



SfN PRECONFERENCE SESSIONS

📅 Preregistration Required \$ Course Fee 📖 Professional Development 🗺 Networking ✨ Public Outreach

SfN Pre-Conference Session Fees

SfN pre-conference sessions are sponsored by the Society and occur prior to the official start of the annual meeting. Paid registration is required for Short Courses and the Neurobiology of Disease Workshop. To attend, add the appropriate course to your annual meeting registration.

Short Courses #1 and #2

(Includes electronic syllabus and lunch)

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

Short Course #3

(Includes electronic syllabus)

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

Neurobiology of Disease Workshop

(Includes electronic syllabus, breakfast, and lunch)

Student attendee	\$85
Postdoctoral attendee	\$150
Faculty attendee.....	\$300

*Registration is not required for the Meet-the-Expert Series

FRIDAY, NOV. 10

Neurobiology Of Disease Workshop

Gene Therapy to Address Unmet Needs in Neurology 📅 \$ 📖

8 a.m.–5 p.m.

Walter E. Washington Convention Center:
Room: 146C

Organizers: Xandra Breakefield, PhD

Florian Eichler, MD

Contact: training@sfn.org

Support contributed by: The National Institute of Neurological Disorders and Stroke, NIH; the National Institute on Alcohol Abuse and Alcoholism, NIH; and the National Center for Complementary and Integrative Health, NIH

This workshop embraces the breadth of “gene therapy” including viral vectors, oligonucleotides, and cell therapies used in promising preclinical studies and clinical trials for a variety of neurologic disorders long thought to be incurable. These new methods involve DNA engineering, gene replacement using virus vectors and the patient’s own genetically modified cells, oligonucleotides that can “revive” beneficial gene functions or suppress toxic ones, and viruses and cells armed to tackle brain tumors.

Short Course #1

Intersections Between the Brain and Immune System in Health and Disease 📅 \$ 📖

8:30 a.m.–6 p.m.

Walter E. Washington Convention Center:
Ballroom A

Organizers: Carla Shatz, PhD;

Beth A. Stevens, PhD

Contact: training@sfn.org

Support contributed by: Lilly USA

The goal of this short course is to bring together researchers to discuss the mediators, mechanisms, and functional implications of neural-immune crosstalk in health and disease. Faculty will highlight new tools and approaches

with which to study and model neural-immune signaling in different contexts, including human disease. Topics include interactions between the brain and the periphery, reactive gliosis and glymphatic-lymphatic connections, microglia function and dysfunction, the microbiome and gut-brain axis, and immune mechanisms of synapse loss in development and disease.

Short Course #2

Neuroinformatics in the Age of Big Data: Working With the Right Data and Tools 📅 \$ 📖

8 a.m.–6 p.m.

Walter E. Washington Convention Center:
Ballroom B

Organizers: Katja Brose, PhD;

A. Jane Roskams, PhD

Contact: training@sfn.org

We are at a unique time in history where global large-scale projects are generating unprecedented amount of data. Although much of this data is “open” and available — with analysis tools developed by a new generation of neuroinformaticians — some is still just beyond the reach of many neuroscientists. Here we bring together leaders in the neuroinformatics field to guide attendees (armed with a laptop) through a hands-on course highlighting some of the most broadly accessible open datasets and to guide their independent scientific voyage of discovery.

Short Course #3

Neuroethics and Public Engagement: Why, How, and Best Practices 📅 \$ 📖

1–5:30 p.m.

Room: 206

Moderators: Laura Cabrera, PhD; Emily

Cloyd; Martha J. Farah, PhD

Contact: training@sfn.org

Support contributed by: The National Institute of Neurological Disorders and Stroke, NIH

Public education and engagement are crucial in the process of assessing and applying societal



values to the risks and benefits of neuroscience and the ethical dimensions they involve. Through lectures, case study discussion, and hands-on practice, attendees will explore what neuroethics is and why public engagement is a key component of the field, as well as develop ideas for how to engage with the public regarding their own research.

SATURDAY, NOV. 11

Meet-the-Expert Series:

Session 1, 8–9:15 a.m.

Renaissance Washington, DC Downtown Hotel
Contact: profdev@sfn.org

Experts will describe their own research techniques and accomplishments in a personal context that offers participants a behind-the-scenes look at factors influencing each expert's work. The sessions will offer students and postdoctoral researchers an opportunity to engage with the expert in an informal dialogue over continental breakfast. No registration is required, but seating is limited. Attendees are encouraged to arrive early for their priority session.

Examining the Development of the Functional Connectome With Non-Invasive Neuroimaging

Room: 2

Damien A. Fair, PhD

Theme A: Development

Damien Fair's laboratory focuses on mechanisms and principles that underlie the developing brain. The majority of his work uses functional MRI techniques, along with computational tools, such as graph theory, to assess typical and atypical populations. His work cuts across both human and animal models using these non-invasive tools as a bridge between species. A second focus

involves testing the feasibility of using these techniques in translational studies of development. Dr. Fair is exploring ways to better characterize individuals to help guide future diagnostic, therapeutic, and genetic studies. He will discuss his research and the moments and people that have influenced his career trajectory.

Shifting the Bench to Bedside Paradigm Towards Translational Validity

Room: 4

Roberta Brinton, PhD

Theme C: Neurodegenerative Disorders and Injury

Support contributed by: MilliporeSigma

In the 21st century, there is not a single cure for a single neurodegenerative disease. The translational success of basic science discovery to clinical efficacy has been highly variable, with failure as the most consistent outcome. The failure rate of Phase 2 to Phase 3 clinical trials for nervous system diseases ranges from 85–100 percent depending on the neurological disease, mechanistic target, and therapeutic goal (disease modifying to recovery of function). Neurodegenerative diseases are complex systems biology challenges that typically have multiple stages of progression from early prodromal to end-stage incapacity. The time course for neurodegeneration can progress rapidly, as in ALS, or can span decades, as in Alzheimer's. Dr. Brinton will discuss her translational science experiences that include systems biology discovery science to translational IND enabling research to clinical trials. She will share lessons learned and strategies to conduct discovery science with greater translational validity.

Closing the Loop: From Motor Neuroscience to Rehabilitation

Room: 9

Amy J. Bastian, PhD

Theme E: Motor Systems

Amy Bastian's group focuses on understanding how humans learn and control movement. Her laboratory works to identify how new movement patterns are normally acquired, retained, and generalized, and how distinct brain lesions alter these processes. The ultimate goal of her work is to use this information to improve rehabilitation for individuals with neurological damage. In this session, she will discuss how she built a research program aimed at defining a mechanistic approach to neurorehabilitation and some of the advantages and challenges of studying human behavior.

Insights Into Hippocampal Circuitry and Function From Studies of Synaptic Plasticity

Room: 8

Serena M. Dudek, PhD

Theme F: Integrative Physiology and Behavior
Support contributed by: MilliporeSigma

Serena Dudek is perhaps best known for her work establishing long-term depression (LTD) as a legitimate form of synaptic plasticity in the hippocampus. These studies were initially aimed at determining how excitatory synapses are systematically weakened and eventually lost in normal development and in response to sensory manipulation during critical periods of postnatal development. Although Dr. Dudek continued to study synapse pruning and activity-dependent gene transcription, she will discuss how her interest in critical period plasticity has led her to an unexpected place: the long-neglected and enigmatic hippocampal area CA2.

SfN PRECONFERENCE SESSIONS (CONT.)

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Meet-the-Expert Series:

Session 2, 9:30–10:45 a.m.

Renaissance Washington, DC Downtown Hotel

Contact: profdev@sfn.org

Meet-the-Clinician-Expert: Microdissecting the Function of Human Speech Cortex

Room: 5

Edward Chang, MD

Dr. Chang will discuss the unique role of neurologists, neurosurgeons, and neuroscientists in human intracranial research. He will give highlights from his own work on speech mechanisms but also discuss ethics and training related to the field in general.

Found in Transduction: Neurons and Ion Channels That Sense Touch

Room: 2

Miriam B. Goodman, PhD

Theme D: Sensory Systems

Support contributed by: MilliporeSigma

Touch is the earliest sense to develop and the last to fade and helps to define our sense of the world. Dr. Goodman investigates the biophysics of neuron-skin complexes and ion channels that give rise to tactile perceptions. She works with engineers and physicists to develop new experimental tools, and her research integrates studies of molecules, cells, and animals. Dr. Goodman will discuss her passion for sensory physiology and the importance and joy of being a maker in the neuroscience laboratory.

Serotonin Matters: Novel Strategies for NeuroTherapeutics in Addictive Disorders

Room 4

Kathryn A. Cunningham, PhD

Theme G: Motivation and Emotion

Support contributed by: ACS Chemical Neuroscience

Kathryn Cunningham is a pharmacologist and neuroscientist with a focus on advancing the biological understanding of addictive disorders and developing effective and safe



therapeutics to maximize human function. Her cross-disciplinary team of chemists, cell biologists and clinical scientists has identified that vulnerability to addiction and relapse are mechanistically linked to an imbalance of serotonin signaling through localized to corticostriatal circuitry.

Dr. Cunningham will discuss the evolution of this research from animals to humans and the ongoing drug discovery initiatives to restore homeostasis and mitigate deleterious behaviors that promote relapse.

Chasing Neuronal Images in the Human Cerebral Cortex

Room: 8

Rafael Malach, PhD

Theme H: Cognition

Formal scientific publications typically report the final conclusions of what, in reality, is a process full of dead-ends, depressing no-goes, and a mix of thrilling and painful outcomes often contradicting beloved theories. Dr. Malach will describe examples from such behind-the-scenes drama that took place while his group chased after the

neuronal events underlying the emergence of a visual object in the mind of a human observer. It is his hope that such examples may be helpful to young scientists.

Life Balance in Academic Medicine: Confessions of a Physician-Scientist

Room: 9

Emery N. Brown, MD, PhD

Theme I: Techniques

Emery Brown is an anesthesiologist-statistician who combines the clinical practice of anesthesiology with research on the neuroscience mechanisms of general anesthesia and on the development of signal processing algorithms to analyze neuroscience data. In this session, Dr. Brown will discuss his career trajectory as a physician-scientist; balancing work and family; his use of clinical practice to stimulate research and vice versa; and how in today's big data era, scientists and clinicians should train in data analysis and statistical reasoning.