN39.06. Creation of high resolution, 3D anatomical reference atlases and automated registration pipelines for developing and adult mouse spinal cord

D. M. Ramirez;
Univ. of Texas Southwestern Medical Center, Dallas, TX

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

MIN39.07. Unraveling the role of transcriptomically defined dorsal horn cell types in mechanical allodynia and itch

M.-c. Noh;
University of Pittsburgh, Pittsburgh, PA

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

MIN39.08. Comparative multiomic and spatial organization of spinal cord cell types in mouse, macaque, and human

C. T. van Velthoven;
Allen Institute, Seattle, WA

Minisymposium

MIN40: Adenosine in the Brain: Detection, Function, and Translation — Haining Zhong

Theme: Theme G – Integrative Physiology and Behavior

Location: SDCC Rm 6CF

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

Description: Although adenosine was discovered in the brain a century ago, we just began to understand where, when, and how it functions, in part thanks to recent technological advances. It is increasingly appreciated that adenosine is a major neuromodulator regulating brain circuits for sleep, movement, and cognitive functions. This session will highlight recent advances in measuring adenosine and its signaling *in vitro* and *in vivo*, as well as how it regulates brain function under normal and disease states.

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

MIN40.01. Chair

H. Zhong;
Vollum Institute, OHSU, Portland, OR

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

MIN40.02. Co Chair

J.-F. Chen;
Eye Hospital,Wenzhou Medical University, Wenzhou, China

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

MIN40.03. Novel genetically encoded sensors for multiplex imaging of ATP and adenosine

Z. WU;
Institute of Genetics and Developmental Biology, Chinese Academy of Sciences, Beijing City, China

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

MIN40.04. Elucidating adenosine-dopamine microcircuits in the striatum

S. J. Cragg;
University of Oxford, Oxford, United Kingdom

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

MIN40.05. Microglia-mediated gating of neuronal activity via adenosine

A. Schaefer;
Max Planck Institute for Biology of Ageing/ Mount Sinai, New York, Cologne, Germany

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

MIN40.06. Source and function of adenosine during movement execution

T. Yahiro;
Oregon Health & Science University, Portland, OR

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

MIN40.07. 40Hz Light flickering promotes sleep via adenosine signaling

J.-F. Chen;
Eye Hospital,Wenzhou Medical University, Wenzhou, China

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

MIN40.08. Adenosine as hallmark of glutamatergic function and cognitive aging

L. V. Lopes;
Fundação GIMM, Lisbon, Portugal

Symposium

SYM01: Not Just Neurons: Pain Is Orchestrated in Partnership With Many Nonneuronal Cells — Ewan St. John Smith

Theme: Theme E – Sensory Systems

Location: SDCC Rm 6A

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

Description: Activation of sensory neurons is key to the transduction of noxious stimuli and perception of pain. However, understanding of pain has moved beyond a purely neurocentric view as growing research shows that diverse nonneuronal cells and their released mediators are fundamentally involved in causing and resolving pain. This session will highlight specific key roles that different cell types play in modulating peripheral neuronal excitability across a diverse set of chronic pain conditions.

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

SYM01.01. Chair

E. S. Smith;
University of Cambridge, Cambridge, United Kingdom

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

SYM01.02. Co Chair

C. L. Stucky;
Medical College of Wisconsin, Milwaukee, WI

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

SYM01.03. Cell-cell interactions driving and relieving joint pain

E. S. Smith;
University of Cambridge, Cambridge, United Kingdom

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

SYM01.04. Keratinocytes actively drive neuropathic pain

C. L. Stucky;
Medical College of Wisconsin Neuroscience, Milwaukee, WI

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

SYM01.05. Bone Pain in Multiple Myeloma: Insights into the pathogenesis

A.-M. Heegaard;
University of Copenhagen, Copenhagen, Denmark

Time: Saturday, November 15, 2025, 2:00 PM - 4:30 PM

SYM01.06. Dermal fibroblasts regulate pain and inflammation

M. D. Burton;
University of Texas At Dallas Neuroscience Program, Richardson, TX

Symposium

SYM02: GLP-1R Agonists and Research to Treat Overeating and Substance Use Disorders — Linda Rinaman

Theme: Theme H – Motivation and Emotion

Location: SDCC Rm 6A

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

Description: Glucagon-like peptide-1 receptor (GLP-1R) agonists have revolutionized the therapeutic landscape of diabetes and obesity, yet their therapeutic potential extends significantly further. This symposium will highlight the current understanding of how GLP-1R agonists are accessing receptors in the brain and summarize emerging evidence for how they might be utilized to treat dysfunctional consummatory behaviors (e.g., eating disorders and alcohol and substance use disorders).

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

SYM02.01. Chair

L. Rinaman;
Florida State University Program In Neuroscience, Tallahassee, FL

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

SYM02.02. CNS mechanism of action for GLP-1R ligands control of energy balance

M. R. Hayes;
University of Pennsylvania, Philadelphia, PA

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

SYM02.05. Emerging clinical and pre-clinical data on the impact of GLP-1/GIP on substance use disorders

E. oru;
Eli Lilly and Company, New York, NY

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

SYM02.04. Recent bench-to-bed translational findings on the role of the GLP-1 system in alcohol and substance use disorders

L. Leggio;
National Institutes of Health, Baltimore, IL

Time: Sunday, November 16, 2025, 9:30 AM - 12:00 PM

SYM02.03. Real world evidence on the association between GLP-1RAs and substance use disorders

S. Guo;
University of Florida, Gainesville, FL

Symposium

SYM03: Mitochondrial Dynamics and Energy Metabolism in Neurodevelopmental and Neuropsychiatric Disorders — Xinyu Zhao

Theme: Theme A – Development

Location: SDCC Rm 6A

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

Description: Mitochondria are dynamically remodeled through the balance of fusion and fission events and transported to synapses. Altered mitochondrial dynamics are increasingly linked to various brain disorders. This session will showcase recent breakthroughs in understanding the molecular mechanisms governing mitochondrial dynamics and bioenergetics in neurodevelopmental disorders, with the aim to foster collaboration and inspire new perspectives in mitochondrial biology and mental health disorders.

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

SYM03.01. Chair

X. Zhao;
University of Wisconsin-Madison, Madison, WI

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

SYM03.02. Regulation of neuronal development and plasticity by mitochondrial trafficking and calcium buffering

J. T. Kittler;
University College London, London, United Kingdom

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

SYM03.03. Extreme compartmentalization of mitochondrial structure and function between axons and dendrites of mammalian cortical neurons.

F. Polleux;
Columbia University, New York, NY

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

SYM03.04. The mitochondrial metabolic switch in neural development and plasticity

E. A. Jonas;
Yale Univ Sch Med, New Haven, CT

Time: Monday, November 17, 2025, 9:30 AM - 12:00 PM

SYM03.05. Mitochondria as influencers of variable penetrance for schizophrenia at the synapse, the blood-brain barrier, or both?

S. A. Anderson;
University of Pennsylvania, Philadelphia, PA

Symposium

SYM04: Cancelation of Predicted Action Consequences Across Species and Levels of Predictions — Konstantina Kilteni

Theme: Theme F – Motor Systems

Location: SDCC Rm 6A

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

Description: Distinguishing self from non-self is crucial for survival. Performance errors attributed to oneself can be corrected by using error signals to train internal predictive neural circuits. Effects caused by the external world need to be identified and learned in order to develop adequate adaptive strategies. This symposium will highlight predictive systems and their interactions, explore how to disentangle them, and examine the mechanisms of predictive signals across species and sensory modalities.

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

SYM04.01. Chair

K. Kilteni;
Karolinska Institute, Solna, Sweden

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

SYM04.02. Co Chair

C. Schwarz;
University of Tuebingen, Tuebingen, Germany

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

SYM04.03. Detecting errors and learning from mistakes

D. M. Schneider;
New York University, New York, NY

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

SYM04.04. Discerning different predictive signals modulating mouse ascending tactile signals

C. Schwarz;
Univ Tuebingen, Tuebingen, Germany

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

SYM04.05. How the Cerebellum Predicts and Adapts to Voluntary Self-Motion: Unveiling Neural Mechanisms for Perceptual Stability and Motor Precision

K. E. Cullen;
The Johns Hopkins University, Baltimore, MD

Time: Monday, November 17, 2025, 2:00 PM - 4:30 PM

SYM04.06. Predictive attenuation of self-generated touch in human somatosensory cortex and cerebellum

K. Kilteni;
Karolinska Institute, Solna, Sweden

Symposium

SYM05: Advances at the Interface of Computational Neuroscience and AI — Leslie Osborne

Theme: Theme J – Techniques

Location: SDCC Rm 6A

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

Description: Computational neuroscience has advanced the understanding of the nervous system by characterizing the neural code, evaluating the capacity of neural networks, reducing the complexity of the brain and behavioral dynamics, and parsing the complex processes of cognition. AI is poised to transform our understanding of brain and behavior still further. This session will demonstrate the transformative impact of machine learning in the analysis of neural, behavioral, and clinical data.

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

SYM05.01. Chair

L. C. Osborne;
National Institutes of Health, Rockville, MD

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

SYM05.02. Co Chair

B. Westover;
Harvard University, Boston, MA

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

SYM05.03. Computational Neuroscience in the Age of Artificial Intelligence

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

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

SYM05.04. Learning multimodal neural latent dynamics with AI

M. W. Mathis;
EPFL, Geneva, Switzerland

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

SYM05.05. AI for enhanced connectome-behavior mapping

A. Kuceyeski;
Weill Cornell Medicine, New York, NY

Time: Tuesday, November 18, 2025, 9:30 AM - 12:00 PM

SYM05.06. Automating Clinical Neurophysiology

B. B. Westover;
Harvard University, Boston, MA

Symposium

SYM06: The Neurophysiology of Naturalistic Behavior in Mammalian Brains — Nachum Ulanovsky

Theme: Theme G – Integrative Physiology and Behavior

Location: SDCC Rm 6A

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

Description: Over decades, we've advanced understanding of how mammalian brains process information in lab-based tasks. However, many studies restricted natural movements, reducing ecological validity and generalizability. This symposium presents research on natural behaviors in freely moving mice, bats, marmosets, and humans using advanced neurotechnologies. By

measuring neural activity alongside sensory, motor, spatial, and cognitive variables, these studies reveal novel brain mechanisms across species.

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

SYM06.01. Chair

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

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

SYM06.02. Neuroscience going wild: Neural codes for space in social groups of bats and in bats navigating outdoors on a remote oceanic island

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

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

SYM06.03. Neural coding and dynamics of active sensing in freely moving mice

C. M. Niell;
University of Oregon, Eugene, OR

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

SYM06.04. The visual nature of Hippocampal representations in the freely moving marmoset

D. B. Piza;
Western University, London, ON, Canada

Time: Tuesday, November 18, 2025, 2:00 PM - 4:30 PM

SYM06.05. Neural dynamics of real-world memory and navigation: Medial temporal lobe recordings in freely moving humans

W. Jiang;
Duke University, Durham, NC

Symposium

SYM07: Glia and the Matrix: New Frontiers in Synapse and Circuit Function — Lindsay De Biase

Theme: Theme B – Neural Excitability, Synapses, and Glia

Location: SDCC Rm 6B

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

Description: The space between central nervous system (CNS) cells is filled with a complex protein-sugar meshwork known as the extracellular matrix (ECM). Despite evidence that the ECM plays essential roles in regulating synaptic function and neuronal excitability, with key consequences for behavior, the brain ECM remains vastly understudied. This session will highlight the dynamic nature of the brain ECM and delve into critical roles that CNS glial cells play in ECM remodeling to shape synaptic and circuit function.

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

SYM07.01. Chair

L. M. De Biase;
David Geffen School of Medicine At UCLA, Los Angeles, CA

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

SYM07.02. Co Chair

A. Molofsky;
University of California- San Francisco, San Francisco, CA

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

SYM07.03. Remodeling of the extracellular matrix shapes synaptic plasticity

A. V. Molofsky;
University of California, San Francisco, San Francisco, CA

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

SYM07.04. Microglia-ECM-synapse interactions and cognitive decline during aging

L. M. De Biase;
David Geffen School of Medicine At UCLA, Los Angeles, CA

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

SYM07.05. Astrocyte-secreted molecules: orchestrating synaptic circuitry via ECM-dependent mechanisms

D. Irala;
St. Jude Children's Research Hospital, Memphis, TN

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

SYM07.06. Specialized ECM structures - Perineuronal nets - aid astrocytic ion and neurotransmitter homeostasis at tripartite synapses

H. Sontheimer;
University of Virginia, Charlottesville, VA

Symposium

SYM08: Neurovascular Landscapes: Technologies and Breakthrough Discoveries — Oliver Bracko

Theme: Theme D – Neuroimmunity, Neurovasculature, and Neural Injury

Location: SDCC Rm 6DE

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

Description: Advances in *in vivo* imaging and cerebrovascular disease are tightly connected. This symposium will highlight new advancements in *in vivo* imaging technologies and their impact on cerebrovascular disease. Specifically, the speakers will focus on new developments in Ultrafast fluorescence, awake multiphoton, 2P- widefield localization-OCT, and intrinsic optical imaging of the neurovascular unit and how they contribute to understanding vascular contributions to cognitive impairment and dementia (VCID).

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

SYM08.01. Chair

O. Bracko;
University of Miami, Miami, FL

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

SYM08.02. Live imaging of visual cortex during neurovascular coupling in awake mice

C. Gu;
Harvard Medical School; HHMI, Boston, MA

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

SYM08.03. Vascular-immune cell interactions in neurodegenerative disease

O. Bracko;
University of Miami, Miami, FL

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

SYM08.04. High-speed imaging of neurovascular dynamics.

J. Zhu;
University of California Berkeley, Berkeley, CA

Time: Wednesday, November 19, 2025, 9:30 AM - 12:00 PM

SYM08.05. From Surface to Depth: Imaging the pial arterial connectome and microvasculature in health and disease

M. El Amki;
University of Zurich, Zurich, Switzerland

Symposium

SYM09: High-Order Thalamic Nuclei in Behavior — Randy Bruno

Theme: Theme E – Sensory Systems

Location: SDCC Rm 6A

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

Description: Decades of thalamus research have focused intensely on the function of first-order sensory nuclei that transmit sensory information to the cortex. However, sensory cortical areas are reciprocally connected with high-order thalamic nuclei, the functions of which have been elusive. This session will present work across multiple modalities — audition, somatosensation, and vision — as well as frontal decision-making of the mouse, suggesting new ideas regarding roles in cognitive state and learning.

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

SYM09.01. Chair

R. M. Bruno;
University of Oxford, Oxford, United Kingdom

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

SYM09.02. Plasticity of auditory thalamus during appetitive and aversive associative learning

J. Grundemann;
DZNE, Bonn, Germany

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

SYM09.03. Higher-order thalamus conveys global state information to the cortex.

J. A. Cardin;
Yale University, New Haven, CT

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

SYM09.04. The impact of learning on high-order somatosensory and visual thalamus

R. M. Bruno;
University of Oxford, Oxford, United Kingdom

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

SYM09.05. Enhancing mediodorsal thalamus function rescues state instability in a mouse model with schizophrenia-associated mutation

T. Zhou;
MIT, Cambridge, MA

Symposium

SYM10: Computational Approaches to Understand Emergence of Human Brain Dynamics Across Spatial and Temporal Scales — Satu Palva

Theme: Theme J – Techniques

Location: SDCC Rm 6B

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

Description: Complex emergent dynamics across spatial and temporal scales sustain cognition, behavior, and their variability. Yet, mechanisms giving rise to and constraining these dynamics at the individual level are poorly understood. This symposium will highlight recent advances in computational frameworks and new techniques that enable a better understanding of the emergence of multi-scale brain dynamics including graph signal processing and network decomposition methods, brain criticality, and digital brain twins.

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

SYM10.01. Chair

S. Palva;
University of Helsinki, Helsinki, Finland

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

SYM10.02. Co Chair

D. Van De Ville;
Ecole polytechnique fédérale de Lausanne, Geneve, Switzerland

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

SYM10.03. Probing how the structural connectome shapes brain activity

D. Van De Ville;
Ecole polytechnique fédérale de Lausanne, Geneve, Switzerland

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

SYM10.04. Brain Criticality Framework - explaining emergence and variability of oscillatory brain dynamics and connectivity.

S. Palva;
University of Helsinki, Helsinki, Finland

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

SYM10.05. Understanding manifolds and emergent brain networks using Virtual Brain Twins

V. Jirsa;
Institut De Neurosciences des Systèmes UMR1106, Marseille, France

Time: Wednesday, November 19, 2025, 2:00 PM - 4:30 PM

SYM10.06. Uncovering the Mechanism and Meaning of EEG/MEG Measured Brain Dynamics with the Human Neocortical Neurosolver Software

S. R. Jones;
Brown University, Providence, RI