

KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

Precision Genome Editing with Programmable Nucleases (B1)

January 28-February 1, 2018 • Keystone Resort • Keystone, Colorado, USA

Scientific Organizers: Jin-Soo Kim, Feng Zhang and Daniel F. Voytas

Sponsored by AstraZeneca

Abstract & Scholarship Deadline: October 3, 2017 / Abstract Deadline: November 1, 2017 / Discounted Registration Deadline: December 5, 2017

SUNDAY, JANUARY 28

Arrival and Registration

MONDAY, JANUARY 29

Welcome and Keynote Address

Jennifer A. Doudna, HHMI/University of California, Berkeley, USA
Talk Title to be Announced

DNA Repair and Genome Editing

Daniel Durocher, Lunenfeld-Tanenbaum Research Institute, Canada
Charting DNA Repair Pathways: Implications for Genome Editing

Maria Jasin, Memorial Sloan Kettering Cancer Center, USA
Talk Title to be Announced

Eric A. Hendrickson, University of Minnesota Medical School, USA
The Mechanism of Cas9/CRISPR-Initiated Genome Modification

Eugene V. Koonin, National Institutes of Health, USA
Prediction of New CRISPR-Associated Protein Functions

Genome Editing Methods and Novel Tools I

Feng Zhang, Broad Institute of MIT and Harvard University, USA
Genome Editing with Cas9 and Cpf1

David R. Liu, Harvard University, USA
Programmable Editing of a Target Base in Genomic DNA without Double-Stranded DNA Cleavage

J. Keith Joung, Massachusetts General Hospital, USA
Defining, Optimizing, and Modifying the Activities and Specificities of Genome-Editing Nucleases

Short Talk Chosen from Abstracts

Poster Session 1

TUESDAY, JANUARY 30

Genome Editing Methods and Novel Tools II

Scot A. Wolfe, University of Massachusetts Medical School, USA
DNA-Binding-Domain Fusions Enhance the Targeting Range and Precision of Cas9

Jin-Soo Kim, Seoul National University, South Korea
Genome Editing in Human Stem Cells, Animals, and Plants

Jacob E. Corn, University of California, Berkeley, USA
Molecular Mechanisms of Genome Editing

Keiji Nishida, Kobe University, Japan
Genome Editing with Non-Nuclease Modifiers in Bacteria to Plants

Short Talk(s) Chosen from Abstracts

Epigenome Editing and Gene Regulation

Charles Gersbach, Duke University, USA
Epigenome Editing for Gene Therapy and Disease Modeling

Lei (Stanley) Qi, Stanford University, USA
CRISPRi and CRISPRa Mediated Screens

Jennifer Mitchell, University of Toronto, Canada
Uncovering Distal Regulatory Element Function using CRISPR Genome Engineering

Short Talk Chosen from Abstracts

Poster Session 2

WEDNESDAY, JANUARY 31

Genetic Screening via CRISPR

David M. Sabatini, Whitehead Institute for Biomedical Research, USA
An Essential Role of the Mitochondrial Electron Transport Chain in Cell Proliferation Is to Enable Aspartate Synthesis

Reuven Agami, Netherlands Cancer Institute, Netherlands
Genetic Screens for Non-Coding Elements

Neville Sanjana, New York Genome Center & NYU, USA
New Frontiers for Pooled Screens: Finding Regulatory Elements in the Noncoding Genome and Capturing Multi-Cell Interactions

Danwei Huangfu, Memorial Sloan-Kettering Cancer Institute, USA
Genetic Screens in Human Pluripotent Stem Cells

Short Talk(s) Chosen from Abstracts

Therapeutic Genome Editing

Edward J. Rebar, Sangamo Therapeutics, Inc., USA
Engineering Zinc Finger Nucleases for Therapeutic Applications

Amy J. Wagers, Harvard University, USA
In vivo Gene Editing in Muscle and Muscle Stem Cells

Charles F. Albright, Editas Medicine, USA
Genome Editing for the Treatment of Genetic Diseases

Short Talk Chosen from Abstracts

Poster Session 3

THURSDAY, FEBRUARY 1

Plant and Animal Biotechnology

Dan Carlson, Recombinetics, Inc., USA
Animal Genome Editing

Caixia Gao, Chinese Academy of Sciences, China
Precise Plant Engineering with Genome Editing Tools

Daniel F. Voytas, University of Minnesota, USA
Crop Improvement Using TALENs

Weizhi Ji, Kunming University of Science and Technology, China
Precise Gene Editing in Non-Human Primates

Short Talk(s) Chosen from Abstracts

Human Germline Editing and ELSI

Kathy K. Niakan, Francis Crick Institute, UK
Genetic Editing for Studying Early Human Embryonic Development

Shoukrat Mitalipov, Oregon Health & Science University, USA
Human Germline Gene Correction

Tetsuya Ishii, Hokkaido University, Japan
The Potential Guidelines for Germline Genome Editing in Clinics

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

FRIDAY, FEBRUARY 2

Departure