

SUNDAY, JUNE 6

Welcome and Keynote Address (Joint)
Christopher K. Glass, University of California, San Diego, USA
Exploiting Dynamic Enhancer Landscapes to Infer Pathogenic Mechanisms in Neurodegenerative Diseases

Speakers to be Announced

Disease Mechanisms and Therapeutic Targets (Joint)
Holly Kordasiewicz, Ionis Pharmaceuticals, USA
is Antisense Oligonucleotide Therapeutics for Neurodegenerative Diseases

Joseph W. Lewcock, Denali Therapeutics, USA
Therapeutic Strategies for the Treatment of Neurodegenerative Disease Based on Human Genetics

Morgan H. Sheng, Broad Institute, USA
Severe Mental Illness: From Genes to Mechanism to Targets

Richard Hargreaves, Celgene, USA
What is Target ID, Anyway?

Short Talks Chosen from Abstracts

Workshop 1: Integrating the "Omics" Approaches to Microglial Function and Dysfunction in Neurodegeneration (Z3)

Short Talks Chosen from Abstracts

Workshop 1: New Tools and Approaches to Track and Manipulate Immune Cells in vivo (Z4)

Short Talks Chosen from Abstracts

Genetic Contributions to Neurodegeneration (Z3)
Alison Goate, Icahn School of Medicine at Mount Sinai, USA
Genetic Variations and Its Implications to Alzheimer's Disease

Chris Shaw†, UK Dementia Research Institute, UK
Talk Title to be Announced

Jennifer Yokoyama, University of California, San Francisco, USA
Immune Contributions to Early-onset Neurodegenerative Disease

Short Talks Chosen from Abstracts

Mapping Immune Cell States in Health and Disease (Z4)
Beth Stevens, Boston Children's Hospital, Harvard Medical School, USA
Mapping Microglia State to Function in Health and Disease

Christopher K. Glass, University of California, San Diego, USA
Genome Wide Approaches to Define Myeloid Cell Identity and Function

Melanie Greter†, University of Zurich, Switzerland
Cytokine Control of Myeloid Developmental State

Shane Antony Liddelow, New York University Langone Medical Center, USA
Redefining Astrocytes States in Health and Disease

Short Talks Chosen from Abstracts

Poster Session 1

MONDAY, JUNE 7

From Therapeutic Targets to Clinic (Z3)
Charlotte J. Sumner, Johns Hopkins School of Medicine, USA
The Evolving Challenges of Gene Targeted Therapeutics for SMA

Beverly L. Davidson, Children's Hospital of Philadelphia and University of Pennsylvania, USA
Virus-Based Gene Therapy for Huntington's Disease

Lorenz Studer, Memorial Sloan Kettering Cancer Center, USA
IPSC-Derived Dopaminergic Neurons and Parkinson's Disease Therapy

Short Talks Chosen from Abstracts

Neuroimmune Regulation of Sleep and Brain States (Z4)
Maiken Nederhaard, University of Rochester, USA
Sleep Regulation and Disease Roles of the Glymphatic System

David M. Holtzman, Washington University, USA
Mechanisms Linking Sleep, Innate Immunity, and Neurodegeneration

Marco Colonna, Washington University School of Medicine, USA
ILCs and Sleep

Short Talks Chosen from Abstracts

Workshop 2: Modeling Neurodegeneration using IPSC and Organoids (Z3)

Short Talks Chosen from Abstracts

Workshop 2: Building Better Models of Human Disease (Z4)
*Kate Monroe, Denali Therapeutics, USA
Short Talks Chosen from Abstracts

Cellular Pathways Targeted by Neurodegeneration (Z3)
Valina L. Dawson, Johns Hopkins University School of Medicine, USA
Mechanism of A-Synuclein-Mediated Neurodegeneration

Roy R. Parker, HHMI/University of Colorado, USA
Stress Granule Dynamic in Neurodegenerative Diseases

* Session Chair † Invited but not yet accepted     Program current as of May 1, 2020. Program subject to change. Meal formats are based on meeting venue. For the most up-to-date details, visit https://www.keystonesymposia.org.
KEYSTONE SYMPOSIA
on Molecular and Cellular Biology

Neurodegenerative Diseases: Genes, Mechanisms and Therapeutics (Z3)
Scientific Organizers: Eric J. Huang, Alison Goate and Richard M. Ransohoff
Supported by the Directors’ Fund

NeurolImmune Interactions in Health and Disease (Z4)
Scientific Organizers: Beth Stevens, Jonathan Kipnis and Kate Monroe
June 5-9, 2021 • Keystone Resort • Keystone, CO, USA
Supported by the Directors’ Fund

Scholarship Deadline: February 17, 2021 / Abstract Deadline: March 9, 2021 / Discounted Registration Deadline: April 6, 2021

Speaker to be Announced
Short Talks Chosen from Abstracts

NeuroImmune Crosstalk at Brain Borders (Z4)
Jonathan Kipnis, University of Virginia, USA
Lymphatic System Function and Dysfunction
Michal Schwartz, Weizmann Institute of Science, Israel
Boosting Immunity to Combat Alzheimer's Disease
Maria Lehtinen, Harvard Medical School, USA
Imaging and Probing Choroid Plexus Influence on Brain Development and Function
Richard Daneman, University of California, San Diego, USA
Control of Blood Brain Barrier Development, Function and Dysfunction

Short Talks Chosen from Abstracts

Poster Session 2

TUESDAY, JUNE 8

Phase Separation, Protein Aggregation and Transmission (Z3)
J. Paul Taylor, St. Jude Children’s Research Hospital, USA
Phase Separation of RNA Binding Proteins in Neurodegeneration
Sjors Scheres†, MRC Laboratory of Molecular Biology, UK
CryoEM Analyses of Proteinopathy in Neurodegeneration
Virginia M. Y. Lee, University of Pennsylvania School of Medicine, USA
Tau and A-Synuclein Aggregation and Spreading

Short Talks Chosen from Abstracts

Immune Mechanisms of Synapse Function and Dysfunction (Z4)
Baljit S. Khakh, David Geffen School of Medicine, UCLA, USA
Probing Neuronal-Glia-Immune Signaling on Synaptic Circuits in Health and Disease
Dorothy Schaefer, University of Massachusetts Medical School, USA
Neuro-Immune Cross Talk and Neural Circuit Plasticity
Betty Diamond, Feinstein Institute for Medical Research, USA
Autoimmune Mechanisms of Cognitive Dysfunction

Short Talks Chosen from Abstracts

Workshop 3: Integrating Omics with Genetics to Understand Disease Mechanisms (Z4)

Short Talks Chosen from Abstracts

Epigenetics and Transcriptomics of the Aging Brain (Z3)
Li-Huei Tsai, Massachusetts Institute of Technology, USA
Transcriptomics of Neuron-Glia in Alzheimer's Disease

Philip L. De Jager, Columbia University Medical Center, USA
Epigenetics and Systems Biology of Alzheimer's Disease
Anne Brunet, Stanford University, USA
Single Cell Transcriptomic Analyses of the Aging Neurogenic Niches

Short Talks Chosen from Abstracts

Immune Regulation of Brain Development and Behavior (Z4)
Jonathan P. Godbout, Ohio State University, USA
The Impact of Social Stress on Immune Cell Trafficking and Neurobehavior
Sonia Garel, INSERM, France
Microglia and the Crossroads of Cortical Wiring and Environmental Signals
Gloria Choi, Massachusetts Institute of Technology, USA
Neuroimmune Interactions Shaping Social Behavior

Short Talks Chosen from Abstracts

Poster Session 3

WEDNESDAY, JUNE 9

Gliaal Contributions to Neurodegeneration (Z3)
Marco Prinz, University of Freiburg, Germany
Talk Title to be Announced
Ádám Dénes†, Hungarian Academy of Sciences, Hungary
Talk Title to be Announced
Anne Schaefer, Mount Sinai School of Medicine, USA
Epigenetic Regulation of Microglia in Alzheimer's Disease
Michael T. Heneka, German Center for Neurodegenerative Diseases, Germany
Inflammasome Activation in Alzheimer's Disease

Short Talks Chosen from Abstracts

T Cell Brain Communication (Z4)
Burkhard Becher, University of Zurich, Switzerland
The T Cell-Myeloid Axis in Neuroinflammation
Anthony J. Filiano, Duke University, USA
T Cell-Neural Interactions in Health and Disease
Frauke Zipp†, Johannes-Gutenberg-Universität Mainz, Germany
Immune-CNS Crosstalk in Brain Injury and Repair

Short Talks Chosen from Abstracts

Workshop 3: Therapeutic Target Identification and Development - Views from Industry (Z3)

Short Talks Chosen from Abstracts

Modeling Neuro-Immune Interactions in Neurodegeneration (Z3)

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Fred H. Gage, The Salk Institute for Biological Studies, USA  
Cerebral Organoids and Neurodegeneration

Hui-Hsin Tsai, Biogen, USA  
Modeling Neuro Immune Interaction in Organotypic Brain Slices

Mathew M. Blurton-Jones, University of California, Irvine, USA  
Neuro-Immune Interactions in AD Models

Impact of Peripheral Signals and the Gut-Brain Axis (Z4)

Daniel Mucida, Rockefeller University, USA  
Neuronal Regulation of Innate Immune Cells

Elaine Y. Hsiao, University of California, Los Angeles, USA  
Microbiome Interactions with the Nervous System in Health and Disease

Henrique Veiga-Fernandes, Champalimaud Research, Portugal  
Neuronal Regulation of Innate Lymphoid Cells

Brian Kim, Washington University School of Medicine, USA  
The Neuroimmune Basis of Chronic Itch

Tony Wyss-Coray, Stanford University School of Medicine, USA  
How Young Blood Rejuvenates Old Brains

Short Talks Chosen from Abstracts

Meeting Wrap-Up: Outcomes and Future Directions (Organizers)  
(23)

Meeting Wrap-Up: Outcomes and Future Directions (Organizers)  
(24)

THURSDAY, JUNE 10

Departure