

KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

Neural Environment in Disease: Glial Responses and Neuroinflammation (Z1)

Scientific Organizers: Richard Daneman, Dorothy Schafer, Michael V. Sofroniew and Vanda A. Lennon

Sponsored by BioLegend, Inc.

Neurodegenerative Diseases: New Insights and Therapeutic Opportunities (Z2)

Scientific Organizers: Valina L. Dawson, Joseph W. Lewcock and Fred H. Gage

June 16-20, 2019 • Keystone Resort • Keystone, Colorado, USA

Sponsored by BioLegend, Inc., Biogen, BlueRock Therapeutics, Genentech, Inc., Ionis Pharmaceuticals, Inc., Merck & Co., Inc., Roche and Takeda Pharmaceutical Company Limited

Abstract & Scholarship Deadline: February 13, 2019 / Abstract Deadline: March 13, 2019 / Discounted Registration Deadline: April 16, 2019

SUNDAY, JUNE 16

Arrival and Registration

MONDAY, JUNE 17

Welcome and Keynote Address (Z1)

Li-Huei Tsai, Massachusetts Institute of Technology, USA
Neuron-Glia Interaction in Health and Disease

Welcome and Keynote Address (Z2)

Marc Tessier-Lavigne, Stanford University, USA
Neural Circuits & Neuroregeneration

Neuronal Response to Injury (Z1)

David M. Holtzman, Washington University, USA
TREM2 Function Regulates A β linked Tau Seeding and Spreading in Neuritic Plaques

Eric J. Huang, University of California, San Francisco, USA
Germinal Matrix Hemorrhage

Marc R. Freeman, Vollum Institute, Oregon Health & Science University, USA
Mechanisms of Axon Degeneration

Short Talk(s) Chosen from Abstracts

Aggregation Mediated Toxicity (Z2)

Rudolph E. Tanzi, Massachusetts General Hospital, USA
Amyloid Beta Organoid Model

Valina L. Dawson, Johns Hopkins University School of Medicine, USA
Alpha Synuclein Toxicity

Patrik Verstreken, KU Leuven, Belgium
Tau Toxicity at the Synapse

Short Talk(s) Chosen from Abstracts

Workshop 1 (Z1)

Short Talks Chosen from Abstracts

Workshop 1 (Z2)

Short Talks Chosen from Abstracts

Transmission and Spread of Disease Pathology (Z2)

Xiaobo Mao, Johns Hopkins University, USA
The Mechanism of Pathological alpha-synuclein Transmission

John Collinge, Institute of Neurology, University College London, UK
Prion Neurodegeneration: Towards an Effective Treatment and its Relevance for Alzheimer's Disease

Karina Fog, H. Lundbeck A/S, Denmark

Alpha-Synuclein Antibodies as Therapeutics in Synucleinopathies – How antibodies affect cellular handling of misfolded alpha-synuclein

Short Talk(s) Chosen from Abstracts

Astrocytes (Z1)

Michael V. Sofroniew, David Geffen School of Medicine at UCLA, USA

Astrocyte Roles in Repair and Regeneration

Jin-Moo Lee, Washington University, USA
Astrocytosis and Amyloid Plaque Pathogenesis

Cagla Eroglu, Duke University Medical Center, USA
How do Glia Sculpt Synaptic Circuits?

Baljit S. Khakh, David Geffen School of Medicine, UCLA, USA
Astrocyte Regulation of Circuitry

Short Talk(s) Chosen from Abstracts

Poster Session 1

TUESDAY, JUNE 18

Microglia and Innate Immunity (Z1)

Dorothy Schafer, University of Massachusetts Medical School, USA
Microglia Dysregulation in Multiple Sclerosis

Kim N. Green, University of California, Irvine, USA
Microglial Regulation of Alzheimer's Disease

Anne Schaefer, Mount Sinai School of Medicine, USA
Talk Title to be Announced

Francisco J. Quintana, Harvard Medical School, USA
Environmental Control of Astrocyte Proinflammatory Activities

Short Talk(s) Chosen from Abstracts

New Therapeutic Opportunities (Z2)

Frank W. Rigo, Ionis Pharmaceuticals, USA
Antisense-based Strategies

Eric J. Huang, University of California, San Francisco, USA
Microglia and Neurologic Disease

Don W. Cleveland, University of California, San Diego, USA
Gene Silencing Therapy for Neurodegenerative Disease

Li Gan, University of California, San Francisco, USA
Talk Title to be Announced

Short Talk(s) Chosen from Abstracts

Workshop 2 (Z1)

Short Talks Chosen from Abstracts

Developing Effective Preclinical Disease Models (Z2)

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Cathleen Lutz, The Jackson Laboratory, USA
Preclinical Mouse Models of Neurodegenerative Diseases Spinal Muscular Atrophy (SMA), Friedreich's Ataxia, Amyotrophic Lateral Sclerosis (ALS) and Frontotemporal Lobe Dementia (FTD)

Elena Cattaneo, University of Milano, Italy
Organiod Models of Triple Repeat Diseases

Fred (Rusty) H. Gage, The Salk Institute for Biological Studies, USA
iPSC to Study Repair and Neurodegeneration

Short Talk(s) Chosen from Abstracts

Blood Brain Barrier (Z1)

Richard Daneman, University of California, San Diego, USA
Regulation of the Blood-Brain Barrier in Health and Disease

Alexandre Prat, Montreal Neurological Institute, Canada
Talk Title to be Announced

Eric V. Shusta, University of Wisconsin, Madison, USA
Modeling the Neurovascular Unit Using Human iPSCs

Short Talk(s) Chosen from Abstracts

Poster Session 2

WEDNESDAY, JUNE 19

Glymphatics, Lymphatics and Wound Healing (Z1)

Kari K. Alitalo, University of Helsinki, Finland
CNS Lymphatics

Iben Lundgaard, University of Lund, Sweden
Glymphatics

Maria Lehtinen, Boston Children's Hospital, Harvard Medical School, USA
Orchestration of Embryonic Brain Development by the Choroid Plexus

Julie Siegenthaler, University of Colorado Denver, USA
Meningeal Fibroblast Identity and Function: New Insights from scRNA-Sequencing

Short Talk(s) Chosen from Abstracts

Translating Therapeutics for Neurodegeneration to the Clinic (Z2)

Joseph W. Lewcock, Denali Therapeutics, USA
Therapeutic Strategies based on Human Genetics

Christopher E. Henderson, Biogen Inc., USA
Novel Therapeutics for Neurodegenerative Disease

Matthew Kennedy, Merck Research Labs, USA
Discovery and Development of LRRK2 Inhibitors

David V. Hansen, Genentech, Inc., USA
Microglial Activation States in Alzheimer's Disease: Are You a (Wo)man or a Mouse?

Short Talk(s) Chosen from Abstracts

Round Table Discussion from Industry, Government and Academia – Challenges and Opportunities (Z2)

Adaptive Immune Responses (Z1)

Vanda A. Lennon, Mayo Clinic, USA
Astrocytic and Oligodendroglial Autoimmunity

Daniel S. Reich, NIH/NINDS, USA
Imaging lesion repair in multiple sclerosis

Jorge I. Alvarez, University of Pennsylvania, USA
Talk Title to be Announced

Short Talk(s) Chosen from Abstracts

Molecular Mechanisms of ALS/FTD (Z2)

Aaron D. Gitler, Stanford University School of Medicine, USA
Expanding Mechanisms and Therapeutic Targets for Neurodegenerative Disease

Clotilde Lagier-Tourenne, Massachusetts General Hospital, USA
Molecular Mechanisms of Disease in ALS and FTD

Gene W. Yeo, University of California, San Diego, USA
Protein-RNA and Stress Granules Dysregulation in ALS

Short Talk(s) Chosen from Abstracts

Poster Session 3

THURSDAY, JUNE 20

Oligodendrocytes (Z1)

David H. Rowitch, University of Cambridge, UK
Functional Diversity of Astrocytes

Kelly Monk, Oregon Health & Science University, USA
Molecular and Genetic Mechanisms of Myelin Formation and Repair

Rita Balice-Gordon, Sanofi, Inc., USA
Talk Title to be Announced

Short Talk(s) Chosen from Abstracts

Drivers of Synaptic Loss in Disease (Z2)

Paul F. Worley, Johns Hopkins School of Medicine, USA
NPTX2, Synaptotoxicity and Cognitive Dysfunction in AD

Beth Stevens, Boston Children's Hospital, Harvard Medical School, USA
How Microglia Prune Synapses

Karen Hsiao Ashe, University of Minnesota, USA
Synaptic and Cognitive Dysfunction from Non-fibrillar Tau

Shanthini Sockanathan, Johns Hopkins University School of Medicine, USA
Control of ADAM10 α -Secretase Cleavage of Amyloid Precursor Protein by GDE2-RECK

Short Talk(s) Chosen from Abstracts

Workshop 3 (Z1)

Short Talks Chosen from Abstracts

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Workshop 2 (Z2)

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Short Talks Chosen from Abstracts

Hot Topics (Z1)

Speaker to be Announced

Speaker to be Announced

Speaker to be Announced

Short Talk Chosen from Abstracts

Glial Contributors to Neurodegeneration (Z2)

Mathew M. Blurton-Jones, University of California, Irvine, USA

*Generation and Use of iPSC-derived Microglia to Study
Neurodegenerative Diseases*

Katerina Akassoglou, Gladstone Institutes & University of California,
San Francisco, USA

Neurovascular Interactions: Mechanisms, Imaging, Therapeutics

Sandeep Robert Datta, Harvard Medical School, USA

The MS4A Gene Family in Alzheimer's Disease

Short Talk Chosen from Abstracts

Meeting Wrap-Up: Outcomes and Future Directions (Organizers) (Z1)

Meeting Wrap-Up: Outcomes and Future Directions (Organizers) (Z2)

FRIDAY, JUNE 21

Departure