

Keystone Symposia in Taos

Windows on the Brain: Formation and Function of Synapses and Circuits and their Disruption in Disease

Sagebrush Inn & Suites | Taos, New Mexico, USA | January 21–25, 2019

Scientific Organizers:

Kristin Scott, University of California, Berkeley, USA

Paola Arlotta, Harvard University, USA

Rui M. Costa, Columbia University, USA

Yimin Zou, University of California, San Diego, USA

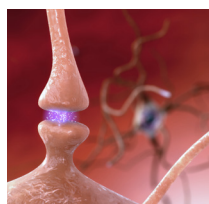
A fundamental goal of neuroscience is to understand the molecular, cellular and activity-based mechanisms that control the formation and function of neural circuits and determine how these mechanisms become compromised in neurodevelopmental, psychiatric and neurodegenerative disorders. Over the past two decades, molecular neuroscientists have identified key molecules and mechanisms that underlie synapse development, activity and stability. Meanwhile, the study of neuronal circuits has been revolutionized by new methods to visualize and map circuits in living animals, as well as the development of approaches to control neuronal activity. Finally, disease researchers have identified genes associated with neurodevelopmental and psychiatric disorders and neurodegenerative diseases. Animal models of these diseases are proving useful to understand how dysfunction of affected genes and proteins contributes to disease pathology. Although these fields are working on the same process, no small highly interactive “Keystone Symposia-style” meetings bring these three groups together in the same room. This symposium will bring together leaders working on synapse development and function, circuit structure and function, and the study of brain disease, believing with confidence that mutually beneficial insights will emerge from discussing each other’s work.

Plenary Session Topics:

- Patterning and Wiring of the Nervous System
- Synapse Development and Function
- Activity-Dependent Synapse Formation and Plasticity
- Connectomics
- Neural Circuits for Sensory Processing
- Plasticity in Neural Circuits
- Therapeutics for Nervous System Disease
- Modeling Disorders of the Nervous System

Scholarship/Discounted Abstract Deadline: Oct 3, 2018; Abstract Deadline: Oct 25, 2018; Discounted Registration Deadline: Nov 28, 2018

Visit www.keystonesymposia.org/19A6 for more details.



KEYSTONE SYMPOSIA™
on Molecular and Cellular Biology
Accelerating Life Science Discovery
a 501(c)(3) nonprofit educational organization

KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

Windows on the Brain: Formation and Function of Synapses and Circuits and their Disruption in Disease (A6)

January 21-25, 2019 • Sagebrush Inn & Suites • Taos, New Mexico, USA

Scientific Organizers: Kristin Scott, Paola Arlotta, Rui M. Costa and Yimin Zou

Sponsored by Takeda Pharmaceutical Company Limited

Abstract & Scholarship Deadline: October 3, 2018 / Abstract Deadline: October 25, 2018 / Discounted Registration Deadline: November 28, 2018

MONDAY, JANUARY 21

Arrival and Registration

TUESDAY, JANUARY 22

Welcome and Keynote Address

Speaker to be Announced

Patterning and Wiring of the Nervous System

Paola Arlotta, Harvard University, USA
Programming, Reprogramming and Modeling of the Mammalian Cerebral Cortex

Nenad Sestan, Yale School of Medicine, USA
Cell Fate Determination in the Cerebral Cortex

Franck Polleux, Columbia University, USA
Cellular and Molecular Mechanisms Underlying Synaptic Specificity and Circuit Function

Yimin Zou, University of California, San Diego, USA
Polarity Proteins in Axon and Synapse Development

Short Talk(s) Chosen from Abstracts

Synapse Development and Function

Nicola J. Allen, The Salk Institute for Biological Studies, USA
The Role of Astrocytes in Synapse Formation and Function

Daniel Alfonso Colón-Ramos, Yale School of Medicine, USA
Synapse Development in the Nematode Brain

Nils Brose, Max Planck Institute of Experimental Medicine, Germany
Molecular Mechanisms of Synaptogenesis

Tony Koleske, Yale University, USA
Cytoskeletal Control of Synapse and Dendrite Maintenance

Short Talk Chosen from Abstracts

Poster Session 1

WEDNESDAY, JANUARY 23

Activity-Dependent Synapse Formation and Plasticity

Anne E. West, Duke University Medical Center, USA
Chromatin Regulation of Synapse Maturation and Plasticity

Graeme W. Davis, University of California, San Francisco, USA
Homeostatic Mechanisms that Regulate Activity

Shernaz X. Bamji, University of British Columbia, Canada
Regulation of Synapse Plasticity by Palmitoylating Enzymes

Speaker to be Announced

Short Talk(s) Chosen from Abstracts

Connectomics

H. Sebastian Seung, Princeton University, USA
Extracting Brain Structure from Light and Electron Microscopic Images

Anthony Zador, Cold Spring Harbor Laboratory, USA
Sequencing the Connectome

Albert Cardona, HHMI Janelia Research Campus, USA
Mapping the Complete Synaptic Connectome of a Whole Insect Nervous System

Short Talk Chosen from Abstracts

Poster Session 2

THURSDAY, JANUARY 24

Neural Circuits for Sensory Processing

Sandeep Robert Datta, Harvard Medical School, USA
New Circuits for Olfaction

M. Eugenia Chiappe, Champalimaud Neuroscience Programme, Portugal
Visually-Guided Locomotion

Kristin Scott, University of California, Berkeley, USA
Gustatory Processing in the Fly Brain

Short Talk(s) Chosen from Abstracts

Plasticity in Neural Circuits

Rui M. Costa, Columbia University, USA
Mechanisms Underlying the Generation and Learning of Novel Actions

Ilana Witten, Princeton University, USA
Cortico-striatal Circuits Involved in Learning and Working Memory

Yang Dan, University of California, Berkeley, USA
Neural Circuits Controlling Sleep

Short Talk Chosen from Abstracts

Poster Session 3

FRIDAY, JANUARY 25

Therapeutics for Nervous System Disease

Kim Thompson, Circuit Therapeutics, USA
A Circuit-Based Approach to CNS Drug Discovery: Integrating Optogenetics and Single-Cell Genomics

Speaker to be Announced

Christopher E. Henderson, Biogen Inc., USA
Understanding and Treating ALS

Short Talk(s) Chosen from Abstracts

Modeling Disorders of the Nervous System

Alex Pollen, University of California, San Francisco, USA
Human Induced Pluripotent Stem Cells for Modelling Neurodevelopmental Disorders

Anirvan Ghosh, Biogen, USA
A Cortico-Habenular Circuit Involved in Social Reward

A. Kimberley McAllister, University of California, Davis, USA
Immune Molecules in the Brain during Development and Disease

Meeting Wrap-Up: Outcomes and Future Directions (Organizers)

SATURDAY, JANUARY 26

Departure