

KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

Engineering Cell Fate and Function (Z3)

Scientific Organizers: Darrell J. Irvine, Sangeeta N. Bhatia and Christopher S. Chen

Sponsored by Cell Research

Stem Cells and Reprogramming (Z4)

Scientific Organizers: Deepak Srivastava and Shinya Yamanaka

April 6-11, 2014 • Resort at Squaw Creek • Olympic Valley, CA, USA

Supported by the Directors' Fund

Abstract & Scholarship Deadline: December 10, 2013 / Abstract Deadline: January 15, 2014 / Discounted Registration Deadline: February 6, 2014

SUNDAY, APRIL 6

MONDAY, APRIL 7

Keynote Address (Z3)

Karl Deisseroth, Stanford University, USA

Francis S. Collins[†], Director, National Institutes of Health, USA
Intersect of Genetics and Stem Cell Biology

Engineering Cells and Cell-Mimetic Particles to Impact Fate in vivo (Z3)

Jeffrey Karp, Brigham & Women's Hospital, Harvard Medical School, USA

Towards Engineered Cell Homing and Secretome Sensing Post Transplantation

Darrell J. Irvine, Massachusetts Institute of Technology, USA
Engineering T Cells

Samir Mitragotri, University of California, Santa Barbara, USA
Cell-Mimetic Synthetic Capsules

Short Talk(s) Chosen from Abstracts

Regulation of Pluripotency I (Z4)

John B. Gurdon, University of Cambridge, UK
Nuclear Transfer Reprogramming

Shinya Yamanaka, Center for iPS Cell Research and Application (CiRA), Kyoto University, Japan
Induction of Pluripotency by Defined Factors

Austin G. Smith, University of Cambridge, UK
The Design of Pluripotency

Short Talk(s) Chosen from Abstracts

From Cells to Tissues (Assembly, Morphogenesis, Cell-Cell Interactions in Systems) (Z3)

Celeste M. Nelson, Princeton University, USA
Epithelial Origami: The Art and Mechanics of Tissue Folding

Speaker to be Announced

Peter W. Zandstra, University of Toronto, Canada
Interactions of Cell Populations in Tissues

Short Talk Chosen from Abstracts

Regulation of Pluripotency II (Z4)

Rudolf Jaenisch, Whitehead Institute, USA
Mechanisms of Reprogramming

Robert H. Blelloch, University of California, San Francisco, USA
miRNA Regulation of Pluripotency

Kathrin Plath, University of California, Los Angeles, USA
Epigenetics of Reprogramming

Short Talk Chosen from Abstracts

Poster Session 1

TUESDAY, APRIL 8

Redirecting Natural Processes (Z3)

David J. Mooney, Harvard University, USA
Biomaterials to Control Immune Cell Trafficking and Activation

Jeffrey A. Hubbell, Institute for Biological Engineering & Biotechnology, Switzerland
Martix-Binding Engineered Proteins / Nanoparticles

Speaker to be Announced

Jennifer Elisseeff, Johns Hopkins University, USA
Biomaterials from Human Adipose Tissue

Short Talk(s) Chosen from Abstracts

Direct Reprogramming (Transdifferentiation) (Z4)

Deepak Srivastava, Gladstone Institute of Cardiovascular Disease, USA

Direct Reprogramming to the Cardiac Fate

Marius Wernig, Stanford School of Medicine, USA
Direct Reprogramming to the Neural Fate

Speaker to be Announced

Sheng Ding, University of California, San Francisco, USA
Re-direction of Partially Reprogrammed Cells to Multiple Fates

Short Talk(s) Chosen from Abstracts

Models of Human Tissues - Healthy and Diseased (Z3)

Melody A. Swartz, Swiss Federal Institute of Technology, Switzerland
Manipulating Lymphatic Endothelial Cells for Immunomodulation

Donald E. Ingber[†], Harvard Medical School, Children's Hospital Boston, USA

Lung on a Chip

Claudia Fischbach-Teschl, Cornell University, USA

Engineering Meets Cancer Biology: Experimental Models of Tumor Angiogenesis and Metastasis

Fiona M. Watt, King's College London School of Medicine, UK
Skin Cancer Models

Epigenetics of Reprogramming and Differentiation (Z4)

Richard A. Young, Whitehead Institute for Biomedical Research, USA
Epigenetic Landscape of Pluripotent Stem Cells

Joanna Wysocka, Stanford University School of Medicine, USA
Enhancer Landscapes in Pluripotency and Differentiation

Benoit G. Bruneau, Gladstone Institute of Cardiovascular Disease, USA

Epigenetic Regulation of Cardiac Differentiation

Short Talk Chosen from Abstracts

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Poster Session 2

WEDNESDAY, APRIL 9

In vivo Integration/Tolerance/Scaleup/ Delivery of Cells and Tissues (Z3)

Daniel G. Anderson, Massachusetts Institute of Technology, USA
In vivo Biomaterials Screening

Jason A. Burdick, University of Pennsylvania, USA
Engineering in vivo Cellular Responses through Biomaterial Design

Samuel I. Stupp, Northwestern University, USA
Supramolecular Nanostructures that Mimic VEGF as a Strategy for Ischemic Tissue Repair

Short Talk(s) Chosen from Abstracts

Modeling of Disease I (Z4)

Fred H. Gage, The Salk Institute for Biological Studies, USA
Disease Modeling of Complex Neurologic Disease

Nancy Stagliano, iPierian, Inc., USA
IPSC Models of Alzheimer's Disease: from Platform to Therapeutic Candidate

Clive Svendsen, Cedars-Sinai Regenerative Medicine Institute, USA
iPS Modeling of Spinal Muscular Atrophy

Lior Gepstein, Technion-Israel Institute of Technology, Israel
iPS Modeling of Cardiac Disease

Short Talk(s) Chosen from Abstracts

Workshop: Clinical Progress for Stem Cell Therapies. Sponsored by the California Institute for Regenerative Medicine (CIRM) (Z4)

***Ingrid W. Caras**, California Institute For Regenerative Medicine (CIRM), USA

Eva L. Feldman[†], University of Michigan, USA
Clinical Testing of Neural Stem Cells for ALS

Robert Lanza, Advanced Cell Technology, USA
ES- and iPS-Derived Cells for Clinical Trials

Philip D. Gregory[†], Sangamo BioSciences, Inc., USA
ZFN-Modified T Cell Products for HIV Therapy

Kevin A. D'Amour[†], ViaCyte, Inc., USA
ES-Cell Derived Islet Progenitors Delivered in an Immune-Protected Device for Type I Diabetes

Tracy Grikscheit, Children's Hospital Los Angeles, USA
Stem Cell-Derived Replacement Tissue for Children Born with Intestinal Disease

Models of Human Disease (iPS Focus) (Joint)

Lorenz Studer, Memorial Sloan Kettering Cancer Center, USA
Modeling Defects in Neural Crest Stem Cells

George Q. Daley, Children's Hospital Boston, USA
iPS Models of Hematopoietic Disease

Sangeeta N. Bhatia, Massachusetts Institute of Technology, USA
Hepatotropic Infections

Short Talk Chosen from Abstracts

Poster Session 3

THURSDAY, APRIL 10

Engineering Mammalian Cells with Synthetic Biology (Z3)

Ron Weiss, Massachusetts Institute of Technology, USA
Synthetic Biology: From Parts to Modules to Therapeutic Systems

Speaker to be Announced

Wendell A. Lim, University of California, San Francisco, USA
Talk Title to be Determined

Martin Fussenegger, ETH Zurich, Switzerland
Talk Title to be Determined

Short Talk(s) Chosen from Abstracts

Translational Applications of Stem Cells (Z4)

Hideyuki Okano, Keio University School of Medicine, Japan
Repair of Spinal Cord Injury

Yoshiki Sasai, RIKEN Center for Developmental Biology, Japan
Self Assembly of Stem Cells into Organoids

Leonard I. Zon, HHMI/Children's Hospital Boston, USA
Mechanisms of Hematopoietic Differentiation

Masayo Takahashi, RIKEN Center for Developmental Biology, Japan
Retinal Cell Therapy using iPS Cells

Short Talk(s) Chosen from Abstracts

Cellular Microenvironments/Synthetic Niches to Control Cell Fate (Joint)

Christopher S. Chen, University of Pennsylvania, USA
Engineered Microenvironments: An Approach to Understand Cell Adhesion, Forces and Assembly into Tissues

Jennifer Lewis, Harvard University, USA
Printing 3D Structures

Kristi S. Anseth, HHMI/University of Colorado, USA
Phototunable Hydrogels as Dynamic Cell Niches

Short Talk Chosen from Abstracts

FRIDAY, APRIL 11