



### *Sleep, Neuroenergetics, and Neural Plasticity* **CME**

*Chaired by:* Giulio Tononi, MD

*Co-Chaired by:* Pierre Magistretti, MD, PhD

This symposium will review recent progress made on the emerging role of sleep in modulating synaptic plasticity and hence, learning and memory. The question of the metabolic cost of synaptic plasticity and the role of neuron-glia metabolic coupling in contributing to the expression of synaptic plasticity will be discussed. Data relating to gene expression patterns will complement physiological and functional imaging data obtained in animals and humans.

### **Theme F: Cognition and Behavior**

#### *Sources, Signals, and Synchrony: New Perspectives on the Neural Mechanisms of Attention* **CME**

*Chaired by:* Tirin Moore, PhD

*Co-Chaired by:* Amy F.T. Arnsten, PhD

There has been much progress in understanding the neural basis of attention in recent years. This progress has moved beyond just evidence of correlates of attention, and has begun to identify the neural circuits and neural computations necessary and sufficient to drive the selective filtering of sensory inputs. The symposium will highlight the more significant recent advances, including a consideration of the clinical implications of these findings.

#### *New Views of Long-Term Memory*

##### *Storage: Probing Paradigms* **CME**

*Chaired by:* Yadin Dudai, PhD

Although persistence is a defining attribute of memory, only little is known about how long-term memory persists in the brain. Recent data raise the possibility that textbook accounts of the cellular mechanisms of long-term memory storage deserve updating. Furthermore, these findings suggest new possibilities to modulate long-term memory, which are of potential clinical importance. This symposium will present new findings that relate to the mechanisms of long-term memory storage and reorganization over time. The theoretical and practical implications of these findings will be discussed.

## PHYSICIANS: IMPROVE COMPETENCIES WHILE EARNING CME CREDIT

The Society for Neuroscience annual meeting is a forum for the education of physicians in the field of neuroscience. By attending lectures, symposia, and mini-symposia, the physician will receive both a broad overview of the field and information about the most recent, detailed research in the topic of the session. The abstract of each plenary or specific session contains brief descriptions of the material to be presented. By attending any of the activities, the physician will better understand the basic science that underlies his or her clinical practice.

### Statement of Need

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

### Global Learning Objective

Given a patient with a neurological or psychiatric condition, physicians will integrate the most up-to-date information and

research on the mechanism, treatment, and diagnosis of conditions related to neurological and psychiatric disorders into their diagnostic and therapeutic modalities of practice in order to determine the best course of action in treating the patient.

### Accreditation

The Society for Neuroscience is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

### CME Registration

CME registration must be completed before or during the annual meeting. Those who do not register at these times will not receive the necessary documentation should they request it after the meeting. CME registrants will receive, via e-mail two weeks before the meeting, the CME Supplemental Program, which contains important information regarding the CME Program, including disclosure information and instructions for obtaining CME credits.

 [WWW.SFN.ORG/CME](http://WWW.SFN.ORG/CME)

#### *Habenula: Crossroad Between the Basal Ganglia and the Limbic System* **CME**

*Chaired by:* Okihide Hikosaka, MD, PhD

There has been a recent surge of interest in the habenula, a pair of nuclei located above the caudal thalamus, which receives inputs from both the limbic system and the basal ganglia. Studies suggest that the habenula plays a pivotal role in emotive decision-making by influencing the activity of dopamine and serotonin neurons. Dysfunctions of the habenula have also been implicated in psychiatric disorders. Symposium participants will discuss recent advances in habenular research.

### **Theme G: Novel Methods and Technology Development**

#### *Advanced Neurotechnologies for Chronic Neural Interfaces: New Horizons and Clinical Opportunities* **CME**

*Chaired by:* Daryl R. Kipke, PhD

*Co-Chaired by:* William Shain, PhD

Recent scientific, clinical, and technological advances in chronic neural interfaces are enabling previously unobtainable access to neural signals, leading to new insights into brain function and repair. Neuroscientists, engineers, and clinicians will discuss their findings and emerging ideas on the study of large populations of signals and new insights to CNS function, the use of these signals as control elements for brain-computer interfaces, and the translation of research developments to clinical application in functional neurosurgery and neural stimulation.