Scientific Organizers:
Alysson R. Muotri, University of California, San Diego, USA
Kinichi Nakashima, Graduate School of Medical Sciences, Kyushu University, Japan
Xinyu Zhao, University of Wisconsin-Madison, USA

Joint with the meeting on Transcriptional and Epigenetic Control in Stem Cells

The complexity of the brain, with thousands of neuronal types, permits the development of sophisticated cognitive and behavioral repertoires. Neurogenesis, the fundamental phenomenon that creates the brain, starts early during development and continues in the adult life, shaping our networks in close association with the environment. This unique meeting will explore neurogenesis from different perspectives, bringing new insights about the fundamental mechanisms that control normal brain development and that contribute to disease situations when this process is altered. It will bring together scientists working on different aspects of neurogenesis to exchange ideas and facilitate novel collaborative projects. The pairing of this meeting with a stem cell meeting will enhance the opportunity for interactions among researchers from different fields pursuing similar questions.

Session Topics:
• Neural Stem Cells (Joint)
• Adult Neurogenesis I & II
• Neurodevelopmental Disorders
• Therapeutics
• Disease and Regeneration
• Neurogenesis and Environment
• Embryonic Neurogenesis
plus several workshops

Scholarship Application & Discounted Abstract Deadline: September 14, 2016
Abstract Deadline: October 10, 2016
Discounted Registration Deadline: November 9, 2016

Note: Scholarships are available for graduate students and postdoctoral fellows and are awarded based on abstracts submitted.
SUNDAY, JANUARY 8
Arrival and Registration

MONDAY, JANUARY 9
Welcome and Keynote Address (Joint)
*Xinyu Zhao, University of Wisconsin-Madison, USA
*Konrad Hochedlinger, Massachusetts General Hospital, USA
Fred H. Gage, The Salk Institute for Biological Studies, USA
Regulation and Function of Neurogenesis in the Adult Hippocampus

Neural Stem Cells (Joint)
*Xinyu Zhao, University of Wisconsin-Madison, USA
Arnold R. Kriegstein, University of California, San Francisco, USA
Genomic Insights into Human Cortical Development, Lissencephaly, and Zika Microcephaly
Hongjun Song, University of Pennsylvania, USA
Tracking Neural Stem Cell Fate in vivo, One Cell at a Time
Jonas Frisén, Karolinska Institutet, Sweden
Adult Neurogenesis in Humans
Shradha Mukherjee, University of Texas Southwestern Medical Center, USA
Short Talk: Control of Adult Neural Stem Cell Quiescence by the REST/RPL4 Axis
Carol Schuurmans, Sunnybrook Research Institute, Canada
Short Talk: Proneural Genes Maintain a Neural Stem Cell Pool Through Multilineage Priming

Workshop 1: Disease “In-a-Dish” Modeling (J2)
*Hilde Van Esch, KU Leuven, Belgium
Cleber A. Trujillo, University of California, San Diego, USA
Cortical Neurotransmission Dysregulation as a Target for Rett Syndrome Treatment
Alex Shcheglovitov, University of Utah, USA
Generation of Organized Cortical Organoids with Synaptically Interconnected Neurons from Human iPSC-Derived Neural Rosettes
Meiyan Wang, University of California, San Diego, USA
Study Genetic Variations in the Development of Schizophrenia using Human Induced Pluripotent Stem Cells
Giorgia Quadrato, USC Stem Cell, USA
Large-Scale Single Cell RNA-Seq Resolves Cellular Diversity in Long-Term Cultures of Human Brain Organoids
Anita Bhattacharyya, University of Wisconsin-Madison, USA
Establishment of an iPSC Reporter Line for Detecting Fragile X Mental Retardation (FMR1) Gene Reactivation in Human Neural Cells

Adult Neurogenesis I (J2)
*Jenny Hsieh, University of Texas Southwestern Medical Center, USA

David V. Schaffer, University of California, Berkeley, USA
Molecular Elucidation and Engineering of Stem Cell Fate Decisions
Sebastian Jessberger, University of Zürich, Switzerland
Plasticity of Neural Stem Cells in the Adult Brain
D. Chichung Lie, University of Erlangen, Germany
Autophagy-Dependent Control of Neurogenesis
Anastasia Lobanova, The Scripps Research Institute, USA
Short Talk: Different Requirement for Functional Telomeres in Neural Progenitor Cells and Differentiated Postmitotic Neurons

Chromatin Regulation during Development and Cell Fate Decisions (J1)
*Konrad Hochedlinger, Massachusetts General Hospital, USA
Richard A. Young, Whitehead Institute for Biomedical Research, USA
Development and Disease: The View From Chromosome Neighborhoods
Andrew Xiao, Yale University, USA
The Recent Expansion of Epigenetic Regulatory Repertoire in Mammals
Cheng-Yu Lee, University of Michigan, USA
Short Talk: A Novel Hdac1/Rpd3-Poised Circuit Balances Continual Self-Renewal and Rapid Restriction of Developmental Potential during Asymmetric Stem Cell Division

Poster Session 1

TUESDAY, JANUARY 10
Neurodevelopmental Disorders (J2)
*Kinichi Nakashima, Kyushu University, Japan
Sergiu Pasca, Stanford University, USA
Developing Tridimensional Models of the Human Cerebral Cortex to Study Disease
Hilde Van Esch, KU Leuven, Belgium
From the Patient to the Dish and Back
Xinyu Zhao, University of Wisconsin-Madison, USA
Targeting Stem Cells for Neurodevelopmental Disorders
Patricia C. B. Beltrão-Braga, University of São Paulo, Brazil
The Use of Brain Organoids to Measure the Impact of Zika Virus on Microcephaly
Wenyong Liu, Weill Cornell Medical College/Memorial Sloan Kettering Cancer Center, USA
Short Talk: Distinct Temporal Regulation of Cortical Progenitor Division Pattern and Output by PARD3
Simoni Avansini, University of Campinas, Brazil
Short Talk: Dysregulation of NEUROG2 by miR-34a in Focal Cortical Dysplasia, Key Players in Neuroglial Differentiation
Chromatin Regulation in Pluripotent Stem Cells (J1)
*Kathrin Plath, University of California, Los Angeles, USA
Michael Elowitz, California Institute of Technology, USA
Dynamics of Gene Regulatory Network in Embryonic Stem Cells
Joanna Wysocka, Stanford University, USA
Epigenetic Control of Naive and Primed Pluripotency
Richard I. Gregory, Harvard Medical School, USA
RNA Regulation in Stem Cells and Disease
Alexander Meissner, Max Planck Institute for Molecular Genetics, Germany
Epigenetic Changes during Lineage Specification
Srinjan Basu, University of Cambridge, UK
Short Talk: Using 3D Super-Resolution Imaging to Understand the Assembly of the Nucleosome Remodeling and Deacetylase (NuRD) Complex on Chromatin
Simon Braun, Stanford University, USA
Short Talk: Broadly Applicable Inducible Epigenome Editing by CRISPR/Cas9

Workshop and Panel 2: Bridging an Understanding of Basic Science to Enable/Predict Clinical Outcome. Organized in collaboration with the California Institute for Regenerative Medicine (CIRM), (J2)

*J. Kent Fitzgerald, California Institute for Regenerative Medicine, USA
Mark H. Tuszynski, University of California, San Diego, USA
Neural Stem Cell Therapy for Spinal Cord Injury
Clive N. Svendsen, Cedars-Sinai Regenerative Medicine Institute, USA
A New FDA Approved Stem Cell and Gene Therapy Trial for ALS
Gary K. Steinberg, Stanford University, USA
Stem Cell Therapy for Stroke

Theraeutics (J2)
*Xinyu Zhao, University of Wisconsin-Madison, USA
 Nobuko Uchida, StemCells, Inc., USA
Use of Neural Stem Cells as a Therapeutic Opportunity
Su-Chun Zhang, University of Wisconsin-Madison, USA
Functional Reconstruction of Neural Circuits by Stem Cells
Chay T. Kuo, Duke University School of Medicine, USA
Chemical Screen for Genetic Modulators in Disease

Capture of Stem Cells from the Preimplantation Embryo (J1)
*Marius Wernig, Stanford University, USA
Kat Hadjantonakis, Sloan Kettering Institute, USA
Emergence of Pluripotency in the Mouse Blastocyst: Coordination of Transcriptional Control and Signaling
Rudolf Jaenisch, Whitehead Institute for Biomedical Research, USA
Human iPSCs, Pluripotency and Developmental Potential

Austin Smith, University of Cambridge, UK
Phases of Pluripotency
Aydan Bulut-Karsioglu, University of California, San Francisco, USA
Short Talk: Inhibition of mTor Induces a Paused Pluripotent State

Poster Session 2

WEDNESDAY, JANUARY 11

Disease and Regeneration (J2)
*Hongjun Song, University of Pennsylvania, USA
Kinichi Nakashima, Kyushu University, Japan
Insights into Rett Syndrome using Neural Stem Cells
Guo-li Ming, University of Pennsylvania, USA
Understanding ZIKV Pathogenesis during Neural Development
Yechiel Elkabetz, Max Planck Institute for Molecular Genetics, Germany
Reliable Modeling of Cortical Development and Microcephaly in Rosettes and Organoids by Combined Pathway Inhibition
Chun-Li Zhang, University of Texas Southwestern Medical Center, USA
Neural Regeneration and Reprogramming
Justyna Nitarska, University College London, UK
Short Talk: A Functional Switch of ATPase Subunit of NuRD Chromatin Remodeling Complex Regulates Mouse Cortical Development

Mechanisms of Reprogramming (J1)
*Kat Hadjantonakis, Sloan Kettering Institute, USA
Kathrin Plath, University of California, Los Angeles, USA
Mechanisms of Transcription Factor-Induced Pluripotency
Konrad Hochedlinger, Massachusetts General Hospital, USA
Programming and Reprogramming Cell Fate
Kristin Baldwin, The Scripps Research Institute, USA
Reprogramming-Based Insights into Neuronal Diversity
Peter Hendrickson, University of Utah, USA
Short Talk: Double Homeobox (DUX) Retinogens Activate Early Embryonic Gene and Retroviral Transcription
Effie Apostolou, Weill Cornell Medicine, USA
Short Talk: Self-Renewal Genes Remain Bookmarked by Selected Transcription Factors and Epigenetic Marks during Mitosis
Jian Feng, University at Buffalo, State University of New York, USA
Short Talk: p53 and Cell Cycle in Reprogramming Fibroblasts to Neurons
Sophie M. Morani, Memorial Sloan Kettering Cancer Center, USA
Short Talk: Developing a Pluripotent Stem Cell Culture System to Model Gastrulation in vitro
Magdalena Götz, University of Munich, Germany
New Players in Neurogenesis

* Session Chair † Invited but not yet accepted     Program current as of July 22, 2019. Program subject to change. Meal formats are based on meeting venue.
For the most up-to-date details, visit www.keystonesymposia.org/17J2 and www.keystonesymposia.org/17J1.
KEYSTONE SYMPOSIA
on Molecular and Cellular Biology

Neurogenesis during Development and in the Adult Brain (J2)
Scientific Organizers: Alysson R. Muotri, Kinichi Nakashima and Xinyu Zhao
Sponsored by California Institute for Regenerative Medicine (CIRM)

Transcriptional and Epigenetic Control in Stem Cells (J1)
Scientific Organizers: Konrad Hochedlinger, Kathrin Plath and Marius Wernig
January 8-12, 2017 • Resort at Squaw Creek • Olympic Valley, California, USA
Sponsored by Cell Research

Workshop (J1)
*Richard A. Young*, Whitehead Institute for Biomedical Research, USA

Matthias Merkenschlager, Imperial College London, UK
A High-Resolution Map of Transcriptional Repression

Ryan J. Cedeno, University of Pennsylvania, USA
The Histone Variant MacroH2A Reinforces Intestinal Stem Cell Epigenetic Identity and Function

Amy F. Chen, University of California, San Francisco, USA
Expression-Neutral Enhancer Switching Suppresses Premature EMT during ESC Differentiation

Jeremy Naftali Rich, Cleveland Clinic, USA
Targeting Glioma Stem Cells through Combined BMI1 and EZH2 Inhibition

Wen Gu, UT Southwestern Medical Center, USA
N-MYC Transcriptional Activity is Important for Increased Glycolytic Metabolism in Naive Human Pluripotent Stem Cells

Jacob H. Hanna, Weizmann Institute of Science, Israel
Enhanced Human Naive Pluripotency Growth Conditions that Endow Tolerance for Loss of Epigenetic Repressors

Neurogenesis and Environment (J2)
*Sebastian Jessberger*, University of Zürich, Switzerland

Amar Sahay, Harvard Medical School, USA
Rejuvenating and Re-Engineering Aging Memory Circuits

Jenny Hsieh, University of Texas Southwestern Medical Center, USA
Pathological Roles of Aberrant Adult-Generated Neurons

Yanhong Shi, Beckman Research Institute of City of Hope, USA
Modeling Neurodevelopment and Disease

Mariagrazia Grilli, University of Piemonte Orientale, Italy
Short Talk: Induction of Cortical Expansion and Folding in Human Cerebral Organoids

Mechanisms of Direct Lineage Conversion (J1)
*Magdalena Götz*, University of Munich, Germany

Marius Wernig, Stanford University, USA
Dissecting Mechanisms of Neural Transdifferentiation

Oliver Hobert, Columbia University, USA
Terminal Differentiation Restricts Cellular Plasticity

Deepak Srivastava, Gladstone Institute of Cardiovascular Disease and University of California, San Francisco, USA
Cellular Reprogramming Approaches for Cardiovascular Disease

Nicole Stone, University of California, San Francisco, USA
Short Talk: Chemical Enhancement of Direct Cardiac Reprogramming Mediated by Chromatin Accessibility

Poster Session 3
THURSDAY, JANUARY 12

Adult Neurogenesis II (J2)
*D. Chichung Lie*, University of Erlangen, Germany

Kazunobu Sawamoto, Nagoya City University Graduate School of Medical Sciences, Japan
Migration of New Neurons for Maintenance and Repair of Adult Mammalian Brain

Elena Cattaneo, University of Milano, Italy
Potential Application of Neural Stem Cells in Huntington's Disease Research

Kunimasa Ohta, Kumamoto University, Japan
Short Talk: Disruption of Tsukushi Function Leads to the Hydrocephalus by Aberrant Neurogenesis in the Brain

Luiz O. Penalva, University of Texas Health Science Center, USA
Neurogenesis vs. Glioblastoma Development: Same Post-Transcriptional Paths, Different Outcomes

Stem Cells and Disease Modeling (J1)
*Rudolf Jaenisch*, Whitehead Institute for Biomedical Research, USA

Jun Wu, The Salk Institute for Biological Studies, USA
Stem Cells, Interspecies Chimeras and Interspecies Chimera Complementation

Lorenz Studer, Memorial Sloan Kettering Cancer Center, USA
Exploiting Pluripotent Stem Cells for the Treatment of Neurological Diseases

Jürgen A. Knoblich, IMBA, Institute of Molecular Biotechnology, Austria
Modeling Human Brain Development and Disease in Stem Cell-Derived 3D Organoid Culture

Ali H. Brivanlou, Rockefeller University, USA
Mechanisms of Self-Organization in Human Embryonic Stem Cells

Hiroki Nobuta, University of California, San Francisco, USA
Short Talk: Human Oligodendrocyte Death in Pelizaeus-Merzbacher Disease is Rescued by Iron Chelation

Yun Li, Hospital for Sick Children, Canada
Short Talk: Induction of Cortical Expansion and Folding in Human Cerebral Organoids

Embryonic Neurogenesis (J2)
*Guo-li Ming*, University of Pennsylvania, USA

Ryoichiro Kagayama, Kyoto University, Japan
Oscillatory Control of Neural Stem Cells

Alysson R. Muotri, University of California, San Diego, USA
Modeling the Human Social Brain with Stem Cells

John L.R. Rubenstein, University of California, San Francisco, USA
Transcriptional Regulation of Telencephalic GABAergic Neurons

Path Towards Therapy Using Stem Cells (J1)
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Lorenz Studer, Memorial Sloan Kettering Cancer Center, USA
Hiromitsu Nakauchi, Stanford University, USA
Inter-Species Organogenesis: Generation of Mouse Islets in Rats for Long-Term, Immunosuppression-Free Glycemic Control in Diabetic Mice

Viviane Tabar, Memorial Sloan Kettering Cancer Center, USA
Modeling Histone Mutation-Bearing Gliomas in Human ES Cell Progeny

Irving L. Weissman, Stanford University, USA
Normal and Neoplastic Stem Cells

Meeting Wrap-Up: Outcomes and Future Directions (Organizers) (J2)
Meeting Wrap-Up: Outcomes and Future Directions (Organizers) (J1)

FRIDAY, JANUARY 13
Departure