

KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

State of the Brain: Genetic Dissection of Brain Circuits and Behavior in Health and Disease (A2)

January 14-18, 2018 • Keystone Resort • Keystone, Colorado, USA

Scientific Organizers: Sean Hill, Hongkui Zeng, Z. Josh Huang, and György Buzsáki

Supported by the Directors' Fund

Abstract & Scholarship Deadline: / Abstract Deadline: / Discounted Registration Deadline:

SUNDAY, JANUARY 14

Arrival and Registration

MONDAY, JANUARY 15

Welcome and Keynote Address

May-Britt Moser[†], Norwegian University of Science and Technology, Norway

Talk Title to be Announced

Tools and Techniques for Genetic Dissection

Anthony Zador[†], Cold Spring Harbor Laboratory, USA
Genetic Dissection of Brain Connectivity

Edward S. Boyden[†], Massachusetts Institute of Technology, USA
Synthetic Neurobiology Approaches to Dissecting the Brain

Qingming Luo[†], Huazhong University of Science and Technology, China

Brain-Wide Genetically Defined Networks

Short Talk(s) Chosen from Abstracts

Towards a Census of Cell Types

Hongkui Zeng, Allen Institute for Brain Science, USA
Genetic Approaches to Brain Circuit Mapping and Cell Type Characterization

Sten Linnarsson[†], Karolinska Institutet, Sweden
Simultaneous Characterization of Electrical, Morphological and Molecular Properties of Single Cells

Z. Josh Huang, Cold Spring Harbor Laboratory, USA
Transcription Architecture of GABAergic Interneuron Types

Short Talk Chosen from Abstracts

Poster Session 1

TUESDAY, JANUARY 16

Genetic Dissection of Microcircuitry

Botond Roska[†], Friedrich Miescher Institute, Switzerland
Genetic Dissection of the Retina

Liqun Luo[†], Stanford University, USA
Genetic Assembly of Brain Circuitry

Andreas Tolias, Baylor College of Medicine, USA
The Fabric of Neocortical Microcircuits

Short Talk(s) Chosen from Abstracts

Genetic Dissection of Meso and Macrocircuitry

Rachel Wilson[†], Harvard Medical School, USA
Genetic Dissection of Drosophila Sensory Circuitry

Ann-Shyn Chiang[†], National Tsing Hua University, Taiwan
Genetic Dissection of the Whole Drosophila Brain

Attila Losonczy[†], Columbia University, USA
2-Photon Genetic Manipulation of the Rodent Hippocampus

Suzanaerculano-Houzel, Vanderbilt University, USA
It Takes Three Variables to Build a Cortex (and the Human Cortex is Not Special): Lessons from Comparative Neuroanatomy

Poster Session 2

WEDNESDAY, JANUARY 17

Data, Modeling, Informatics

Kenneth Harris[†], University College London, UK
Data-Driven Analytics of Genetically-Defined Neuronal Cell Types

Sean Hill, École Polytechnique Fédérale de Lausanne, Switzerland
Digital Reconstructions of Brain Circuitry: From Gene Expression to Emergent Network Activity

Surya Ganguli[†], Stanford University, USA
Talk Title to be Announced

György Buzsáki, New York University, Langone Medical Center, USA
Dynamics of Diversity: Skewed Distributions of Firing Rates, Spike Transmission and Population Cooperation

Short Talk(s) Chosen from Abstracts

Genetic Dissection of Behavior

Silvia Arber[†], Biozentrum, University of Basel & Friedrich Miescher Institute, Switzerland

Genetic Dissection of Motor Behavior

Yang Dan[†], University of California, Berkeley, USA
Genetic Dissection of Sleep

Karel Svoboda[†], Janelia Farm Research Campus & Cold Spring Harbor Laboratory, USA

The Circuitry of Tactile Decision Making

Mu-ming Poo[†], Institute of Neuroscience, CAS, China
Genetic Dissection of Plasticity

Short Talk Chosen from Abstracts

Poster Session 3

THURSDAY, JANUARY 18

Genetic Dissection of Brain Disorders and Diseases

Kay M. Tye[†], Massachusetts Institute of Technology, USA
Genetic Dissection of Social Behavioral Disorders

Steven Petrou[†], University of Melbourne, Australia
Genetic Dissection of Epilepsy

Lorna W. Role[†], Columbia University, USA
Genetic Dissection of Schizophrenia

Hideyuki Okano[†], Keio University School of Medicine, Japan
Mesocircuitry of the Marmoset Brain

Short Talk(s) Chosen from Abstracts

From Genetic Dissection to the Clinic

Michael Kaplitt[†], Circuit Therapeutics / Weill Cornell Medical College, USA
Genetic Approaches to Clinical Treatments

Peter Francis[†], Retrosense Therapeutics, USA
Using Optogenetics to Restore Vision

Morgan H. Sheng[†], Genentech, Inc., USA
From Genes to Treatments for Brain Disorders

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

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FRIDAY, JANUARY 19

Departure