

KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

Hematopoiesis (EK37)

April 21-23, 2021 • Virtual at your computer

Scientific Organizers: Daniel Starczynowski, Ross L. Levine and Hanna K.A. Mikkola

Supported by the Directors' Fund

WEDNESDAY, APRIL 21

Welcome and Keynote Address (8am Denver/Mountain Time Start)

***Daniel Starczynowski**, Cincinnati Children's Hospital Medical Center, USA

Benjamin L. Ebert, Dana-Farber Cancer Institute, USA
Clonal Hematopoiesis in Hematologic Malignancies and Cardiovascular Disease

Hematopoiesis during Stress and Aging (8:40am Denver/Mountain Time Start)

Ido Amit, Weizmann Institute, Israel
The Power of ONE: Immunology in the Age of Single Cell Genomics

***Katherine Y. King**, Baylor College of Medicine, USA
Infection Is a Driver of Dnmt3a-Mutant Clonal Hematopoiesis

***Jennifer Trowbridge**, The Jackson Laboratory, USA
Microenvironmental Regulation of HSC Aging

H. Leighton Grimes, Cincinnati Children's Hospital Medical Center, USA
Transitional States in Hematopoiesis

Anna E. Beaudin, University of Utah School of Medicine, USA
Short Talk: Prenatal Inflammation Perturbs Fetal Hematopoiesis and Causes Persistent Changes to Postnatal Immunity

Serine Avagyan, Boston Children's Hospital Cancer and Blood Disorders Center, USA
Short Talk: Clonal Hematopoiesis Results from the Response of Stem and Progenitor Cells to Inflammatory Cues from Mutant Mature Cells

Career Roundtable (12:30pm Denver/Mountain Time Start)

Fernando D. Camargo, Boston Children's Hospital, USA

Hanna K.A. Mikkola, University of California, Los Angeles, USA

Daniel Starczynowski, Cincinnati Children's Hospital Medical Center, USA

Poster Session (1:30pm Denver/Mountain Time Start)

Microenvironment and Signaling (3pm Denver/Mountain Time Start)

***Kateri Ann Moore**, Ichan School of Medicine at Mount Sinai, USA

***Timm Schroeder**, ETH Zürich, Switzerland
Long-Term Single-Cell Quantification: New Tools for Old Questions

Cristina Lo Celso, Imperial College London; Sir Francis Crick Institute, UK
Microenvironmental Regulation of HSC Function

Sean J. Morrison, University of Texas Southwestern Medical Center, USA
Niche Biology: Beyond Growth Factors

Sisi Chen, Memorial Sloan Kettering Cancer Center, USA
Short Talk: Altered LZTR1 and RIT1 Signaling Drive Clonal Hematopoietic Transformation

Adil Rasheed, University of Ottawa Heart Institute, Canada
Short Talk: Mixed Lineage Kinase Domain-Like Protein (MLKL) Maintains the Splenic Microenvironment to Restrict Hematopoiesis During Atherosclerosis

Anthony D. Ho, Heidelberg University, Germany
Short Talk: Hematopoietic Stem Cells with Elevated Central Carbon Metabolism Drive the Aging Process and Harbor Clonal Hematopoiesis

Christina Marie Termini, University of California, Los Angeles, USA
Short Talk: Semaphorin 3A Controls Bone Marrow Vascular Regeneration and Hematopoietic Reconstitution

Zanshé Thompson, University of South Carolina, USA
Short Talk: Ing4 Suppresses Quiescence and Inflammation in Hematopoietic Stem Cells

Melissa A. Meyer, La Jolla Institute for Immunology, USA
Short Talk: Discovery of a Neutrophil Subset with B Cell Features and the Ability to Modulate CD4+ T Cells

THURSDAY, APRIL 22

HSC Biology and Development (8am Denver/Mountain Time Start)

***Hanna K.A. Mikkola**, University of California, Los Angeles, USA

***Fernando D. Camargo**, Boston Children's Hospital, USA
Assessing HSC Potential in vivo at the Single Cell Level

Shannon L. McKinney-Freeman, St. Jude Children's Research Hospital, USA
Ontogeny of the Hematopoietic Hierarchy

E. Camilla Forsberg, University of California, Santa Cruz, USA
Chasing Mavericks: The Quest to Understand Hematopoietic Stem Cell Waves

Leonard I. Zon, HHMI/Boston Children's Hospital, USA
Embryonic Macrophage-Hematopoietic Stem Cell Interactions Determine Adult

Catherine S. Rhee, Harvard University/ MGH, USA
Short Talk: Rigidity of Cell Fate and Function among Monocytes

Grant Rowe, Boston Children's Hospital, USA
Short Talk: Hematopoiesis at Single Cell Resolution Spanning Human Development and Maturation

YeEun Kim, Stanford, USA
Short Talk: A Highly Multiplexed Single Cell Proteomic Screen Reveals the Phenotypic and Functional Landscape of the Human Lympho-Myeloid Differentiation Axis

Bianca A. Ulloa, Albert Einstein College of Medicine, USA
Short Talk: Definitive Hematopoietic Stem Cells Minimally Contribute to Embryonic Hematopoiesis

Hiromitsu Nakauchi, Stanford University, USA
Short Talk: Selective Expansion of Human HSCs in Cytokine-Free Chemically-Defined Medium

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Meet the Editors (12:30pm Denver/Mountain Time Start)

Daniel Klimmeck, EMBO Journal, Germany
Valerie Kouskoff, University of Manchester, UK
Eric T. Sawey, Journal of Experimental Medicine (JEM), USA
Swapnika Ramu, Cell Press, USA
Tanya Bondar, Blood Cancer Discovery of the American Association for Cancer Research, USA

Hematologic Malignancies (3pm Denver/Mountain Time Start)

***Daniel Starczynowski**, Cincinnati Children's Hospital Medical Center, USA
Adaptive Response of MDS Cells to the Inflammatory Milieu Contributes to Sustained Myeloid Expansion and a Competitive Advantage
Michael G. Kharas, Memorial Sloan Kettering Cancer Center, USA
RNA Binding Proteins in Leukemia
Iannis Aifantis, New York University School of Medicine, USA
RNA Binding Proteins as Regulators of Myeloid Leukemia Growth and Self-Renewal
***Ross L. Levine**, Memorial Sloan Kettering Cancer Center, USA
Role of Mutations in Epigenetic Regulators in Clonal Hematopoiesis and Evolution to AML
Anna-Katharina Wirth, Helmholtz Zentrum Munich, Germany
Short Talk: Modelling Acquired Treatment Resistance in PDX ALL in vivo Reveals Identical Therapeutic Targets Regardless of Diverse Genomic Alterations
Gaurav S. Choudhary, Albert Einstein College of Medicine, USA
Short Talk: SF3B1 Mutations Induce Oncogenic IRAK4 Isoforms and Activate Targetable Innate Immune Pathways in MDS and AML
Jing Fang, University of South Carolina, USA
Short Talk: Dissect the Function of GPR68 in Acute Myeloid Leukemia and Hematopoietic Stem Cells
Amitava Sengupta, Indian Institute of Chemical Biology, India
Short Talk: Polybromo SWI/SNF Integrates Chromatin Remodeling & BMP/TGF- β Signaling to Determine Mesenchymal Stromal Osteolineage Commitment and Hematopoiesis

FRIDAY, APRIL 23

Hematologic Malignancies: Biology and Therapy (8am Denver/Mountain Time Start)

***Ravi Majeti**, Stanford University, USA
Reprogramming B-ALL into APCs for Cancer Vaccination
Kate Yen, Auron Therapeutics, USA
Differentiation Therapy in AML
***Catriona H.M. Jamieson**, University of California, San Diego, USA
Innate Immune Deaminases Fuel Pre-Leukemia Stem Cell Malignant Transformation
Melvin Edward Thomas III, St. Jude Children's Research Hospital, USA
Short Talk: Germline Mutations in SAMD9 and SAMD9L Impair Hematopoietic Cell Function

Panagiotis Ntziachristos, Northwestern University, USA
Short Talk: Characterizing Mechanisms Controlling Aberrant Spliceosome Levels and Its Impact on Therapy Response in Acute Lymphoblastic Leukemia
Elvin Wagenblast, University Health Network, Princess Margaret Cancer Centre, Canada
Short Talk: Mapping the Cellular Origin and Developmental Context of Myeloid Leukemia in Down Syndrome
Liping Li, Johns Hopkins University, USA
Short Talk: High Mobility Group A1 Chromatin Remodeling Proteins Drive Progression in Myeloproliferative Neoplasms through Epigenetic Rewiring to Induce GATA2 and Cell Cycle Progression
Shailaja Hegde, University of Cincinnati, USA
Short Talk: Cell Basal Polarity Complex Scribble Is Required for Leukemic Initiation and Propagation through Negative Regulation of Apical Polarity Complex Activator Cdc42 and Hypoxia Inducing Factor-1 α
Michael E. Lawler, Thomas Jefferson University, USA
Short Talk: Interrogation of TLR2 Inflammatory Signaling in AML

Networking Lounge (1:30pm Denver/Mountain Time Start)

Transcription and Epigenetics (3pm Denver/Mountain Time Start)

***Atsushi Iwama**, University of Tokyo, Japan
Chromatin Accessibility in MDS Stem and Progenitor Cells
Patricia Ernst, University of Colorado Anschutz Medical Center, USA
MLL1 Levels and Activity Influence Hematopoietic Development
Hanna K.A. Mikkola, University of California, Los Angeles, USA
Mechanisms Regulating Human Hematopoietic Stem Cell Specification and Self-Renewal
***Margaret A. Goodell**, Baylor College of Medicine, USA
Clonal Competition Among Hematopoietic Stem Cells
Vikram R. Paralkar, University of Pennsylvania, USA
Short Talk: An Atlas of Hematopoietic Transcription Factor Binding to Ribosomal DNA Reveals a Role for CEBPA in Regulation of rRNA Transcription
Maxim Pimkin, Dana Farber Cancer Institute, USA
Short Talk: A Combinatorial Transcriptional Mechanism of Immune Escape in AML
Xiaotian Zhang, University of Michigan, USA
Short Talk: 3D Genomics Analysis in Acute Myeloid Leukemia Reveals the Activation of the Homeobox Genes Driven Leukemic-Specific 3D Network