



Noncoding RNAs: Form, Function, Physiology

February 25–March 1, 2018 | Keystone Resort | Keystone, Colorado | USA

Scientific Organizers:

Joshua T. Mendell, HHMI/University of Texas Southwestern Medical Center, USA

Igor Ulitsky, Weizmann Institute of Science, Israel

Sohail F. Tavazoie, Rockefeller University, USA

Recent research has revealed pervasive transcription of eukaryotic genomes outside of protein-coding genes. The resulting noncoding RNA transcripts come in many forms, perform diverse functions and play critical roles in organismal health and disease. Tens of thousands of noncoding RNAs have been identified thus far, but we are still at the earliest stages of understanding their regulation and function. Such knowledge will be critical in order to harness the full potential of noncoding RNAs for the diagnosis and treatment of human diseases. To address this gap in our understanding, this conference aims to: 1) Bring together a multi-disciplinary group of scientists at all career stages to share their latest research in this field; 2) Provide a forum for the presentation of cutting-edge data on noncoding RNA structure, function and their roles in physiology and disease; and 3) Offer junior scientists outstanding mentoring and networking opportunities through close interactions with senior investigators. It is anticipated that the interactions of participants with diverse backgrounds, expertise and experimental models will spur new lines of investigation and collaborations that will lead to breakthroughs in our understanding of the noncoding transcriptome.

Session Topics:

- Evolution and Structure of Noncoding RNAs
- Prokaryotic and Viral Noncoding RNAs
- Noncoding RNAs in Epigenetic Regulation
- Workshop: Highlights of Submitted Abstracts
- Noncoding RNAs in Subcellular Organization
- Transcriptional and Post-Transcriptional Regulation by Noncoding RNAs
- Non-Canonical Roles of tRNAs, snoRNAs and Repetitive RNAs
- Noncoding RNAs in Disease
- Unconventional RNA Form and Function

Scholarship Application & Discounted Abstract Deadline: October 24, 2017

Abstract Deadline: November 21, 2017

Discounted Registration Deadline: December 19, 2017



Note: Scholarships are available for graduate students and postdoctoral fellows and are awarded based on the abstract submitted. Submitting an abstract is an excellent opportunity to gain exposure for your work. Abstracts submitted by the abstract deadline will also be considered for short talks on the program.

Upper image of high throughput SNP genotyping system - nanodispenser courtesy of the Genetics and Genomics Branch of the National Institute of Arthritis and Musculoskeletal and Skin Diseases, NIH

Meeting Hashtag: #KSncra

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SUNDAY, FEBRUARY 25

Arrival and Registration

MONDAY, FEBRUARY 26

Welcome and Keynote Address

***Joshua T. Mendell**, HHMI/University of Texas Southwestern Medical Center, USA

Caroline Dean, John Innes Centre, UK
Antisense-Mediated Chromatin Silencing at FLC

Evolution and Structure of Noncoding RNAs

***Joshua T. Mendell**, HHMI/University of Texas Southwestern Medical Center, USA

Igor Ulitsky, Weizmann Institute of Science, Israel
Sequences Enriched in Alu Repeats Drive Nuclear Localization of Long RNAs in Human Cells

Howard Y. Chang, Stanford University, USA
Genome Regulation by Long Noncoding RNAs

Kevin Weeks, University of North Carolina, USA
Structure-Based Discovery of New Functions in Large RNAs

Yashar Niknafs[†], University of Michigan, USA
Short Talk: Oncogenic Role of THOR, a Conserved Cancer/Testis Long Noncoding RNA

Li Yang[†], CAS-MPG Partner Institute for Computational Biology, China
Short Talk: N6-Methyladenosines Modulate A-to-I RNA Editing

Prokaryotic and Viral Noncoding RNAs

***Howard Y. Chang**, Stanford University, USA

Jörg Vogel, University of Würzburg, Germany
Grad-seq Discovers the Third Domain of Small RNA-mediated Gene Regulation in Bacteria

Ronald R. Breaker, Yale University, USA
Comprehensive Discovery of Ribozymes and Riboswitches

Joan A. Steitz, HHMI, Yale University, USA
Nuclear Noncoding RNAs: More Surprises

Roe Amit, Technion - Israel Institute of Technology, Israel
Short Talk: Short CU-Rich Motifs Insulate Bacterial Genes from Transcriptional Read-Through

Poster Session 1

TUESDAY, FEBRUARY 27

Noncoding RNAs in Epigenetic Regulation

***John L. Rinn**, University of Colorado Boulder, USA

Jeannie T. Lee, Massachusetts General Hospital, USA
How RNA Recruits Epigenetic Complexes to the X-Chromosome

Neil Brockdorff, University of Oxford, UK
Chromosome Silencing by Xist RNA

Roberto Bonasio, University of Pennsylvania, USA
Regulation of Chromatin Complexes by Protein-RNA Interactions

Xiaohua Shen, Tsinghua University, China
Cis-Acting lncRNAs in Transcription and Chromatin Regulation

Chen Davidovich, Monash University, Australia

Short Talk: Mechanism for RNA-Mediated Regulation of the Histone Methyltransferase Polycomb Repressive Complex 2 (PRC2)

Amanda J. Whipple[†], Massachusetts Institute of Technology, USA
Short Talk: Neuronal Functions of Imprinted, Noncoding RNAs

Workshop: Highlights of Submitted Abstracts

***Susan B. Carpenter**, University of California, Santa Cruz, USA

***David L. Spector**, Cold Spring Harbor Laboratory, USA

Amanda Louise Gervaise, Baylor College of Medicine, USA
Global Profiling Identifies Germline miRNAs Functioning During Oogenesis in C. elegans

Yunsun Nam, University of Texas Southwestern Medical Center, USA
Heme Enables Proper Positioning of Drosha and DGCR8 on Primary microRNAs

Yoo-Jeong Han, University of Chicago, USA
Circular RNAs Expressed from the BRCA1 Pseudogene Regulates the DNA Damage Response through SERBP1 RNA-Binding Protein

Rui Zhou, Sanford-Burnham Medical Research Institute, USA
The Circular RNA Edis Modulates Innate Immunity and Neurodevelopment in Drosophila

Andre Verdel, Institut Albert Bonniot, France
A New lncRNA-based Mechanism Controlling Sexual Differentiation and Heterochromatin Gene Silencing in Fission Yeast

Martina Rossi, University of Genoa, Italy
LncRNA EPR Orchestrates Epithelial Gene Expression Program in Mammary Gland Cells

Musaddeque Ahmed, Princess Margaret Cancer Centre, Canada
CRISPRi Screening of Susceptibility Regulatory Regions and Long Noncoding RNAs in Prostate Cancer

Joon H. Choi, University of Texas at Austin, USA
The Triphosphatase DUSP11 Controls the Level and Immunostimulatory Activity of Alu Transcripts

Noncoding RNAs in Subcellular Organization

***Jeannie T. Lee**, Massachusetts General Hospital, USA

Tetsuro Hirose, Hokkaido University, Japan
Dissection of Elements and Machinery of Architectural Noncoding RNAs

David L. Spector, Cold Spring Harbor Laboratory, USA
Targeting Long Noncoding RNAs to Impact Breast Cancer Progression

John L. Rinn, University of Colorado Boulder, USA
High-Throughput Identification of RNA Nuclear Enrichment Sequences

Miha Modic, Helmholtz Zentrum München, Germany
Short Talk: Cross-Regulation between TDP-43 and Paraspeckles Promotes Pluripotency-Differentiation Transition

Poster Session 2

WEDNESDAY, FEBRUARY 28

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Transcriptional and Post-Transcriptional Regulation by Noncoding RNAs

***Matthias W. Hentze**, European Molecular Biology Laboratory, Germany

Reuven Agami, Netherlands Cancer Institute, Netherlands
Functional Dissection of Enhancer RNAs

Susan B. Carpenter, University of California, Santa Cruz, USA
Genetic Models Reveal Cis and Trans Functions for LincRNA-Cox2

Joshua T. Mendell, HHMI/University of Texas Southwestern Medical Center, USA
Noncoding RNAs in Post-Transcriptional Regulatory Circuits

Irene Bozzoni, University La Sapienza, Rome, Italy
Long Noncoding RNAs and Circular RNAs in the Control of Muscle Differentiation

Olof S. Dallner, Rockefeller University, USA
Short Talk: Quantitative Regulation of the Leptin Gene by a Fat-Specific lncRNA

Ramesh S. Pillai, University of Geneva, Switzerland
Short Talk: Regulation of m6A Transcripts by YTHDC2 Is Essential for Meiosis in the Mammalian Germline

Non-Canonical Roles of tRNAs, snoRNAs, and Repetitive RNAs

***Irene Bozzoni**, University La Sapienza, Rome, Italy

Sohail F. Tavazoie, Rockefeller University, USA
tRNA Fragments in Hypoxic Response and Cancer Progression

Britt Glaunsinger, University of California, Berkeley/HHMI, USA
Repetitive Noncoding RNAs in Viral Pathogenesis

Matthias W. Hentze, European Molecular Biology Laboratory, Germany
Regulation of Selective Autophagy by the Small Noncoding Vault RNA1-1

Benjamin Hawley, University of Leicester, UK
Short Talk: Drosha Drives the Formation of DNA:RNA Hybrids around DNA Break Sites to Facilitate DNA Damage Repair

Poster Session 3

THURSDAY, MARCH 1

Noncoding RNAs in Disease

***Sohail F. Tavazoie**, Rockefeller University, USA

Stefanie Dimmeler, University of Frankfurt, Germany
Noncoding RNAs in Cardiovascular Diseases

Nadya Dimitrova, Yale University, USA
Investigation of Long Noncoding RNAs in Tumorigenesis

Caroline Woo, Translate Bio, USA
Targeting lncRNAs for Gene Upregulation Using Oligonucleotides as a Therapeutic Modality

Stefano Gustincich, Italian Institute of Technology, Italy
SINEUPS: A Versatile Tool to Increase Protein Synthesis

Ashish Lal, NCI, National Institutes of Health, USA
Short Talk: Regulating the Regulator: Long Noncoding RNAs in the p53 Network in Colorectal Cancer

Doug Hanniford, New York University Langone Medical Center, USA
Short Talk: CDR1as Arises from a lncRNA Transcript which Is Epigenetically Silenced to Drive Melanoma Metastasis

Unconventional RNA Form and Function

***Igor Ulitsky**, Weizmann Institute of Science, Israel

Jeremy E. Wilusz, University of Pennsylvania, USA
Controlling Circular RNA Levels

Lingling Chen, Shanghai Institutes for Biological Sciences, Chinese Academy of Sciences, China
Biogenesis of Circular RNAs

Antonio J. Giraldez, Yale University School of Medicine, USA
Noncoding RNAs and Peptides in Zebrafish Development

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

FRIDAY, MARCH 2

Departure