

SCIENTIFIC PROGRAM

(Tentative – 12/8/2020 draft version 7)

Asilomar Chromatin, Chromosomes and Epigenetics Conference

December 10th-12th 2020

8:00-5:00 PST Online

asilomarchromatin.com

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Thursday 12/10 8:30 AM PST

Introductory Remarks – Michael Goldman

SESSION 1. NUCLEAR ORGANIZATION

KEYNOTE | 8:40 AM PST – 9:20 AM PST

Introduction by James Davie

Michael Hendzel, University of Alberta

Chromatin has solid-like behavior at the mesoscale

NUCLEAR ORGANIZATION

9:20 AM PST – 12:00 PM PST

Chairperson: Michael Hendzel, *University of Alberta*

9:20am

Chris E. Berndsen, James Madison University

The solution structure and biochemistry of the Cone-Rod Homeobox (CRX) transcription factor

9:40am

Florentin Huguet, Brunel University London

Involvement of Repo-man in Lamin A/C-Ser22 dephosphorylation

10:00am

Alan Underhill, University of Alberta

Control of histone methylation in time and space through biological condensate formation

Break

10:30am

Irina Vaysertreyger, University of California, Davis

ATR plays a major role in radial chromosomes formation

10:50am

Coral Y. Zhou, University of California, Berkeley

*Reconstitution of mitotic chromosome scaling using *Xenopus* egg extracts*

11:10am

Grace Su, Doane University

Satb1 protein interactions prior to nuclear import

Thursday 12/10 1:00 PM PST

SESSION 2. BIOINFORMATICS APPROACHES FOR FUNCTIONAL GENOMICS

Chairperson: Tasnim Beacon, *University of Manitoba*

KEYNOTE | 1:00 PM PST – 1:40 PM PST

Introduction by Tasnim Beacon

Ting Wang, Washington University School of Medicine

Transposable element mediated 3D genome evolution

BIOINFORMATICS APPROACHES FOR FUNCTIONAL GENOMICS

1:40 PM PST – 3:20 PM PST

1:40 PM

Michael M. Hoffman, Princess Margaret Cancer Centre and University of Toronto

BEHST: genomic set enrichment analysis enhanced through integration of chromatin long-range interactions

2:00 PM

Nicole Pagane, The Rockefeller University

Coarse-graining DNA mechanics to study mesoscale chromatin geometries and interdigitation

Break

2:30 PM

Anthony J. Kusalik, University of Saskatchewan

Method choice in gene set analysis has important consequences for analysis outcome

2:50 PM

Jennifer A. Mitchell, University of Toronto

Comparative epigenomics determines transcriptional regulatory codes in mammalian genomes

SESSION 3. EPIGENETICS AND METABOLISM

3:20 PM PST – 5:20 PM PST

Chairperson: Philippe Georgel, Marshall University

3:20 PM

Michael Church, Stowers Institute for Medical Research

*Swi-Snf is a regulator of sulfur metabolism in *Saccharomyces cerevisiae**

3:40 PM

Christine E. Cucinotta, Fred Hutchinson Cancer Research Center

RSC primes the quiescent genome for robust and accurate hypertranscription upon exit

4:00 PM

Damon Meyer, California Northstate University

Saccharomyces cerevisiae Mus81-Mms4 prevents accelerated senescence in telomerase-deficient cells

Break

4:30 PM

Christopher Eskiw, University of Saskatchewan

Selective amino acid restriction improves HGPS nuclear phenotypes and increases cellular lifespan

4:50 PM

Gary Schroth, Illumina

TBD

Friday 12/11 8:00 AM PST

Introductory Remarks – Michael Goldman

SESSION 4. EPIGENETICS, CELL DIFFERENTIATION AND DISEASE

KEYNOTE | 8:10 AM PST – 8:50 AM PST

Introduction by Juan Ausió, *University of Victoria*

Myriam Hemberger, University of Calgary

Epigenetic changes interfere with normal uterine function as a function of reproductive aging in mice

EPIGENETICS, CELL DIFFERENTIATION AND DISEASE

8:50 AM PST – 11:10 AM PST

Chairperson: Juan Ausió, *University of Victoria*

8:50 AM

Jamy C. Peng, St. Jude Children's Research Hospital

PRC2 modulation by Ybx1 governs embryonic brain development

9:10 AM

Tapan Sharma, University of Massachusetts Medical School

The Bromodomains of the mammalian SWI/SNF (mSWI/SNF) ATPases Brahma (BRM) and Brahma Related Gene 1 (BRG1) promote chromatin interaction and are critical for skeletal muscle differentiation

9:30 AM Tammy L. Lee, University of Toronto

Chromodomain Proteins CEC-3 and CEC-6 affect chromatin and small RNA pathways and protect germline immortality

Break

10:00 AM

Motoki Takaku, University of North Dakota

Active role of the nucleosome in breast cancer cell reprogramming

10:20 AM

Luis Abatti, University of Toronto

SOX2 overexpression is driven by epigenetic misactivation of a novel distal enhancer in multiple cancer subtypes

10:40 AM

Paola Vagnarelli, Brunel University London

Non-redundant functions of H2A.Z.1 and H2A.Z.2 in chromosome segregation and cell cycle progression

SESSION 5. DNA REPLICATION AND REPAIR – Part I

11:10 AM PST – 12:10 AM PST

Chairperson: Sally Pasion, *San Francisco State University*

11:10 AM

Mirit I. Aladjem, National Cancer Institute

The recruitment of CRL4 ubiquitin ligase complexes to chromatin modulates chromosome duplication and segregation

11:30 AM

Sean M. Burgess, University of California, Davis

The synaptonemal complex protein Sycp1 in zebrafish is required for pairing interstitial regions of meiotic chromosomes but not the ends

12:10 AM

Zhigang Jin, University of Alberta

Argonaute proteins promote histone H3K9 tri-methylation to facilitate homologous recombination

Friday 12/11 1:00 PM PST

SESSION 5. DNA REPLICATION AND REPAIR – Part II

1:00 PM PST – 3:00 PM PST

1:00 PM

Debashish Menon, University of North Carolina

Mammalian SWI/SNF chromatin remodeler is essential for reductional meiosis in males

1:20 PM

Audrey Paillé, Sherbrooke University

UV light-induced DNA lesions cause dissociation of RNA polymerases-I and a change in chromatin structure which causes a switch between nucleotide excision repair sub-pathways

1:40 PM

Konstantinos Stamatiou, Brunel University London

CCDC86/Cyclon is a novel Ki-67 interacting protein important for cell division

Break

2:10 PM

Hannah Vicars, University of California, Santa Cruz

Kinetochore-independent sister chromosome separation is driven by microtubule dynamics

2:30 PM

Alexia Muguet, Sherbrooke University

Making tools to explore the proteome of rRNA gene-chromatin during nucleotide excision repair

SESSION 6. REGULATION OF TRANSCRIPTION

3:00 PM PST – 5:30 PM PST

Chairperson: Jennifer Mitchell, *University of Toronto*

3:00 PM

LeAnn Howe, University of British Columbia

Reestablishing transcription on newly replicated DNA

3:20 PM

Daisy Castillo Guzman, University of California, Davis

SF3B1-targeted splicing inhibition triggers global alterations in transcriptional dynamics and R-loop metabolism

3:40 PM

Archana Dhasarathy, University of North Dakota.

A transcriptional memory model for the epithelial to mesenchymal transition

Break

4:10 PM

Kailynn MacGillivray, University of Toronto

Genome-wide patterns of histone H2A mono-ubiquitylation and effects on C. elegans developmental timing

4:30 PM

Ryan D. Mohan, University of Missouri – Kansas City

Function and regulation of the Spt-Ada-Gcn5-Acetyltransferase (SAGA) deubiquitinase module

4:50 PM

Shreyasi Mukherjee, Cincinnati Children's Hospital Medical Center

SOX transcription factors direct the genomic specificity of a TCF-independent Wnt/ β -catenin transcription complex

5:10 PM

Michael D. Wilson, SickKids Research Institute and University of Toronto

Conserved regulatory logic at accessible and inaccessible chromatin during the acute inflammatory response in mammals

Saturday 12/12 8:00 AM PST

Introductory Remarks – Michael Goldman

SESSION 7. NON-CODING RNAs

KEYNOTE | 8:10 AM PST – 8:50 AM PST

Introduction by Josée Dostie, *McGill University*

Carolyn Brown, University of British Columbia

XIST: How to silence a chromosome by lncRNA

NON-CODING RNAs

8:50 AM PST – 11:40 AM PST

Chairperson: Josée Dostie, *McGill University*

8:50 AM

Philipp G. Maass, SickKids Research Institute and University of Toronto

Spatial positioning & regulation of the lncRNA CISTR-ACT

9:10 AM

Mohammad A.M. Ali, State University of New York-Binghamton University

Matrix metalloproteinase-2 mediates ribosomal RNA transcription by cleaving nucleolar histones

9:30 AM

Jitendra Thakur, Fred Hutchinson Cancer Research Center

Architectural RNA is required for heterochromatin organization

9:50 AM

Katrina Good, University of Victoria

Novel regulatory interactions of MeCP2 with RNA

Break

10:20 AM

Julie Claycomb, University of Toronto

*Untangling Argonaute/small RNA gene regulatory networks in *C. elegans**

10:40 AM

Martin Sauvageau, Montreal Clinical Research Institute

In vivo roles of long noncoding RNAs

11:00 AM

Musa Mhlanga, Radboud University

A chromatin-regulated biphasic circuit between IL-1 β and IL-37 coordinates inflammation and trained immunity

11:20 AM

Dana Segal, McGill University

A conserved HOXA1-HOTAIRM1 regulatory axis coordinates neuronal differentiation

Saturday 12/12 1:00 PM PST

SESSION 8. TOPOLOGICAL GENOME ORGANIZATION

1:00 PM PST – 3:40 PM PST

Chairperson: Christopher Eskiw, *University of Saskatchewan*

1:00 PM

Viviana I. Risca, The Rockefeller University

Probing the meso-scale 3-D epigenome

1:20 PM

Mayra Furlan-Magaril, National Autonomous University of Mexico

Chromatin conformation rhythms around the clock

1:40 PM

A. Rasim Barutcu, University of Toronto

Differential contribution of steady-state RNA and active transcription in chromatin organization

2:00 PM

Karina Jácome-López, National Autonomous University of Mexico

The heterogeneity of topologically associated domain boundaries and their relationship to the regulation of gene expression

Break

2:30 PM

Sabriya A. Syed, University of Massachusetts Medical School

Protein arginine methyltransferase 5 (Prmt5) is a co-activator and novel mediator of higher order chromatin structure during adipogenesis

2:50 PM

Commodore P. St. Germain, University of California, Davis

Genome-wide mapping of transcription-replication interactions in mouse primary B cells

3:10 PM

Mathieu Blanchette, McGill University

Estimating DNA-DNA interaction frequency from Hi-C data at high resolution

CLOSING KEYNOTE | 3:40 PM PST – 4:20 PM PST

Introduction by Christopher Eskiw, *University of Saskatchewan*

Melanie Ott, University of California, San Francisco

SARS-CoV-2 and host chromatin interactions

Closing remarks – Michael Goldman

20 minute business meeting

4:20 – 4:40pm