

KEYSTONE SYMPOSIA

on Molecular and Cellular Biology

Transposable Elements at the Crossroads of Evolution, Health and Disease (X1)

Scientific Organizers: Kathleen H. Burns, Harmit S. Malik and Irina Arkhipova

Sponsored by Cell Research

Epigenetic Mechanisms and the Treatment of Cancer (X2)

Scientific Organizers: Tony Kouzarides, Rab K. Prinjha and Marisa S. Bartolomei

February 27-March 3, 2022 • Whistler Conference Centre • Whistler, BC, Canada

Supported by the Directors' Fund

Scholarship Deadline: November 17, 2021 / Abstract Deadline: November 23, 2021 / Discounted Registration Deadline: January 4, 2022

SUNDAY, FEBRUARY 27

Arrival and Registration

MONDAY, FEBRUARY 28

Welcome and Keynote Address (X1)

Michael D. Purugganan, New York University, USA
Plant Evolutionary Genomics

Welcome and Keynote Address (X2)

Cigall Kadoch, Dana-Farber Cancer Institute, Harvard Medical School, USA
Chromatin Remodeling Complexes and their Targeting in Cancer

In Sickness and in Health: Transposons in Aging, Neurobiology, and Genetic Disease (X1)

Vera Gorbunova, University of Rochester, USA
Transposable Elements in Aging

E. Alice Lee, Boston Children's Hospital & Harvard Medical School, USA

Transposable Elements in Neurobiology

Barrett Steinberg[†], Tessera Therapeutics, USA
Talk Title to be Announced

Short Talk(s) Chosen from Abstracts

Targeting Epigenetic Pathways in Cancer (X2)

Ali Shilatifard, Northwestern University, USA
Principles of Epigenetics and Chromatin in Development and Human Disease

Mark A. Dawson, Peter MacCallum Cancer Centre, Australia
Targeting the Epigenome for Therapeutic Gain

Tony Kouzarides, University of Cambridge, UK
Disruption of RNA Modification Pathways in Cancer

Short Talk(s) Chosen from Abstracts

Genomic Battlegrounds: Evolutionary Conflicts and Arms Races in the Mobilome (X1)

Harmit S. Malik, Fred Hutchinson Cancer Research Center, USA
Mobile Elements and Genetic Conflict

Zhao Zhang, Duke University, USA
Chasing the Jumping Genes

Tetsuji Kakutani, University of Tokyo, Japan
Transposon Epigenetic Control in Arabidopsis

Short Talk(s) Chosen from Abstracts

Targeting Transcription in Cancer (X2)

Kristian Helin, University of Copenhagen and Memorial Sloan Kettering Cancer Center, Denmark
Epigenetic Regulation of Transcription

Karen Adelman, Harvard Medical School, USA

Rewiring of Transcriptional Enhancers in Cancer and in Response to Therapeutics

Musa M. Mhlanga, Radboud Institute for Molecular Life Sciences, Netherlands

Compartmentalisation and Gene Interplay in Transcription

Short Talk(s) Chosen from Abstracts

Poster Session 1

TUESDAY, MARCH 1

Epigenomics and Epitranscriptomics of Transposition and Interactions with the Environment (X1)

Irina Arkhipova, Marine Biological Laboratory, USA
Transposons in the Genomes of Bdelloid Rotifers

Anjana Rao[†], La Jolla Institute for Immunology, USA
Talk Title to be Announced

Oded Rechavi, Tel Aviv University, Israel
Heritable Small RNAs

Zsuzsanna Izsvak, Max-Delbrück Center, Germany
Transposon Regulation in Early Development

Short Talk(s) Chosen from Abstracts

Chromatin Structure and Regulation (X2)

Robert E. Kingston, Massachusetts General Hospital, USA
Nucleosome Compaction and Phase Transition in Repression

Luciano Di Croce, CRG - Center for Genomic Regulation, Spain
Mechanisms of Polycomb-Mediated Silencing

Shelley L. Berger, University of Pennsylvania, USA
Epigenetic Enzymes and their Miss-Function in Disease

Ibrahim Cissé, Max Planck Institute of Immunobiology and Epigenetics, Germany
Imaging Chromatin

Short Talk(s) Chosen from Abstracts

Panel 1: Careers in Industry and Academia (X2)

Short Talks Chosen from Abstracts

From Ultraconservation to Hypervariability: The Significance of Structural Variation (X1)

Jeff F. Miller, University of California, Los Angeles, USA
Bacterial Adaptation by Diversity-Generating Retroelements

Vincent Colot, École Normale Supérieure, France
Genome Dynamics and Epigenetic Variation

Anna Selmecki, University of Minnesota, USA
Ploidy Variation in Fungi

Short Talks Chosen from Abstracts

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Mechanisms of RNA and DNA Modulation in Cancer (X2)

Ramin Shiekhhattar, University of Miami, USA
RNA Processing by the Integrator-Complex and Its Role in Cancer

François Fuks, Université Libre de Bruxelles, Belgium
Mapping and Function of RNA Modifications in Cancer

Salvador Aznar Benitah, ICREA and Institute for Research in Biomedicine, Spain
Lipid Metabolism in Cancer Metastasis

Short Talk(s) Chosen from Abstracts

Poster Session 2

WEDNESDAY, MARCH 2

Transposable Elements in Cancer (Joint)

Kathleen H. Burns, Harvard Medical School, USA
LINE-1 Expression and Retrotransposition in Cancer

Ting Wang, Washington University, USA
Transposable Elements in Development and Driving Gene Expression in Cancer

Bradley E. Bernstein, Dana-Farber Cancer Institute, USA
Epigenetic and Topologic Changes that Restrain Malignancies

Katherine Chiappinelli, George Washington University, USA
Epigenetic Regulation of Transposable Elements and the Innate Immune Response in Cancer

Short Talks Chosen from Abstracts

Panel 2: Women in Science (X2)

Short Talks Chosen from Abstracts

Transposon Domestication and Co-Option at the DNA, RNA and Protein Levels (X1)

Cedric Feschotte, Cornell University, USA
Transposon Domestication

Miguel Branco, Queen Mary University of London, UK
Placental Gene Regulation by Transposable Elements

Edward B. Chuong, University of Colorado Boulder, USA
Transposon Repurposing in Gene Networks

Short Talk(s) Chosen from Abstracts

Epigenetics in Inheritance and Development (X2)

Anne C. Ferguson-Smith, University of Cambridge, UK
Mammalian Epigenetic Inheritance - Models and Mechanisms

Marisa S. Bartolomei, University of Pennsylvania Perelman School of Medicine, USA
DNA Methylation in Reprogramming

Anne Brunet, Stanford University, USA
Molecular Basis of Longevity and Age-Related Diseases

Short Talk(s) Chosen from Abstracts

Poster Session 3

THURSDAY, MARCH 3

Transpositions across Genome Compartments: Euchromatin, Telomeres, Centromeres, Genomic Islands (X1)

John V. Moran†, University of Michigan Medical School, USA
Talk Title to be Announced

José R. Penadés, Imperial College London, UK
Transposons and Virulence and Resistance Factors

Amanda Larracunte, University of Rochester, USA
Selfish DNAs and Satellites

Fangpu Han, Chinese Academy of Sciences, China
Plant Chromosome Biology

Short Talks Chosen from Abstracts

Epigenetic Drug Discovery in Cancer (X2)

Rab K. Prinjha, GlaxoSmithKline, UK
Translating Novel Epigenetic Drugs into the Clinic

Shefali Agarwal, Epizyme, Inc., USA
Role of EZH2 Inhibitor as an Epigenetic Target in Oncology

Tamara Maes, Oryzon Genomics, Spain
Talk Title to be Announced

Ho Man Chan, AstraZeneca, USA
Targeting Epigenetic Pathways in Cancers

Short Talk(s) Chosen from Abstracts

Structural and Mechanistic Underpinnings of Transposition across the Kingdoms of Life (X1)

Orsolya Barabas, European Molecular Biology Laboratory, Germany
Transposable Element-Mediated DNA Rearrangements

Phoebe A. Rice, University of Chicago, USA
Mobile DNA at the Molecular Level

Fred Dyda†, NIDDK, National Institutes of Health, USA
Talk Title to be Announced

Short Talks Chosen from Abstracts

Epigenetics in Diagnosis and Treatment of Cancer (X2)

Kimberly Stegmaier, Dana-Farber Cancer Institute, USA
Treatments in Pediatric Oncology

Joanna Holbrook, Epigenetix, UK
Diagnosis using DNA Methylation

Dan A. Landau, Weill Cornell Medicine, USA
Clonal Evolution in Cancer Care

Short Talk(s) Chosen from Abstracts

Meeting Wrap-Up: Outcomes and Future Directions (Organizers) (X1)

Meeting Wrap-Up: Outcomes and Future Directions (Organizers) (X2)

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FRIDAY, MARCH 4

Departure