

RNA-Protein Interactions

Scientific Organizers:

Xiang-Dong Fu

Anne Ephrussi

Douglas L. Black

Sponsored by:

Cell Research

joint with the conference on

Long Noncoding RNAs: From Molecular Mechanism to Functional Genetics

Scientific Organizers:

Saba Valadkhan

Piero Carninci

Sponsored by:

Cell Research

Ionis Pharmaceuticals, Inc.

February 24–28, 2019

Whistler Conference Centre

Whistler, British Columbia, Canada

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on Molecular and Cellular Biology

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#KSrnaprotein

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#KSIncRNA

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Unless otherwise noted, the information in this book is current as of **February 5, 2019**. If you registered after this date, your name is included in an online list accessed from attendees' Keystone Symposia accounts.

Visit www.keystonesymposia.org/19X1 to view the **RNA-Protein Interactions** program.

Visit www.keystonesymposia.org/19X2 to view the **Long Noncoding RNAs** program.

February 24–28, 2019 | Whistler Conference Centre | Whistler, British Columbia | Canada

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KEYSTONE  SYMPOSIA™
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Keystone Symposia Policies

Harassment Policy

Keystone Symposia is committed to maintaining a positive and respectful environment at its conferences and other events. We expect participants in our events to engage in constructive and professional discussion, in which all are valued for their scientific contributions and work. We value diversity, and desire that no participant should be subjected to harassment while involved in our events.

For purposes of this policy, harassment means unwelcome and offensive comments or behavior directed to the participant's sex, race, color, national origin, religion, sexual orientation or gender identity, disability or other status protected under applicable law. Harassment can include, for example, unwelcome attention, comments or jokes that focus on gender differences or sexual topics and that distract from the professional topics under discussion, unwelcome advances or requests for dates or sexual activities, and the use of language or images that demean or degrade persons of particular gender, racial, ethnic, religious or national identity.

To this end, we expect all participants to support these values and to avoid harassment of others participating in our conferences and other events. We expect all attendees to assist in ensuring that Keystone Symposia events are free from harassment of any kind, including reporting any instances of harassment directly to Dr. Deborah Johnson, CEO, at debbiej@keystonesymposia.org and/or Dr. Thale Jarvis, CSO, at thalej@keystonesymposia.org. Anyone who has experienced harassment, or who has witnessed such behavior, should notify one of the above persons as soon as possible.

Persons who act contrary to these values and expectations may be warned or asked to leave the event in which the behavior occurred, may be excluded from access to Keystone Symposia conferences and/or other events, and/or may be subject to other disciplinary or corrective action, at the discretion of Keystone Symposia.

Privacy Policy

Keystone Symposia is committed to protecting the privacy of its website visitors and meeting attendees. Keystone Symposia collects personal information when individuals register for our meetings and upon a visitor's request to subscribe to newsletters and meeting announcements (both print and online). Information that our visitors and attendees provide or that is derived from internal website tracking is not sold, rented or shared with any third-party individual or organization. Once on our mailing lists, individuals always have the option of unsubscribing so that they no longer receive all or certain types of our communications.

By participating in a Keystone Symposia meeting, attendees acknowledge that their name and photograph may be published in a limited fashion in materials produced by Keystone Symposia. For example, to make the meeting a more valuable experience for all involved, attendee names and institutions are listed on our website in a secure section accessible only by attendees of the same meeting. Attendee names and institutions are also pre-populated in our secure mobile app, but attendees decide for themselves whether to enter further information in the app.

Attendee names and contact information are also listed in the meeting book. Except in the meeting book in this fashion, we will not disclose attendee contact information, even to other attendees. Photographs of meeting interactions taken by Keystone Symposia may occasionally be used in our marketing literature.

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No video equipment, cameras, audio equipment or any other type of recording device will be allowed in the meeting rooms or poster sessions. Occasionally, Keystone Symposia may use such devices for its own publicity purposes. While we do not prohibit laptop computers, cell phones and PDAs, they must not be used for recording and should be operated in "silent" mode out of consideration for speakers and other conference attendees.

Attendees will be required to wear name badges for access to meeting sessions. Due to problems we have encountered at some meetings, we will be performing random badge checks. Attendees without badges will be turned away from the session.

Please note that spouses traveling with registered conference attendees are not permitted inside the sessions unless they pay the registration fee. However, they are welcome to attend evening receptions. They may attend breakfasts upon payment of a nominal daily fee.

Media and Communications Policy

Keystone Symposia recognizes that presenters of scientific data may have reasons for not wanting early results reported to the general public prior to peer review. We also recognize, however, that raising society's level of science knowledge and awareness is essential for appropriate scientific input into public policy and decision-making by political leaders, which is in everyone's best interest. We therefore encourage and will try to facilitate interactions between the scientists attending our conferences and the media. We ask both to be understanding when considering each other's objectives and the overarching goal of raising science literacy worldwide.

If approached with sufficient advance notice, Keystone Symposia can provide assistance to journalists to contact our speakers and abstract authors directly. We can prearrange interviews with specific meeting organizers, speakers, authors or Keystone Symposia staff.

We ask that all writers attending a Keystone Symposia conference gain approval from a speaker or poster presenter prior to quoting or publishing that individual's scientific results. This policy applies whether you are a professional writer/journalist or a non-journalist blogging about the conference or otherwise sharing information among a group of individuals.

Audio, still photo and video recording by any device (e.g., cameras, laptops, PDAs, cell phones, watches) is strictly prohibited during the sessions, unless in certain circumstances when prior permission must be obtained from Keystone Symposia. Photographs taken by Keystone Symposia may be available on request.

Keystone Symposia welcomes members of the scientific and general media at our meetings. Due to the costs of providing meals and other facilities, payment of the regular registration fee is required. Keystone Symposia may be able to give some consideration to journalists from nonprofit organizations, as well as to journalists who wish to attend the meeting for just one day. Such inquiries and arrangements should be made in advance.

Keystone Symposia does not require our presenters to submit papers, nor do we record or transcribe our sessions. Speaker abstracts are available in the meeting book provided to each registrant. Meeting books are available after the meeting to non-attendees for a nominal fee.

Keystone Symposia provides a venue for scientists to come together and share their ideas with each other in a relaxed setting. While we wish to accommodate members of the press, we ask that all members of the media respect our mission and the freedom we allow our scientists to discuss their work in a protected and informal environment.

If you have questions about this policy, contact Yvonne Psaila, Director of Marketing and Communications, yvonnep@keystonesymposia.org, 1.970.262.2676.

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Keystone Symposia provides financial and in-kind donors with the ability to display a limited amount of literature or small promotional items on a table near the registration desk at Keystone Symposia meetings. Financial donors at certain levels can also insert literature into delegate bags at the specific meeting(s) they have chosen to support. Literature placed by organizations that are not current supporters will be removed until the meeting participant who placed it can be contacted.

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Yvonne Psaila, Director of Marketing and Communications
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Nonprofit, academic and government institutions may post a flyer about grant and job opportunities or upcoming events of interest on the bulletin board in the registration area, and job postings can also be placed on the meeting mobile app. Please see a Keystone Symposia on-site representative if you need help with this or have questions while at the conference.



Dear Conference Participant:

It is a pleasure to welcome you to this meeting in the 2018-2019 Keystone Symposia conference series. This year, Keystone Symposia will convene 59 conferences in sites around the world, including North America, Europe, Africa, and Asia, where we will have our very first conferences in South Korea and Taiwan. On behalf of the Keystone Symposia Board, thank you for joining us and bringing your exciting insights to enrich these scientific exchanges. We hope that this conference meets or surpasses your expectations and helps refresh your important work that will accelerate discovery in the life sciences.

2018 was a year of change in the Keystone Symposia organization. We are pleased and excited to welcome our new CEO, Dr. Deborah Johnson. Dr. Johnson comes to us from the Baylor College of Medicine, where she was Professor in the Department of Molecular and Cellular Biology. Prior to these appointments, she worked at the Keck School of Medicine at the University of Southern California. Her research has focused on mechanisms for transcription regulation and its deregulation in cancer. At both institutions she served with distinction in leadership positions to support graduate education. With Debbie's arrival, we have also marked the departure of our former CEO, Dr. Jane Peterson. We appreciate her capable and thoughtful stewardship and wish her well in her retirement.

2019 marks my last one as chair and a member of the board. It has been a true pleasure and honor to serve on the board for nine years and as board chair for the last three years. Thank you for the privilege. Keystone Symposia is an organization directed by and for the scientific community. Because of you and all participants who have given generously of their time to engage with Keystone Symposia, there is really no community quite like it. Best of luck and have a productive and enjoyable meeting!

Sincerely,

A handwritten signature in dark ink, appearing to read "G. Nabel".

Gary J. Nabel, MD, PhD
Chief Scientific Officer, Sanofi
Chair of the Board, Keystone Symposia



Dear Conference Participant:

I am delighted to join Keystone Symposia as CEO and am excited to take on this new role. Based on my own experience and that of so many of my colleagues, I have come to regard Keystone Symposia as the premier organization for scientific meetings in the biological and biomedical sciences. Much of its success can be attributed to the passion and commitment of the staff and our Board. I look forward to partnering with them to take the organization to the next level of achievement.

During the 2018-2019 conference season, I also look forward to meeting many of the investigators such as yourself who make the Keystone Symposia conferences the highly interactive, stimulating venues for which they have developed worldwide renown. We greatly appreciate your feedback and ask that you please fill out our survey that you will be receiving. In addition, if you have an idea for a conference topic, I encourage you to submit it online at www.keystonesymposia.org/proposal. We are continually seeking to broaden our conference portfolio to encompass the latest and most cutting-edge topics in the biomedical and life sciences.

I would like to thank the corporate, foundation, government and individual donors who help fund the conference series, and in particular make possible many of the scholarships and travel awards we offer for deserving early-career investigators. We are enormously indebted to these valued partners without whom the conferences would not be nearly as viable. And lastly, I would like to thank all of you for attending. We deeply value the rich, cross-disciplinary exchange that results from such diverse participation from the academic, corporate and government/nonprofit sectors.

Sincerely,

A handwritten signature in dark ink, appearing to read "Deborah Johnson".

Deborah L. Johnson, PhD
President and CEO, Keystone Symposia

RNA-Protein Interactions

Scientific Organizers:

Xiang-Dong Fu
Anne Ephrussi
Douglas L. Black

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Recent evidence suggests that the human genome encodes about 1500 RNA-binding proteins (RBPs), and that this number may further increase by identifying additional RBPs that do not contain canonical RNA binding motifs. These proteins control gene expression at transcriptional and post-transcriptional levels in development and disease. As mutations in many RBPs have been linked to human diseases, various RBPs and their regulated events may be potential drug targets. This conference will address some long-standing problems as well as emerging paradigms in this field. In particular, the conference brings together leaders in RNA research to: 1) Brainstorm around novel concepts; 2) Share new technology developments; and 3) Explore new disease mechanisms. This conference is highly mechanism-oriented, rather than centering on a specific biological process or disease theme, which will bring together scientists across multiple fields. Since individual regulatory RNAs must enlist specific RBPs to execute their biological functions, coupling the conference with “Long Noncoding RNAs: From Molecular Mechanism to Functional Genetics” will thus present a cohesive theme focused on RNA biology and medicine.

Long Noncoding RNAs: From Molecular Mechanism to Functional Genetics

Scientific Organizers:

Saba Valadkhan
Piero Carninci

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Although emerging evidence points to the critical importance of the long noncoding transcriptome in human physiology and pathology, the clinical potential of long noncoding RNAs (lncRNAs) as therapeutic and prognostic targets remains largely unexplored. The increasing availability of high-throughput technologies and newly developed computational methodologies are rapidly making it possible to address this gap in our knowledge. However, optimal use of these new capabilities and recognition of their power in transforming the field of lncRNA research require the formation of new collaborative and training efforts. This conference specifically aims to: 1) Communicate the latest available technologies and developing methodologies for lncRNA functional genetics to the lncRNA community; 2) Bridge the already thriving lncRNA mechanistic and basic research to the clinical need for novel, effective diagnostic, prognostic and therapeutic targets; 3) Highlight and promote the emerging feasibility of performing lncRNA functional genetics; and 4) Stimulate the formation of new collaborative efforts that will accelerate the integration of the lncRNA research into the existing body of biological knowledge.

SUNDAY, FEBRUARY 24

16:00–20:00	Grand Foyer	Arrival and Registration
18:00–20:00	Grand Foyer	Welcome Mixer

MONDAY, FEBRUARY 25

07:00–08:00	Sea to Sky A	Breakfast
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08:00–09:30 Sea to Sky B/C**Welcome and Keynote Session (Joint)**

* **Douglas L. Black**, University of California, Los Angeles, USA
 * **Anne Ephrussi**, European Molecular Biology Laboratory, Germany
 * **Saba Valadkhan**, Case Western Reserve University, USA
 * **Piero Carninci**, RIKEN Center for Integrative Medical Sciences, Japan
Jennifer A. Doudna, HHMI/University of California, Berkeley, USA
New Genome Editors and Inhibitors from the CRISPR Family Tree
John S. Mattick, University of Oxford, UK
The New World of RNA Biology

Coffee Break

09:50–12:30 Sea to Sky B/C**Functional RNA Elements in Mammalian Genomes (Joint)**

* **Danesh Moazed**, Harvard Medical School, USA
 * **Howard Y. Chang**, Stanford University, USA
Xiang-Dong Fu, University of California, San Diego, USA
Broad Roles of RNA-Binding Proteins in Regulated Gene Expression
Thomas R. Cech, HHMI/University of Colorado, USA
RNA-Protein Interactions Regulate Epigenetic Silencing
Chris B. Burge, Massachusetts Institute of Technology, USA
Patterns in the Recognition of RNAs by RBPs
Maiwen Caudron-Herger, German Cancer Research Center, Germany (X1 1008)
Short Talk: Proteome-Wide and Quantitative Identification of RNA-Dependent Protein Complexes
Mario A. Flores, NCBI, National Institutes of Health, USA (X2 2001)
Short Talk: Dissecting the Characteristics and Functions of Transcribed Enhancers
Yoav Lubelsky, Weizmann Institute of Science, Israel (X1 2014)
Short Talk: Elucidating the Crosstalk between hnRNP Binding and Nuclear Retention of Long RNAs
Yoko Matsuno, Niigata University, Japan (X2 2030)
Short Talk: Characteristic Convergent Variation in LINE-1 Nucleotides Can Benefit Redundantly Forming Triplexes with lncRNA in Mammalian X-Chromosome Inactivation

On Own for Lunch

12:30–13:00	Sea to Sky A	Poster Setup
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All abstracts are now available on your Keystone Symposia online account or our meeting mobile app at apps.eventmobi.com/ks. Full talk speaker abstracts are in the "Speaker Abstracts" section, and short talk speaker abstracts are in the "Poster Abstracts" section (poster abstract number is shown in parentheses in the program above).

MONDAY, FEBRUARY 25 (continued)

13:00–22:00 Sea to Sky A Poster Viewing

14:30–16:30 Sea to Sky B

Workshop 1: New RNA Technologies (RNA-Protein Interactions)

Daniel Benhalevy, National Institutes of Health, USA (X1 1002)
Proximity-CLIP Provides a Snapshot of Protein-Occupied RNA Elements in Sub-Cellular Compartments

***Kevin Drew**, University of Texas at Austin, USA (X1 1015)
Systematic Discovery of Endogenous Human Ribonucleoprotein Complexes

Hong Han, University of Toronto, Canada (X1 1022)
An Integrated High-Throughput Chemical Screening Platform for RNA Splicing Modulators

Sudhakar Jha, National University of Singapore, Singapore (X1 2003)
Utilization of a Novel Technique to Identify RNA-Binding Proteins

Jakob Trendel, European Molecular Biology Laboratory, Germany (X1 3013)
Protein Half-Lives on RNA Reveal Human Ribosome Maintenance Independent of Ribosome Biogenesis

Marta Gabryelska, University of Edinburgh, UK (X1 1019)
Probing Ribosome Assembly Dynamics with CLASH

***Alena Shkumatava**, Institut Curie-Centre de Recherche, France (X1 3006)
Systematic Identification and Quantitative Measurement of RNA-Protein Interactions by incPRINT

14:30–16:30 Sea to Sky C

Workshop 1: lncRNAs: Diversity of Function (Long Noncoding RNAs)

***Lingling Chen**, Shanghai Institutes for Biological Sciences, Chinese Academy of Sciences, China

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

Thomas Brodnicki, St Vincent's Institute, Australia (X2 1013)
A Long Noncoding RNA Attenuates Dendritic Cell Function and Decreases Autoimmune Disease Susceptibility

Ousman Tamgue, University of Douala, Cameroon and University of Cape Town, IDM, South Africa (X2 3019)
Long Non-Coding RNA-26 Promotes Intracellular Mycobacterium tuberculosis Growth through Inhibition of Pro-Inflammatory Genes Expression and Macrophage Activation

Fabio Desideri, Sapienza University of Rome, Italy (X2 1027)
Charme Long Noncoding RNA Shapes the 3D Nuclear Structure by its Close Cooperation with Chromatin

Marine Gautier, IPMC – CNRS UMR 7275, France (X2 2006)
Functional Characterization of Hypoxia-Regulated lncRNAs in Non-Small Cell Lung Carcinomas

Paras Sehgal, Institute of Genomics and Integrative Biology, India (X2 3013)
Regulation of Diacyl Glycerol-Mediated Protein Kinase C-Beta Activation by Vascular Endothelial-Associated Long Noncoding RNA 2 Modulates Endothelial Permeability

Roberto Vendramin, VIB-KU Leuven, Belgium (X2 3025)
SAMMSON Fosters Cancer Cell Fitness by Concertedly Enhancing Mitochondrial and Cytosolic Translation

Tan Phat Pham, Amsterdam UMC, Netherlands (X2 3004)
The Age and Shear Regulated Long Non-Coding RNA Aerie Controls Endothelial Cell Function

Laura Stanicek, Amsterdam UMC, Netherlands (X2 3016)
The Shear Stress-Induced Long Non-Coding RNA LASSIE as a Regulator of Endothelial Cell Junctions

MONDAY, FEBRUARY 25 (continued)

16:30–17:00	Grand Foyer	Coffee Available
17:00–19:00	Sea to Sky B	<p>RNP in Phase Transition (RNA-Protein Interactions)</p> <p>*Kristen W. Lynch, University of Pennsylvania, USA Kathrin Plath, University of California, Los Angeles, USA <i>A New Mode of Xist Action</i></p> <p>Roy R. Parker, HHMI/University of Colorado, USA <i>RNP Granules in Health and Disease</i></p> <p>Kimberly L. Mowry, Brown University, USA <i>Large RNP Transport Granules Drive mRNA Localization</i></p> <p>Joseph Lobel, University of California, San Francisco, USA (X1 2013) <i>Short Talk: Pat1 Activates Late Steps in mRNA Decay by Multiple Mechanisms</i></p> <p>Xiong Ji, Peking University, China (X1 2004) <i>Short Talk: RNAPII Condensates Connect Genome Organization and Gene Regulation</i></p>
17:00–19:00	Sea to Sky C	<p>lncRNAs, Transposons and Evolution of the Genome (Long Noncoding RNAs)</p> <p>*John L. Rinn, University of Colorado Boulder, USA Igor Ulitsky, Weizmann Institute of Science, Israel <i>Functions, Modes of Action and Localization of Long Noncoding RNAs in Mammalian Cells</i></p> <p>Lynne E. Maquat, University of Rochester Medical Center, USA <i>Role of Retrotransposon Elements within Cellular RNAs</i></p> <p>Paulo P. Amaral, University of Cambridge, UK <i>Defining the Landscape of Covalent Modifications in Conserved Noncoding RNAs using Direct-RNA Sequencing</i></p> <p>Paolo Gandellini, Fondazione IRCCS Istituto Nazionale dei Tumori, Italy (X2 2005) <i>Short Talk: LEADeR Role of miR-205 Host Gene as Long Non-Coding RNA in Prostate Basal Cell Differentiation</i></p> <p>Giovanni Pascarella, RIKEN CLST Yokohama Institute, Japan (X2 3038) <i>Short Talk: Somatic Retrotransposons-Associated Structural Variants in Health and Neurodegeneration</i></p>
19:00–20:00	Sea to Sky A	Social Hour with Lite Bites
19:30–22:00	Sea to Sky A	<p>Poster Session 1</p> <p><i>Poster sessions provide exciting opportunities for engagement between all levels of investigators. Abstracts beginning with the number 1 are featured during this poster session.</i></p>

TUESDAY, FEBRUARY 26

07:00–08:00 Sea to Sky A Breakfast

08:00–11:30 **Sea to Sky B/C**

Coding and Noncoding RNAs on Chromatin (Joint)

***Kathrin Plath**, University of California, Los Angeles, USA

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

Danesh Moazed, Harvard Medical School, USA

RNAi in Chromatin Remodeling

Yijun Ruan, University of Connecticut, USA

Protein-RNA-Chromatin Interactions

Coffee Break

Jeannie T. Lee, Massachusetts General Hospital, USA

Xist RNA Antagonizes the Chromatin Remodeler, BRG1, on the Inactive X Chromosome

Valerio Orlando, King Abdullah University of Science and Technology, Saudi Arabia

RNAi Component Ago1 Interacts with lncRNAs to Regulate Nuclear Architecture and Cell Differentiation

Ryan Alexander Flynn, Stanford University, USA (X1 1018)

Short Talk: DNA-PK Leverages Non-Coding RNA Binding to Regulate Nucleolar Functions

Riki Kurokawa, Saitama Medical University, Japan (X1 2008)

Short Talk: Arginine Methylation of RNA Binding Protein TLS Inhibits Binding to Long Noncoding RNA, Repressing the Histone

Acetyltransferase Activity

Saigopal Somasundaram, Case Western Reserve University, USA (X2 3015)

Short Talk: The DNMT1-Associated lincRNA DACOR1 Reprograms Genome-Wide DNA Methylation in Colon Cancer

Eric James de Bony de Lavergne, Ghent University, Belgium (X2 1023)

Short Talk: NESPR Long Non-Coding RNA, a New Neuroblastoma-Specific Oncogene

On Own for Lunch

11:30–13:00 Sea to Sky A

Poster Setup

13:00–22:00 Sea to Sky A

Poster Viewing

16:30–17:00 Grand Foyer

Coffee Available

17:00–19:00 **Sea to Sky B**

Dissecting RNP Functions *in vivo* (RNA-Protein Interactions)

***V. Narry Kim**, Institute for Basic Science, South Korea

Joan A. Steitz, Yale University, USA

Target-Directed miRNA Decay: Yet Another Function of Ago Proteins

Susan L. Ackerman, University of California, San Diego, USA

tRNAs and Neuron Function

Kristen W. Lynch, University of Pennsylvania, USA

CELF2 Regulation of Splicing and Polyadenylation in Activated T Cells

Danielle Widner, Yale University, USA (X1 3018)

Short Talk: RNA-Protein Complex Formation in a Mysterious Large ncRNA

Qingqing Wang, University of California, Berkeley, USA (X1 3016)

Short Talk: Deciphering the Splicing Code of Coordinated RNA-Binding Proteins PSI and hrp48 in Sculpting the Drosophila Transcriptome

TUESDAY, FEBRUARY 26 (continued)

17:00–19:00	Sea to Sky C	Regulation of Differentiation and Development by lncRNAs (Long Noncoding RNAs) * Lynne E. Maquat , University of Rochester Medical Center, USA Saba Valadkhan , Case Western Reserve University, USA <i>Regulation of Cellular Quiescence by lncRNAs</i> Joshua T. Mendell , HHMI/University of Texas Southwestern Medical Center, USA <i>lncRNAs in Mammalian Physiology and Disease</i> Susan B. Carpenter , University of California, Santa Cruz, USA <i>Genetic Models Reveal cis and trans Immune-Regulatory Activities for lincRNA-Cox2</i> Gaultier Hericher , Université Laval – CRCHU de Québec, Canada (X2 2013) <i>Short Talk: Novel Tuna Isoforms Define the Pluripotent Stem Cell State</i> Varune Rohan Ramnarine , University of British Columbia, Canada (X2 3007) <i>Short Talk: The Long Noncoding RNA Landscape of Neuroendocrine Prostate Cancer and its Clinical Implications</i>
19:00–20:00	Sea to Sky A	Social Hour with Lite Bites
19:30–22:00	Sea to Sky A	Poster Session 2 <i>Poster sessions provide exciting opportunities for engagement between all levels of investigators. Abstracts beginning with the number 2 are featured during this poster session.</i>

WEDNESDAY, FEBRUARY 27

07:00–08:00 Sea to Sky A

Breakfast

08:00–11:15 **Sea to Sky B**

RNA Transport and Localization (RNA-Protein Interactions)

***Erik Sontheimer**, University of Massachusetts Medical School, USA

***Kimberly L. Mowry**, Brown University, USA

Anne Ephrussi, European Molecular Biology Laboratory, Germany
Motor-Mediated RNA Transport and Localization

Robert H. Singer, Albert Einstein College of Medicine, USA
Neuronal Targets for RNA-Binding Proteins

Coffee Break

Dierk Niessing, Ulm University, Germany

Molecular Architecture and Dynamics of mRNA Transport Complexes

Anob Chakrabarti, Francis Crick Institute, UK (X1 1009)

Short Talk: Exploring the Characteristics and Functions of RNA Secondary Structures Bound in vivo by Staufeu

Hong Cheng, Institute of Biochemistry and Cell Biology, SIBS, CAS, China (X1 1012)

Short Talk: NRDE2 Negatively Regulates Nuclear Exosome Functions and Controls Embryonic Stem Cell Self-Renewal

Mehdi Pirouz, Boston Children's Hospital, USA (X1 2022)

Short Talk: The Perlman Syndrome Dis3l2 Exonuclease as Guardian of ER-associated Translation

Dhara Patel, Université de Montréal, Canada (X1 2020)

Short Talk: Complementary 3'UTRs Derived from Overlapping Genes Can Promote Cytoplasmic Co-Localization of Distinct mRNAs

Jernej Murn, University of California, Riverside, USA (X1 2016)

Short Talk: Transcriptional Control of Neuronal Differentiation by an RNA-Binding Protein

08:00–11:15 **Sea to Sky C**

lncRNAs in Disease: Tools for Discovery (Long Noncoding RNAs)

***Fabrizio d'Adda di Fagagna**, IFOM,

The FIRC Institute of Molecular Oncology, Italy

Piero Carninci, RIKEN Center for Integrative Medical Sciences, Japan
Functional Genomics of lncRNAs

Joakim Lundeberg, KTH-Royal Institute of Technology, Sweden
Spatial Transcriptome Analysis and Disease

Coffee Break

Nicholas J. Proudfoot, University of Oxford, UK

Different Mechanisms Define lncRNA and Protein-Coding Gene Transcription Units in Mammalian Cells

Jin Chen, University of California, San Francisco, USA

Systematic Discovery of Novel Peptides from the Noncanonical Translation of Non-Coding Regions

Per Johnsson, Karolinska Institutet, Sweden (X2 2018)

Short Talk: Functional Prediction and Validation of lncRNAs using Allele-Sensitive Single-Cell RNA-Sequencing

Lydia M. Contreras, University of Texas at Austin, USA (X2 1019)

Short Talk: Novel High-Throughput Tools for in vivo Functional Characterization of Regulatory RNAs

Bojan Losic, Icahn School of Medicine at Sinai, USA (X2 2027)

Short Talk: Circular RNA Mediate IBD Genetic Risk

WEDNESDAY, FEBRUARY 27 (continued)

		On Own for Lunch
11:15–13:00	Sea to Sky A	Poster Setup
13:00–22:00	Sea to Sky A	Poster Viewing
16:30–17:00	Grand Foyer	Coffee Available
17:00–19:00	Sea to Sky B	Structure and Function of RBPs (RNA-Protein Interactions)
		*Rui Zhao , University of Colorado, USA
		Douglas L. Black , University of California, Los Angeles, USA <i>Splicing Activation by Rbfox Requires Self-Aggregation of its Tyrosine-Rich Domain</i>
		Frédéric H.T. Allain , ETH Zurich, Switzerland <i>Interaction of U1snRNP with Drugs and RNA-Binding Proteins in Splicing Regulation</i>
		Traci M.T. Hall , NIEHS, National Institutes of Health, USA <i>Collaborative RNA Recognition Specificity by PUF Proteins</i>
		Andreas Schlundt , Goethe University Frankfurt, Germany (X1 3002) <i>Short Talk: The Individual Contributions of Single IMP3 RNA-Binding Domains to the Recognition of Clustered Sequences in Target mRNAs</i>
		Janosch Hennig , European Molecular Biology Laboratory Heidelberg, Germany (X1 1023) <i>Short Talk: Structural Insights into MLE-Unr-roX2 Complex Assembly during Early Steps of Drosophila Dosage Compensation</i>
17:00–19:00	Sea to Sky C	Novel Insights into Functional Mechanism of lncRNAs (Long Noncoding RNAs)
		*Joshua T. Mendell , HHMI/University of Texas Southwestern Medical Center, USA
		Howard Y. Chang , Stanford University, USA <i>Genome Regulation by Long Noncoding RNAs</i>
		Michael G. Rosenfeld , HHMI/University of California, San Diego, USA <i>eRNAs Mediate Phase Separation of Ligand-Activated Enhancers to License Cooperative Chromosomal Enhancer Assembly</i>
		John L. Rinn , University of Colorado Boulder, USA <i>The Firre Locus Produces a Trans-Acting RNA Molecule that Functions in Hematopoiesis</i>
		Kaveh Daneshvar , Harvard Medical School, MGH, USA (X2 1021) <i>Short Talk: lncRNA DIGIT and BRD3 Protein Form Phase-Separated Condensates and Regulate Endoderm Differentiation.</i>
		Karan Joshua Abraham , University of Toronto, Canada (X2 1001) <i>Short Talk: Intergenic Non-Coding RNA-DNA Hybrids Maintain Nucleolar Biomolecular Condensates and Ribosome Biogenesis</i>
19:00–20:00	Sea to Sky A	Social Hour with Lite Bites
19:30–22:00	Sea to Sky A	Poster Session 3
		<i>Poster sessions provide exciting opportunities for engagement between all levels of investigators. Abstracts beginning with the number 3 are featured during this poster session.</i>

THURSDAY, FEBRUARY 28

07:00–08:00 Sea to Sky A

Breakfast

08:00–11:15 **Sea to Sky B**

RNP Machines and Regulation (RNA-Protein Interactions)

***Eric Lecuyer**, Institut de Recherches Cliniques de Montréal, Canada Joint Institute, Canada

V. Narry Kim, Institute for Basic Science, South Korea
The Barricade Complex as A Rate-Limiting Blockade against mRNA Deadenylation

Rui Zhao, University of Colorado, USA
Structure and Function of the Spliceosome

Coffee Break

Yanli Wang, Institute of Biophysics, Chinese Academy of Sciences, China
CRISPR-Cas Mediated Cleavage of Invading RNAs

Erik Sontheimer, University of Massachusetts Medical School, USA
Enhancing Genome Editing with New Cas9s and Fully Stabilized Guides

Huating Wang, Chinese University of Hong Kong, China (X1 3015)
Short Talk: MyoD-Induced Enhancer RNA Interacts with hnRNPL Protein via CAAA Motif to Activate Target Gene Transcription during Myogenic Differentiation

Simone Hoefler, Leibniz University Hanover, Germany (X1 1024)
Short Talk: Structural and Functional Dissection of Eukaryotic snoRNP Complexes Catalyzing rRNA 2'-O-Ribose Methylations

Jiarui Song, Texas A&M University, USA (X1 3008)
Short Talk: A Novel Plant-Specific Structural Element within the Arabidopsis Telomerase RNA

THURSDAY, FEBRUARY 28 (continued)

08:00–11:30

Sea to Sky C

lncRNAs: Diversity in Form and Function (Long Noncoding RNAs)

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

Karissa Y. Sanbonmatsu, Los Alamos National Laboratory, USA
Two-Dimensional and Three-Dimensional Structure-Function Relationships for Individual Long Noncoding RNAs

Jay W. Shin, RIKEN Yokohama, Japan

Functional Elucidation of Long Non-Coding RNAs

Coffee Break

Lingling Chen, Shanghai Institutes for Biological Sciences, Chinese Academy of Sciences, China
lncRNAs of Novel Origin

Xiao Liu, Yale University, USA (X2 2026)

Short Talk: A ncRNA Derived from xbp-1 mRNA Cleavage Promotes Axon Regeneration

Yoo Jane Han, University of Chicago, USA (X2 2012)

Short Talk: Circular RNAs Expressed from the BRCA1 Pseudogene Regulates Antiviral Immune Signaling in Breast Cancer Cells

Prasanth Kannanganattu, UIUC, USA (X2 2020)

Short Talk: Nucleolus-Enriched Repeat-Containing Noncoding RNA Regulates rDNA Transcription

Filipp Frank, Emory University, USA (X2 2037)

Short Talk: SHAPE-MaP Identifies Two Structural Modules with Distinct Function in the lncRNA Growth Arrest Specific 5 (Gas5)

Haobo Li, Massachusetts General Hospital, USA (X2 3036)

Short Talk: Inhibition of Novel Long Noncoding RNA lncExACT1 Induces Physiological Cardiac Hypertrophy

Fu-Kai Hsieh, Massachusetts General Hospital, USA (X2 2039)

Short Talk: The lncRNA HERVH Negatively Regulates Chromatin Targeting and Remodeling Mediated by CHD7

On Own for Lunch

THURSDAY, FEBRUARY 28 (continued)

14:30–16:30

Sea to Sky B

Workshop 2: RNA Modifications and Regulated RNA Processing (RNA-Protein Interactions)

Erin K. Borchardt, Yale University, USA (X1 1003)

Investigating RNA Pseudouridylation Patterns in Viral Infection

Marisa J. L. Aitken, MD Anderson Cancer Center, USA (X1 1026)

hnRNP K Overexpression Drives Myeloid Malignancy via Interaction with RUNX1

Alexander M. Price, , USA (X1 2024)

Adenovirus Co-opts Cellular m6A Modification Machinery to Facilitate Viral RNA Splicing and Protein Production

***Ramesh S. Pillai**, University of Geneva, Switzerland (X1 2021)

RNA Modifications and Regulation of Gene Expression

Sushant Bangru, University of Illinois, Urbana-Champaign, USA (X1 1001)

Temporal Control of ESRP2 Licenses Fetal-to-Adult Switch in Alternative Splicing Required for Hepatocyte Maturation

***Bobby Hogg**, National Heart, Lung, and Blood Institute, USA (X1 1025)

hnRNP L-Dependent Protection of Normal mRNAs from NMD Subverts Quality Control in B Cell Lymphoma

Eleonora D'Ambra, Sapienza University of Rome, Italy (X1 1014)

Study of FUS-Dependent circRNAs Function and Localization in Murine Motor Neurons

Xiao Song, Northwestern University Feinberg School of Medicine, USA (X1 3009)

SRSF3 Promotes Glioblastoma Progression Via Splicing Regulation of Alternative Exons

14:30–16:30

Sea to Sky C

Workshop 2: Mechanistic Diversity of lncRNA (Long Noncoding RNAs)

*** Jay W. Shin**, RIKEN Yokohama, Japan

***Paulo P. Amaral**, University of Cambridge, UK

Gabrijela Dumbovic, University of Colorado Boulder, USA (X2 1032)

The Tug1 lncRNA Locus Is Essential for Male Fertility and Harbors a Tripartite DNA, lncRNA and Protein Functionality

Karen Wing Yee Yuen, University of Hong Kong, Hong Kong (X2 3033)

Point Centromere Activity Requires an Optimal Level of Centromeric Non-Coding RNA

Jin-Wu Nam, Hanyang University, South Korea (X2 2033)

En Bloc and Segmental Deletions of Human XIST Reveal X Chromosome Inactivation-Involving RNA Elements

Eddie Grinman, The Scripps Research Institute – Florida, USA (X2 2010)

Investigating the Role of a Synaptically Targeted Intronic lncRNA in Memory Storage

Rotem Ben Tov Perry, Weizmann Institute of Science, Israel (X2 3003)

Regulation of Neuroregeneration by Long Noncoding RNAs

Qing Lyu, University of Rochester, USA (X2 2028)

B2M RNA Facilitates HSV-1 Gene Expression via Interacting with ASH2L and VP16

Karoline Kragh Ebbesen, Aarhus University, Denmark (X2 1033)

Unraveling the Biogenesis and Function of the Circular RNA ciRS-7

THURSDAY, FEBRUARY 28 (continued)

16:30–17:00	Grand Foyer	Coffee Available
17:00–18:45	Sea to Sky B/C	RNA and RBP in Disease (Joint) * Susan L. Ackerman , University of California, San Diego, USA * Joakim Lundeberg , KTH-Royal Institute of Technology, Sweden Fabrizio d’Adda di Fagagna , IFOM, The FIRC Institute of Molecular Oncology, Italy <i>Sequence-Specific Inhibition of Noncoding RNA Generated at Dysfunctional Telomeres Improves Progeric Phenotypes and Extends Lifespan in two Animal Species</i> Mofang Liu , Shanghai Institutes of Biological Sciences, Chinese Academy of Sciences, China <i>A Novel Function of MIWI/piRNA in Activating Translation of Spermiogenic mRNAs during Spermiogenesis</i> Frank W. Rigo , Ionis Pharmaceuticals, USA <i>Targeting RNA with Antisense Oligonucleotides to Treat Disease</i>
18:45–19:00	Sea to Sky B/C	Meeting Wrap-Up: Outcomes and Future Directions (Joint) * Xiang-Dong Fu , University of California, San Diego, USA * Saba Valadkhan , Case Western Reserve University, USA * Piero Carninci , RIKEN Center for Integrative Medical Sciences, Japan
19:00–20:00	Sea to Sky A	Social Hour with Lite Bites
20:00–23:00	Sea to Sky A	Entertainment
FRIDAY, MARCH 1		Departure

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Jiayu Chen, University of California, San Diego, USA

Leah Plasek, Case Western Reserve University, USA

Meet the Scientific Organizers (RNA-Protein Interactions)

Xiang-Dong Fu, PhD is Professor of Cellular and Molecular Medicine at the University of California, San Diego, USA. He received his BS degree in Virology from Wuhan University in 1982. As a member of the first class of the CUSBEA (China-United States Biochemistry Examination and Application) program to enter the US for graduate training, he did his graduate work with Dr. Jonathan Lis on retroviral replication and received his PhD degree in Biochemistry from Case Western Reserve University in 1988. He subsequently joined the lab of Dr. Tom Maniatis for postdoctoral training on pre-mRNA splicing at Harvard in 1988. In 1992, he joined the faculty of the University of California, San Diego and rose through the ranks (Assistant Professor, 1992-1998; Associate Professor with tenure, 1998-2002; and Full Professor, 2002-present). He became a Distinguished Professor of Cellular and Molecular Medicine in 2018 at UC San Diego.



During his academic career, Dr. Fu has made four sets of key discoveries: (1) He used partially purified spliceosome to raise a large panel of monoclonal antibodies, which led to the discovery of the first non-snRNP splicing factor SC35, a founding of the SR family of splicing regulators. He conducted a large body of functional and mechanistic studies on SR proteins, revealing their central roles in key developmental and disease processes by committing pre-mRNA to the splicing pathway and regulating alternative splicing in a dosage-dependent and position-sensitive manner. (2) His group was also responsible for the discovery of the SRPK family of splicing kinases highly specific for SR proteins and elucidated a dedicated signaling pathway via these kinases to transduce growth factor signaling to the nucleus to regulate alternative splicing. (3) He pioneered studies on cell fate switches mediated by regulatory RNAs and RNA binding proteins and elucidated an RNA program necessary and sufficient to trans-differentiate fibroblasts into functional neurons. (4) Using the newly developed neuronal conversion strategy, he directly converted astrocytes into functional neurons in the brain and demonstrated that those newly converted neurons are functionally integrated into the existing neuronal circuitry. On a chemical-induced Parkinson's disease mouse model, he demonstrated that such trans-differentiated neurons are able to reconstitute the nigrostriatal dopamine pathway, thereby completely eradicating the Parkinson's Disease phenotype. These findings suggest a new and general strategy to combat various forms of neurodegenerative disease.

Dr. Fu's contributions to biomedical research have been honored by selection as a Searle Scholar (1994), Leukemia and Lymphoma Society Scholar (1997), Distinguished Alumnus of Wuhan University (2003), and election to AAAS Fellow (2010). In addition, he is the recipient of the Prostate Cancer Foundation Challenge Award (2008) and the Ray Wu Society Award (2016).



Anne Ephrussi, PhD is Group Leader and Head of the Developmental Biology Unit at the European Molecular Biology Laboratory (EMBL) in Heidelberg, Germany, as well as Head of the EMBL International Center for Advanced Training. Dr. Ephrussi obtained her PhD in Biology from the Massachusetts Institute of Technology (MIT) in 1985 and carried out her postdoctoral studies at Harvard and at the Whitehead Institute (MIT). Combining genetics, cell biology and biochemistry, her research is focused on understanding how RNA molecules are transported, localized and translationally controlled within the cytoplasm of eukaryotic cells for proper cell function. As her main model, she uses the *Drosophila* oocyte, in which mRNA localization and localized translation underlie patterning of the future embryo. Dr. Ephrussi is an elected member of the European Molecular Biology Organization (EMBO), Academia Europaea and the French Academy of Sciences

Douglas L. Black, PhD is Professor and Vice Chair of the Department of Microbiology, Immunology and Molecular Genetics at the University of California, Los Angeles (UCLA) and UCLA's David Geffen School of Medicine. He earned his BA in Chemistry at the University of California, Santa Cruz and his PhD in Molecular Biophysics and Biochemistry from Yale University. He did postdoctoral work at the Whitehead Institute for Biomedical Research and MIT, before starting his faculty position at UCLA in 1992. Dr. Black is an RNA biologist who studies the mechanisms that regulate alternative pre-mRNA splicing in mammalian cells and the role of post-transcriptional gene regulation in neuronal development and other cellular processes.



Meet the Scientific Organizers (Long Noncoding RNAs)

Saba Valadkhan, MD, PhD attended medical school at the Iran University of Medical Sciences followed by graduate school at Columbia University, New York, where she studied the role of small nuclear RNAs in the human spliceosome under the supervision of Professor James Manley. After finishing her PhD, she joined the faculty at Case Western Reserve University in Cleveland, Ohio, and was named a Searle Scholar the same year. She has won several national and international awards including the 2005 Young Scientist Award from the American Association for Advancement of Science (AAAS) and the Harold Weintraub award. Dr. Valadkhan became a founding member of the Rosalind Franklin Society in 2006. During her career, she has studied diverse aspects of the function of cellular noncoding RNAs from snRNAs to long noncoding RNAs in mammalian systems using a variety of biochemical, cell biology and computational approaches.



Piero Carninci, PhD is Deputy Director of the RIKEN Center for Integrative Medicine Sciences in Yokohama, Japan. Born and educated in Italy, he obtained his doctoral degree at the University of Trieste in 1989. From 1990 to 1995, he developed technologies for DNA extraction and DNA sequencing at Talent, a biotech spin-off.

Dr. Carninci moved to Japan in 1995 to join RIKEN and became a tenured researcher in 1997. He has developed technologies for transcriptome analysis, the cap-trapper and the CAGE, which have been broadly used in the RIKEN FANTOM projects and allow identifying noncoding RNAs as the major output of the mammalian genome, providing comprehensive maps of the mammalian promoters.

He was appointed Deputy Director of the RIKEN Center for Integrative Medical Sciences in 2018. He has published more than 320 papers and book chapters, edited books and is a member of the editorial boards of various scientific journals.

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- General conference program support

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X1 Poster Abstract Index

RNA-Protein Interactions

Poster Session 1: Monday, February 25
Poster Session 2: Tuesday, February 26
Poster Session 3: Wednesday, February 27

Poster Session 1 (RNA-Protein Interactions)

Monday, February 25 | 19:30–22:00

Sea to Sky A

Presenter	Poster #	Abstract Title
Aitken, Marisa	1026	hnRNP K overexpression drives myeloid malignancy via interaction with RUNX1
Amzil, Hind	1027	Determination of Rho Guanine Nucleotide Exchange Factor's (RGNEF) role in the regulation of ALS related proteins
Bangru, Sushant	1001	Temporal control of ESRP2 licenses fetal-to-adult switch in alternative splicing required for hepatocyte maturation
Ben-Aroya, Shay	1028	RNA editing by dysregulated Adenosine Deaminase Acting on RNA (ADAR) enzyme induces proteotoxic stress
Benhalevy, Daniel	1002	Proximity-CLIP provides a snapshot of protein-occupied RNA elements in sub-cellular compartments
Borchardt, Erin	1003	Investigating RNA Pseudouridylation Patterns in Viral Infection
Bovaird, Samantha	1004	Defining the impact of genotoxic stress on post-transcriptional gene regulation and RNA localization pathways
Bridges, Mary	1006	Localized regulation of RNAi - lncRNA interactions by epithelial adherens junctions
Campagne, Sebastien	1029	Structural basis for RBM39 RNA binding specificity
Carrier, France	1007	Rational design of protein translation inhibitors for cancer cells
Caudron-Herger, Maiwen	1008	Proteome-wide and quantitative identification of RNA-dependent protein complexes
Chakrabarti, Anob	1009	Exploring the characteristics and functions of RNA secondary structures bound in vivo by Staufen
Chau, Anthony	1030	Defining the sequence requirements for Xist function in X inactivation
Chawla, Mohit	1010	Occurrences and Stability of Lone Pair- π Stacking Interactions between Ribose-Nucleobases and Ribose-Aminoacids in Functional RNA-protein Complexes
Cheng, Hong	1012	NRDE2 negatively regulates nuclear exosome functions and controls embryonic stem cell self-renewal
Chin, Ashley	1013	mRNA Localization: Characterization of RNA Binding Proteins Involved in Regulating Epithelial Cell Polarity
D'Ambra, Eleonora	1014	Study of FUS-dependent circRNAs function and localization in murine motor neurons
Drew, Kevin	1015	Systematic discovery of endogenous human ribonucleoprotein complexes

Listing is in alphabetical order by presenter's last name.

Poster Session 1 (RNA-Protein Interactions)

Monday, February 25 | 19:30–22:00

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Presenter	Poster #	Abstract Title
Dropelmann, Cristian	1031	Co-localization of RNA binding proteins RGNEF and TDP-43 into micronuclei induced by metabolic stress
Evankovich, John	1016	Toll-Like Receptor 8 Proteasomal Degradation is Directed by RING Finger Protein 216 in response to circulating host MicroRNA's
Fleming, Jodie	1017	Defining the regulatory crosstalk between the breast cancer health disparities gene CRYBB2 and CRYBB2P1 noncoding RNA
Flynn, Ryan	1018	DNA-PK leverages non-coding RNA binding to regulate nucleolar functions
Gabryelska, Marta	1019	Probing ribosome assembly dynamics with CLASH
González Carreón, Gerson	1020	In vitro evaluation of damage by heavy metals in adherens junctions of Sertoli cells
Han, Hong	1022	An integrated high-throughput chemical screening platform for RNA splicing modulators
Hennig, Janosch	1023	Structural insights into MLE-Unr-roX2 complex assembly during early steps of Drosophila dosage compensation
Hoefler, Simone	1024	Structural and Functional Dissection of Eukaryotic snoRNP Complexes Catalyzing rRNA 2'-O-Ribose Methylations
Hogg, Bobby	1025	hnRNP L-dependent protection of normal mRNAs from NMD subverts quality control in B cell lymphoma

Listing is in alphabetical order by presenter's last name.

Poster abstracts are viewable on the mobile app or on your Keystone Symposia online account.

Poster Session 2 (RNA-Protein Interactions)

Tuesday, February 26 | 19:30–22:00

Sea to Sky A

Presenter	Poster #	Abstract Title
Huang, Wendy Jia Men	2001	Nuclear RNA helicase DDX5 promotes intestine inflammation and tumorigenesis by regulating gene transcription, splicing, and RNA editing
Im, Wonkyun	2002	nc886, a human non-coding RNA, plays a tumor suppressor role in esophageal cancer by inhibiting PKR and AKT
Jha, Sudhakar	2003	Utilization of a Novel Technique to Identify RNA-binding Proteins
Ji, Xiong	2004	RNAPII condensates connect genome organization and gene regulation
Kalra, Kanav	2005	Nucleobase-Water Stacking Interactions in RNA Molecules
Kalsotra, Auinash	2006	Over-expression of the non-muscle RBFOX2 isoform triggers cardiac conduction defects in myotonic dystrophy
Khade, Prashant	2027	Enhanced identification of microRNA targets with Ago2 eCLIP
Kim, Chun	2007	miR-9-5p and -3p exhibit rapid, yet distinct, protein-dependent degradation kinetics in the rat brain
Kim, Hak Kyun	2028	Amino-acylated LeuCAG3'tsRNA mediates translational elongation of ribosomal protein S28 in both human and mouse
Kurokawa, Riki	2008	Arginine methylation of RNA binding protein TLS inhibits binding to long noncoding RNA, repressing the histone acetyltransferase activity
Lee, Kyung-Tae	2009	UPF1/SMG7-dependent MicroRNA-mediated Gene Regulation
Lee, Yong Suk	2010	nc886, a non-coding RNA induced by TGF- β , modulates global gene expression by inhibiting the microRNA pathway
Lilley, Kathryn	2011	OOPS enables characterization of RNA-protein interaction dynamics in any organism
Llacsahuanga, Lidia	2012	Optimized fluorescent iCLIP allows high-resolution analysis of human SF1
Lobel, Joseph	2013	Pat1 activates late steps in mRNA decay by multiple mechanisms
Lubelsky, Yoav	2014	Elucidating the crosstalk between hnRNPK binding and nuclear retention of long RNAs

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Poster Session 2 (RNA-Protein Interactions)

Tuesday, February 26 | 19:30–22:00

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Presenter	Poster #	Abstract Title
Mandal, Subhrangsu	2015	Long noncoding RNAs in macrophage activation, immune response and inflammation
Murn, Jernej	2016	Transcriptional control of neuronal differentiation by an RNA-binding protein
Neckles, Carla	2017	HNRNPH1-dependent splicing of a fusion oncogene reveals a targetable RNA G-quadruplex interaction
Pandey, Poonam	2019	Circsamd4 promotes myogenesis
Patel, Dhara	2020	Complementary 3'UTRs derived from overlapping genes can promote cytoplasmic co-localization of distinct mRNAs
Pillai, Ramesh	2021	RNA modifications and regulation of gene expression
Pirouz, Mehdi	2022	The Perlman Syndrome Dis3l2 Exonuclease as Guardian of ER-associated Translation
Post, Sean	2023	Unraveling the clinical implications of aberrant hnRNP K expression
Price, Alexander	2024	Adenovirus co-opts cellular m6A modification machinery to facilitate viral RNA splicing and protein production
Rafiee, Mahmoud-reza	2025	HARP: A Holistic Approach for RBP Purification in less than an hour

Listing is in alphabetical order by presenter's last name.

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Poster Session 3 (RNA-Protein Interactions)

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Presenter	Poster #	Abstract Title
Liu, Tina	3026	Transcription-coordinated DNA and RNA targeting by Type III-A CRISPR-Cas ribonucleoprotein complexes
Read, Graham	3001	Identification of Proteins Involved in 5'OH miRNA Production and Protection
Rohban, Sara	3027	Selective isolation of chromatin-associated proteins (SICAP) reveals R-loops-interacting proteins
Schlundt, Andreas	3002	The individual contributions of single IMP3 RNA-binding domains to the recognition of clustered sequences in target mRNAs
Shah, Neelam	3004	Activation of RIG-I by Small Hairpin RNA
Sharma, Shalini	3005	U2 snRNP Protein SF3A1 Interacts with Stem-loop 4 of U1 snRNA via its Ubiquitin-like Domain
Shkumatava, Alena	3006	Systematic Identification and Quantitative Measurement of RNA-Protein Interactions by incPRINT
Smith, Tom	3007	OOPS opens up new avenues to interrogate RNA: protein interactions
Song, Jiarui	3008	A novel plant-specific structural element within the Arabidopsis telomerase RNA
Song, Xiao	3009	SRSF3 Promotes Glioblastoma Progression Via Splicing Regulation of Alternative Exons
Stagsted, Lotte Victoria	3010	Identification of RNA binding proteins involved in the biogenesis of AUG circular RNAs
Suster, Izabela	3011	CDK5-dependent phosphorylation of the QKI RNA binding protein enhances oligodendroglia differentiation by integrated regulation of coding and non-coding RNAs
Tanaka, Motomasa	3012	TDP-43 and DISC1 Co-Aggregation Disrupts Local mRNA Translation and Mental Function in FTLT
Trendel, Jakob	3013	Protein Half-Lives on RNA Reveal Human Ribosome Maintenance Independent of Ribosome Biogenesis
Villanueva, Eneko	3014	OOPS: A simple low cost method for extract RNA:protein adducts
Vogt, Carolin	3028	Herpesviral mRNP formation
Wang, Huating	3015	MyoD induced enhancer RNA interacts with hnRNPL protein via CAAA motif to activate target gene transcription during myogenic differentiation

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Presenter	Poster #	Abstract Title
Wang, Qingqing	3016	Deciphering the splicing code of coordinated RNA binding proteins PSI and hrp48 in sculpting the Drosophila transcriptome
Wanowska, Elzbieta	3029	Nuclear lncRNA Cyrano modulates expression of OIP5 oncogene
Wert-Lamas, Leon	3017	Systematically defining lncRNA-protein interactions in melanoma
Widner, Danielle	3018	RNA-Protein Complex Formation in a Mysterious Large ncRNA
Xi, Linghe	3019	Functional investigation of N6-methyladenosine RNA modification during epidermal development
Yang, Jen-Hao	3020	lncRNA OIP5-AS1 promotes myogenesis by regulating MEF2C expression
Zarnegar, Brian	3022	supirCLIP analysis of EGF-RAS-MAPK regulated RNA-protein interaction dynamics
Zealy, Richard	3023	Profiling of m6A RNA modifications identified an age-associated regulation of AGO2 mRNA stability
Zhao, Yun	3024	Oncogenic heterogeneous nuclear ribonucleoprotein D-like modulates the growth and imatinib response of human chronic myeloid leukemia CD34+ cells via pre-B cell leukemia homeobox-1
Zhou, Rui	3025	Role of Circular RNAs in Innate Immunity and Neurodevelopment

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Long Noncoding RNAs: From Molecular Mechanism to Functional Genetics

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Poster Session 1 (Long Noncoding RNAs)

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Abraham, Karan	1001	Intergenic non-coding RNA-DNA hybrids maintain nucleolar biomolecular condensates and ribosome biogenesis
Agrawal, Saumya	1002	Repressor human lncRNAs
Atacho, Diahann	1003	Identifying transposon-derived human-specific lncRNAs and their role in the evolution of human forebrain development
Bartosovic, Marek	1004	Mechanism and function of lncRNAs involved in oligodendrocyte lineage development
Ben-El, Rina	1005	Studying the functional relationship between transcription factors and long non-coding RNAs
Bernardes de Jesus, Bruno	1006	An antisense transcript mediates MALAT1 response in human breast cancer
Bhatt, Bhumi	1007	lncRNA-miRNA-mRNA interactions and the pathophysiology of cancer cachexia
Bi, Omera	1008	The role of lncRNA in the functional disruption of SFPQ in melanoma
Bink, Diewertje	1009	The role of long non-coding RNA TERRA in the cardiovascular system
Bitar, Maina	1010	Transcriptome sequencing of brain stem-cells reveals age-related lncRNAs
Bonetti, Alessandro	1011	RADICL-seq identifies genome-wide cell-type RNA-chromatin interactions
Broadwell, Lindsey	1012	The Non-coding Splice Variant of Myosin Heavy Chain 7b has Regulatory Roles in the Heart
Brodnicki, Thomas	1013	A long noncoding RNA attenuates dendritic cell function and decreases autoimmune disease susceptibility
Brownmiller, Tayvia	1014	The Importance of the Lnc-SPRY3 Family in Male Non-small Cell Lung Cancer Therapeutic Response
Callingham, Rebecca	1015	The impact of a long non-coding RNA at the Pax6 locus on β -cell identity and function
Campos-Melo, Danae	1036	RNA metabolism failure in Amyotrophic Lateral Sclerosis: lncRNAs and circRNAs as novel components
Chakrabarti, Ratna	1037	Functional characterization of a novel long non-coding RNA PAINT as a promoter of aggressive prostate cancer
Choi, Mihyun	1016	Expression and Regulation of a novel Myocardin-Induced Muscle-Specific Long Noncoding RNA in Smooth Muscle Cells

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Poster Session 1 (Long Noncoding RNAs)

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Chou, Eldon	1017	Algorithm-designed genome-engineering tools for CRISPR-Cas9 applications
Chowdhary, Anshika	1038	Systematic co-expression network analysis of time series gene expression data reveals regulatory long non-coding RNAs in Hepatocellular carcinoma
Chuang, Huai-Chia	1018	Identification of lncRNAs in T cells as potential biomarkers for systemic lupus erythematosus
Contreras, Lydia	1019	Novel high-throughput tools for in vivo functional characterization of regulatory RNAs
Cremin, Conor	1020	The epigenetic effect of long non-coding RNA (lncRNA) in response to the Influenza non-structural protein 1 (NS1)
Daneshvar, Kaveh	1021	lncRNA DIGIT and BRD3 protein form phase-separated condensates and regulate endoderm differentiation
Das, Prosun	1022	Regulatory Role of Long Non-coding RNA HOTAIRM1 on HOXA Cluster Transcriptome in MLL-rearranged Leukemia in Response to Chemotherapy
de Bony de Lavergne, Eric	1023	NESPR long non-coding RNA, a new neuroblastoma-specific oncogene
De Majo, Federica	1024	Genomic instability in the naturally and prematurely-aged myocardium
Delhaye, Louis	1025	RNA-directed proteomics to explore the interactome of the melanoma-specific lncRNA SAMMSON
Delihias, Nicholas	1026	Formation of a human lincRNA gene family by gene duplications in chromosomal low copy repeats
Desideri, Fabio	1027	Charme long noncoding RNA shapes the 3D nuclear structure by its close cooperation with chromatin
Dewaele, Shanna	1028	Therapeutic applications of SAMMSON lncRNA inhibition in uveal melanoma
Dimitrova, Nadya	1029	p53 represses Myc via a stress-induced isoform of the long noncoding RNA Pvt1
Dixon-McDougall, Thomas	1030	The Identity of the Discontinuous Regions of the lncRNA XIST that Cooperatively Inactivate a Chromosome
Dueck, Anne	1031	Defining the lncRNA repertoire of cardiac resident macrophages by deep RNA-Seq and single cell sequencing
Dumbovic, Gabrijela	1032	The Tug1 lncRNA Locus is Essential for Male Fertility and Harbors a Tripartite DNA, lncRNA and Protein Functionality
Ebbesen, Karoline	1033	Unravelling the biogenesis and function of the circular RNA ciRS-7

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Eccles, Michael	1034	Eleven pregnancy-specific glycoproteins and two topologically associated lnc-RNAs are upregulated in placenta and PDL-1 positive melanoma cell lines
Espadas, Isabel	1035	A Novel lncRNA D17rik is Regulated for Hippocampal-dependent Fear Memory

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Presenter	Poster #	Abstract Title
D'Abate, Lia	2036	Establishing lncRNA PTCHD1-AS as a susceptibility locus for Autism Spectrum Disorder
Flores, Mario	2001	Dissecting the Characteristics and Functions of Transcribed Enhancers
Fort, Victoire	2002	Functional characterization of the lncRNA Tuna in neuronal differentiation
Fortes, Puri	2003	Healthy testis expresses long non-coding RNAs upregulated in cancer
Frank, Filipp	2037	SHAPE-MaP identifies two structural modules with distinct function in the lncRNA growth arrest specific 5 (Gas5)
Gandellini, Paolo	2005	LEADeR role of miR-205 host gene as long non-coding RNA in prostate basal cell differentiation
Gautier, Marine	2006	Functional characterization of hypoxia-regulated lncRNAs in Non-Small Cell Lung Carcinomas
Ginsberg, Doron	2007	A novel E2F1-regulated lncRNA, XLOC_000190, is required for S phase progression and cell proliferation
Giro, Ariadna	2008	Identification and validation of long-non coding RNAs over-expressed in Triple-Negative Breast Cancer
Gourvest, Morgane	2009	Long Noncoding RNAs in NPM1-mutated Cytogenetically Normal Acute Myeloid Leukemia: Clinical relevance and Functional characterization
Goustin, Anton	2038	Parallel Analysis of the Protein Component of a Long Noncoding RNA-Based Cytoplasmic Ribonucleoprotein Particle using RAP-MS and RaPID-MS
Grinman, Eddie	2010	Investigating the Role of a Synaptically Targeted Intronic lncRNA in Memory Storage
Gupta, Ishita	2011	Identifying lncRNAs in cerebellar development
Han, Yoo Jane	2012	Circular RNAs expressed from the BRCA1 Pseudogene Regulates Antiviral Immune Signaling in Breast Cancer Cells
Hericher, Gaultier	2013	Novel Tuna isoforms define the pluripotent stem cell state
Hou, Tim	2014	Functional Analysis of Estrogen-Regulated Enhancer RNAs in Breast Cancer Cells
Hsieh, Fu-Kai	2039	The lncRNA HERVH negatively regulates chromatin targeting and remodeling mediated by CHD7
Hua, Junjie	2015	Risk SNP-mediated dysregulation of lncRNA PCAT19 promotes prostate cancer progression

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Presenter	Poster #	Abstract Title
Jacobs, Amy	2016	Mechanism and function of lncRNAs in Zika infection
Jensen, Liselotte	2017	Interleukin-36 cytokines regulate antiviral immunity in keratinocytes and the skin
Johnsson, Per	2018	Functional prediction and validation of lncRNAs using allele-sensitive single-cell RNA-sequencing
Jung, Minhyeok	2019	Identifying prognostic biomarker long noncoding RNAs in Hepatocellular Carcinoma through co-expression network analysis
Kannanganattu, Prasanth	2020	Nucleolus-enriched repeat-containing noncoding RNA regulates rDNA transcription
Kim, Daniel	2021	Oncogenic RAS Signaling Reprograms the Noncoding Transcriptome
Kim, Ju-Yeon	2022	Gender-specific expression of novel long non-coding RNA in HFD-induced NAFLD mouse model
Le Roch, Karine	2023	The Role of lncRNAs in Malaria Parasites: Deciphering the Non-Coding Code of Pathogenicity and Sexual differentiation
Lim, Lee Jin	2024	Potential role of clinically associated lncRNAs as master gene regulators in Hepatocellular Carcinoma
Liu, Shiyang	2025	Wnt-Dependent lncRNAs in RNF43-mutant pancreatic cancer
Liu, Xiao	2026	A ncRNA derived from xbp-1 mRNA cleavage promotes axon regeneration
Losic, Bojan	2027	Circular RNA mediate IBD genetic risk
Lyu, Qing	2028	B2M RNA facilitates HSV-1 gene expression via interacting with ASH2L and VP16
Mandel-Gutfreund, Yael	2029	Key pluripotent markers interact with long noncoding RNAs in human embryonic stem cells
Matsuno, Yoko	2030	Characteristic convergent variation in LINE-1 nucleotides can benefit redundantly forming triplexes with lncRNA in mammalian X-chromosome inactivation
Mizuno, Yosuke	2031	Regulation of mitochondria function by noncoding RNA
Mukarram, Abdul Kadir	2032	The landscape of non-coding genomic features in the zebrafish genome
Nam, Jin-Wu	2033	En bloc and segmental deletions of human XIST reveal X chromosome inactivation-involving RNA elements

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Poster Session 2 (Long Noncoding RNAs)

Tuesday, February 26 | 19:30–22:00

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Presenter	Poster #	Abstract Title
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Nielsen, Katrine	2035	A functional study of circRNAs

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Poster Session 3 (Long Noncoding RNAs)

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Presenter	Poster #	Abstract Title
Li, Haobo	3036	Inhibition of Novel Long Noncoding RNA IncExACT1 Induces Physiological Cardiac Hypertrophy
Mazahery, Claire	3037	Signaling from individual Opioid Receptors differentially modulates long non-coding RNAs in resting and activated human CD8+ T cells
Pascarella, Giovanni	3038	Somatic Retrotransposons-Associated Structural Variants in Health and Neurodegeneration
Pasquali, Lorenzo	3001	Somatic Retrotransposons-Associated Structural Variants in Health and Neurodegeneration
Peltier, Dan	3002	Long Non-Coding RNA Regulation of Human Allogeneic T-Cells
Perry, Rotem	3003	Regulation of Neuroregeneration by Long Noncoding RNAs
Pham, Tan Phat	3004	The age and shear regulated long non-coding RNA Aerrie controls endothelial cell function
Plasek, Leah	3039	Investigation of Potential Roles for lncRNAs in Establishment and Maintenance of HIV Latency
Ramilowski, Jordan	3006	Systematic Elucidation of Functions of lncRNAs
Ramnarine, Varune	3007	The Long Noncoding RNA Landscape of Neuroendocrine Prostate Cancer and its Clinical Implications
Royer, Melanie	3008	RNA Seq – Identification of a long non-coding RNA involved in social fear
Saitoh, Noriko	3009	Eleanors define the active ESR1 chromatin domain in endocrine therapy-resistant breast cancer cells
Sallé-Lefort, Sandrine	3010	Modulation of the mouse lung physiology by the lncRNA Malat1
Samdal, Helle	3011	Functional evaluation of long non-coding RNAs with potential roles during cell replication
Schynkel, Tinus	3012	Interferon-mediated long non-coding RNA response to HIV infection in macrophages
Sehgal, Paras	3013	Regulation of Diacyl glycerol- mediated Protein kinase C-beta activation by Vascular Endothelial Associated Long non coding RNA 2 modulates Endothelial permeability
Shahzad, Uswa	3014	Long Noncoding RNA Regulation of the Cancer Stem Cell Population in Glioblastoma Multiforme

Presenter	Poster #	Abstract Title
Smith, Keriayn	3040	Diverse Long Noncoding RNA Interactions as Functional Determinants in Stem Cell Self-renewal and Differentiation
Somasundaram, Saigopal	3015	The DNMT1-associated lincRNA DACOR1 reprograms genome-wide DNA methylation in colon cancer
Stanicek, Laura	3016	The shear stress-induced long non-coding RNA LASSIE as a regulator of endothelial cell junctions
Sunwoo, Hongjae	3017	Systematic searching for functional motifs in Xist RNA reveals that Repeat B coordinates Xist-Polycomb spreading and gene silencing
Takahashi, Hazuki	3018	Noncoding RNA “SINEs” up-regulate protein translation of target protein coding mRNA
Tamgue, Ousman	3019	Long non-coding RNA-26 promotes intracellular Mycobacterium tuberculosis growth through inhibition of pro-inflammatory genes expression and macrophage activation
Tay, Yvonne	3020	FTX/miR-374/miR-545 is a three-hit oncogenic locus in colon cancer
Toma, Maria-Alexandra	3021	Circular RNA hsa_circ_0084443 plays a pathological role in diabetic foot ulcer by regulating keratinocyte migration and proliferation
Trypsteen, Wim	3022	Long non-coding RNAs and latent HIV – a search for novel targets for latency reversal
Van Hecke, Clarissa	3023	Decreased NEAT1 and MALAT1 levels in HIV-1 positive individuals with high viral load
van Solingen, Coen	3024	A micropeptide concealed in a putative long non-coding RNA directs inflammation
Vendramin, Roberto	3025	SAMMSON fosters cancer cell fitness by concertedly enhancing mitochondrial and cytosolic translation
Wei, Guifeng	3027	Systematic Allelic Analysis Defines the Interplay of Key Pathways in X Chromosome Inactivation
Wolff, Philip	3028	Plant long non-coding RNAs: lessons from COOLAIR
Wong, Lok-Sze	3029	In vivo genome-wide CRISPR activation screening identifies functionally important lncRNAs in hepatocellular carcinoma
Yang, Li	3030	Identifying lncRNA nuclear localization sequences with machine learning and deep learning models

Poster Session 3 (Long Noncoding RNAs)

Wednesday, February 27 | 19:30–22:00

Sea to Sky A

Presenter	Poster #	Abstract Title
You, Bo-Hyun	3032	A Novel LincRNA HERES Epigenetically Regulates CACNA2D3 via Interaction with EZH2 in Esophageal Squamous Cell Carcinoma
Yuen, Karen Wing Yee	3033	Point centromere activity requires an optimal level of centromeric non-coding RNA
Zhang, Yaou	3034	NEAT1 mediates clearance of amyloid- β through differentially regulating H3K27 acetylation and crotonylation
Zinad, Hany	3035	Physiological roles of noncoding RNA in renal phosphate homeostasis

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2018–2019 Keystone Symposia Conference Series

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Drivers of Type 2 Diabetes: From Genes to Environment (S1)

Organizers: Kyong Soo Park, Young-Bum Kim and Zoltan P. Arany
Oct 7–11, 2018 | Grand Hilton Seoul | Seoul | South Korea

Framing the Response to Emerging Virus Infections (S2)

Organizers: Ralph A. Tripp, Suresh Mahalingam, John W. Lowenthal, Andrew G. Bean and Malik Peiris
Oct 14–18, 2018 | University of Hong Kong | Pok Fu Lam | Hong Kong

21st Century Drug Discovery and Development for Global Health (S3)

Organizers: Ken Duncan, Elizabeth Winzeler and Lluís Ballell
Oct 17–20, 2018 | Hotel Palace Berlin | Berlin | Germany

From Rare to Care: Discovery, Modeling and Translation of Rare Diseases (S4)

Organizers: Josef M. Penninger and Kym Boycott
Nov 11–14, 2018 | Vienna BioCenter, IMP Lecture Hall | Vienna | Austria

Leveraging Genomic Diversity to Promote Animal and Human Health (S5)

Organizers: Michèle Ramsay, Han Brunner and Appolinaire Djikeng
Nov 25–29, 2018 | Speke Resort & Conference Centre | Kampala | Uganda

Role of the Genital Tract Microbiome in Sexual and Reproductive Health (S6)

Organizers: Janneke van de Wijgert, Jeanne Marrazzo, Douglas Kwon and Jo-Ann Passmore
Dec 11–15, 2018 | Southern Sun Cape Sun | Cape Town, Western Cape | South Africa

DNA Replication and Genome Instability: From Mechanism to Disease (A1)

Organizers: Karlene A. Cimprich, Mark J. O'Connor and Johannes C. Walter
Jan 13–17, 2019 | The Cliff Lodge | Snowbird, Utah | USA

Host and the Environment in IBD:

Scientific Advances Leading to New Therapeutics (A2)

Organizers: Gary D. Wu, Scott Snapper, Judy H. Cho and Aida Habtezion
Jan 13–17, 2019 | Sagebrush Inn & Suites | Taos, New Mexico | USA

Mitochondrial Biology in Heart and Skeletal Muscle (J1)

Organizers: E. Dale Abel and Andrea L. Hevener

joint with

Mitochondria in Aging and Age-Related Disease (J2)

Organizers: Gerald S. Shadel and Holly Van Remmen
Jan 13–17, 2019 | Keystone Conference Center | Keystone, Colorado | USA

Single Cell Biology (L1)

Organizers: Timm Schroeder and Berthold Göttgens
Jan 13–17, 2019 | Beaver Run Resort | Breckenridge, Colorado | USA

Tuberculosis: Mechanisms, Pathogenesis and Treatment (A3)

Organizers: Christina L. Stallings, Veronique Anne Dartois, Stewart T. Cole and David Barros
Jan 17–21, 2019 | Fairmont Banff Springs | Banff, Alberta | Canada

Integrated Pathways of Disease in NASH and NAFLD (A4)

Organizers: Scott L. Friedman, Arun J. Sanyal, Brent A. Tetri, Mary E. Rinella and Christopher R. Shepard
Jan 20–24, 2019 | Eldorado Hotel | Santa Fe, New Mexico | USA

Cancer Vaccines (L2)

Organizers: Lélia Delamarre, Robert A. Seder and Nina Bhardwaj
Jan 20–24, 2019 | Fairmont Hotel Vancouver | Vancouver, British Columbia | Canada

Digital Health: From Science to Application (A5)

Organizers: Geoffrey S. Ginsburg, Sue Siegel and Eric D. Perakslis
Jan 21–25, 2019 | Keystone Conference Center | Keystone, Colorado | USA

Windows on the Brain:

Formation and Function of Synapses and Circuits and Disruption in Disease (A6)

Organizers: Kristin Scott, Paola Arlotta, Rui M. Costa and Yimin Zou
Jan 21–25, 2019 | Sagebrush Inn & Suites | Taos, New Mexico | USA

Cellular Plasticity: Reprogramming, Regeneration and Metaplasia (J3)

Organizers: Jason C. Mills, Maike Sander and Ben Z. Stanger
joint with

Signal Dynamics and Signal Integration in Development and Disease (J4)

Organizers: Nicolas Tapon, Liliana Attisano and Raphael Kopan
Jan 27–31, 2019 | Keystone Conference Center | Keystone, Colorado | USA

Transcription and RNA Regulation in Inflammation and Immunity (B1)

Organizers: Silvia Monticelli, K. Mark Ansel, Sarah Teichmann and Gioacchino Natoli
Feb 2–5, 2019 | Granlibakken Tahoe | Tahoe City, California | USA

Molecular Approaches to Vaccines and Immune Monitoring (J5)

Organizers: Peter D. Kwong, Brandon DeKosky and Jeffrey B. Ulmer
joint with

B Cell–T Cell Interactions (J6)

Organizers: Gabriel D. Victora and Carola G. Vinuesa
Feb 10–14, 2019 | Keystone Conference Center | Keystone, Colorado | USA

Obesity and Adipose Tissue Biology (J7)

Organizers: Matthias Blüher, Philipp E. Scherer and Anne Bouloumié
joint with

Functional Neurocircuitry of Feeding and Feeding Disorders (J8)

Organizers: Roger D. Cone, Lori M. Zeltser and Matthew R. Hayes
Feb 10–14, 2019 | Fairmont Banff Springs | Banff, Alberta | Canada

Autophagy: From Model Systems to Therapeutic Opportunities (B2)

Organizers: Vojo Deretic, Li Yu and Leon O. Murphy
Feb 17–21, 2019 | Eldorado Hotel | Santa Fe, New Mexico | USA

Uncovering Mechanisms of Immune-Based Therapy in Cancer and Autoimmunity (B3)

Organizers: Daniel J. Cua, E. John Wherry and Carla V. Rothlin
Feb 18–22, 2019 | Beaver Run Resort | Breckenridge, Colorado | USA

Genome Engineering: From Mechanisms to Therapies (B4)

Organizers: Andrew May, Rodolphe Barrangou and Knut Woltjen
Feb 19–23, 2019 | Fairmont Empress Victoria | Victoria, British Columbia | Canada

Tumor Metabolism (B5)

Organizers: Lewis C. Cantley, Karen H. Vousden and Jeffrey A. Engelman
Feb 24–28, 2019 | Keystone Conference Center | Keystone, Colorado | USA

Cell Competition in Development and Disease (B6)

Organizers: Margaret A. Goodell, Laura A. Johnston and Thomas P. Zwaka
Feb 24–28, 2019 | Granlibakken Tahoe | Tahoe City, California | USA

Myeloid Cells (B7)

Organizers: Tiffany Horng, Gregory M. Barton and Ajay Chawla
Feb 24–28, 2019 | Eldorado Hotel | Santa Fe, New Mexico | USA

RNA-Protein Interactions (X1)

Organizers: Xiang-Dong Fu, Anne Ephrussi and Douglas L. Black
joint with

Long Noncoding RNAs: From Molecular Mechanisms to Functional Genetics (X2)

Organizers: Saba Valadkhan and Piero Carninci
Feb 24–28, 2019 | Whistler Conference Centre | Whistler, British Columbia | Canada

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Phenotypic Drug Discovery:

Recent Advances and Insights from Chemical and Systems Biology (C1)

Organizers: Mark Mercola, Fabien Vincent, Monica Schenone and Arsenio Nueda
Mar 3–7, 2019 | Beaver Run Resort | Breckenridge, Colorado | USA

Diabetes: Innovations, Outcomes and Personalized Therapies (X3)

Organizers: Philip J. Larsen, Melina Claussnitzer and Tina Vilsbøll

joint with

Unraveling the Secrets of Kidney Disease (X4)

Organizers: Katalin Susztak, Caroline Fox and Masaomi Nangaku
Mar 3–7, 2019 | Whistler Conference Centre | Whistler, British Columbia | Canada

Cancer Immunotherapy: Mechanistic Insights to Improve Clinical Benefit (C2)

Organizers: Padmanee Sharma, Aviv Regev, Crystal L. Mackall and Kristen Hege
Mar 10–14, 2019 | Whistler Conference Centre | Whistler, British Columbia | Canada

Microbiome: Chemical Mechanisms and Biological Consequences (C3)

Organizers: Dennis W. Wolan, Peter J. Turnbaugh and Emily P. Balskus
Mar 10–14, 2019 | Fairmont The Queen Elizabeth | Montréal, Québec | Canada

Innate Immune Receptors: Roles in Immunology and Beyond (M1)

Organizers: Jenny P.Y. Ting, Shie-Liang Edmond Hsieh, Fu-Tong Liu, Michael Gale, Jr. and Siamon Gordon
Mar 10–14, 2019 | International Conference Hall of Academia Sinica | Taipei | Taiwan

Mammalian Sensory Systems (C4)

Organizers: Stephen Liberles, David D. Ginty, Jeffrey R. Holt and Melanie Samuel
Mar 15–19, 2019 | Allen Institute | Seattle, Washington | USA

Cancer Metastasis:

The Role of Metabolism, Immunity and the Microenvironment (M2)

Organizers: Erika L. Pearce, Sarah-Maria Fendt, Russell G. Jones and Peter F. Carmeliet
Mar 15–19, 2019 | Firenze Fiera – Fortezza da Basso | Florence | Italy

Epigenetics and Human Disease (X5)

Organizers: Cheryl H. Arrowsmith, Anne Schaefer and Mark A. Dawson

joint with

3D Genome: Gene Regulation and Disease (X6)

Organizers: Bing Ren, Ana Pombo and Joseph R. Ecker
Mar 17–21, 2019 | Fairmont Banff Springs | Banff, Alberta | Canada

Origins of Allergic Disease: Microbial, Epithelial and Immune Interactions (M3)

Organizers: Marsha Wills-Karp, Donald Leung and Kari Nadeau
Mar 24–27, 2019 | Granlibakken Tahoe | Tahoe City, California | USA

Innate and Non-Classical Immune Cells in Cancer Immunotherapy (C5)

Organizers: Nicholas D. Huntington, Eric Vivier, Caroline Robert and Lewis L. Lanier
Mar 24–28, 2019 | Keystone Conference Center | Keystone, Colorado | USA

HIV Vaccines (X7)

Organizers: Nicole A. Doria-Rose, Thumbi Ndung'u and Gunilla Karlsson Hedestam

joint with

Functional Cures and the Eradication of HIV (X8)

Organizers: Lynn Morris, Melanie M. Ott and Kevin V. Morris
Mar 24–28, 2019 | Fairmont Chateau Whistler | Whistler, British Columbia | Canada

Lipidomics and Functional Metabolic Pathways in Disease (C6)

Organizers: Sarah Spiegel, Charles N. Serhan and Valerie B. O'Donnell
Mar 31–Apr 4, 2019 | Steamboat Grand | Steamboat Springs, Colorado | USA

Imaging Across Scales: Leveraging the Revolution in Resolution (D1)

Organizers: Bo Huang and Elizabeth R. Wright
Apr 7–10, 2019 | The Cliff Lodge | Snowbird, Utah | USA

Protein Replacement through Nucleic Acid Therapies (L3)

Organizers: Pad Chivukula, Paloma Giangrande and Jean Bennett
Apr 7–10, 2019 | Steamboat Grand | Steamboat Springs, Colorado | USA

Antibodies as Drugs:

New Horizons in the Therapeutic Use of Engineered Antibodies (D2)

Organizers: Christian Klein, Mark S. Cragg and Germaine Fuh
Apr 7–11, 2019 | Beaver Run Resort | Breckenridge, Colorado | USA

Proteomics and its Application to Translational and Precision Medicine (D3)

Organizers: Matthias Mann, Emma K. Lundberg, Albert J.R. Heck and Mathias Uhlén
Apr 7–11, 2019 | Clarion Hotel Sign | Stockholm | Sweden

Skin Health and Disease: Immune, Epithelial and Microbiome Crosstalk (D4)

Organizers: Michel Gilliet, Emma Guttman, Anthony Oro and Manolis Pasparakis
Apr 8–11, 2019 | Herrenhausen Palace | Hannover | Germany

Biomolecular Condensates:

Phase-Separated Organizers of Cellular Biochemistry (D5)

Organizers: Michael K. Rosen and Anthony Hyman
Apr 10–13, 2019 | The Cliff Lodge | Snowbird, Utah | USA

Immunometabolism, Metaflammation and Metabolic Disorders (D6)

Organizers: Gökhan S. Hotamisligil, Ruslan M. Medzhitov and Karine Clément
Apr 14–18, 2019 | Fairmont Hotel Vancouver | Vancouver, British Columbia | Canada

Small Regulatory RNAs (D7)

Organizers: V. Narry Kim, Gregory J. Hannon and Lin He
Apr 14–18, 2019 | Daejeon Convention Center | Daejeon | South Korea

Delivering Therapeutics Across Biological Barriers (E1)

Organizers: David Brayden, Claus-Michael Lehr and Kathryn Whitehead
May 6–9, 2019 | Royal Dublin Society | Dublin | Ireland

Climate Change-Linked Stress Tolerance in Plants (M4)

Organizers: Julian Schroeder and Julia Bailey-Serres
May 13–16, 2019 | Herrenhausen Palace | Hannover | Germany

Positive-Strand RNA Viruses (E2)

Organizers: Frank van Kuppeveld and Andrea Gamarnik
Jun 9–13, 2019 | Killarney Convention Centre, INEC | Killarney, Co. Kerry | Ireland

Neural Environment in Disease: Glial Responses and Neuroinflammation (Z1)

Organizers: Richard Daneman, Dorothy Schafer, Michael V. Sofroniew and Vanda A. Lennon

joint with

Neurodegenerative Diseases: New Insights and Therapeutic Opportunities (Z2)

Organizers: Valina L. Dawson, Joseph W. Lewcock and Fred H. Gage
Jun 16–20, 2019 | Keystone Conference Center | Keystone, Colorado | USA

Conference dates are listed with the first date typically being that of afternoon registration and an evening welcome mixer, and the last day when organized sessions conclude, usually in the evening with a closing plenary session followed by food and entertainment. However, some program formats vary. Please check our website for program specifics for each individual meeting. You can view each program directly by entering www.keystonesymposia.org and then /19 and the alpha-numeric program code (e.g., www.keystonesymposia.org/19A1).

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Microbiome: Therapeutic Implications (T1)

Organizers: Justin L. Sonnenburg, Fergus Shanahan and Suzanne Devkota
Oct 6–10, 2019 | INEC, Killarney Convention Centre | Killarney, Co. Kerry | Ireland

Cancer Stem Cells: Advances in Biology and Clinical Translation (T2)

Organizers: Irene Oi Lin Ng, Xin Wei Wang and Dean G. Tang
Oct 13–17, 2019 | Lee Shau Kee Lecture Centre, Centennial Campus,
The University of Hong Kong | Pok Fu Lam | Hong Kong

The Malaria Endgame:

Innovation in Therapeutics, Vector Control and Public Health Tools (G1)

Organizers: Thierry Diagana, Philip Welkhoff and Flaminia Catteruccia
Oct 30–Nov 2, 2019 | Addis Ababa | Ethiopia

Why So Many Ways to Die?

Apoptosis, Necroptosis, Pyroptosis and Beyond (T3)

Organizers: Karina R. Bortoluci, Vishva M. Dixit and Andreas E. Strasser
Nov 19–23, 2019 | Casa Grande Hotel | Guarujá, São Paulo | Brazil

Helminths: New Insights from Immunity to Global Health (T4)

De' Broski Herbert, P'ng Loke, Nicola L. Harris and Frank Brombacher
Dec 8–12, 2019 | Southern Sun Cape Sun | Cape Town, Western Cape | South Africa

Noncoding RNAs: Mechanism, Function and Therapies (A1)

Organizers: Howard Y. Chang, Frank W. Rigo and Lynne E. Maquat
Jan 12–16, 2020 | Fairmont Chateau Whistler | Whistler, British Columbia | Canada

Tuberculosis: Immunity and Immune Evasion (A2)

Organizers: Joel Ernst, Jennifer Philips and Daniel L. Barber
Jan 16–20, 2020 | Eldorado Hotel | Santa Fe, New Mexico | USA

Hypoxia: Molecules, Mechanisms and Disease (A3)

Organizers: José López-Barneo, Sarah R. Walmsley, Hesham A. Sadek
and Jacques Pouyssegur
Jan 19–23, 2020 | Keystone Conference Center | Keystone, Colorado | USA

Tissue Organoids as Models

of Host Physiology and Pathophysiology of Disease (J1)

Organizers: Thaddeus S. Stappenbeck and Linda G. Griffith
Jan 19–23, 2020 | Fairmont Hotel Vancouver | Vancouver, British Columbia | Canada

Cancer Evolution and Combinatorial Cancer Therapies:

Concepts and Challenges (L1)

Organizers: William Sellers, Charles Swanton and Lillian Siu
Jan 19–23, 2020 | Fairmont Banff Springs | Banff, Alberta | Canada

Beyond a Million Genomes: From Discovery to Precision Health (A4)

Alan R. Shuldiner, Dan Roden and Elaine R. Mardis
Jan 21–25, 2020 | Beaver Run Resort | Breckenridge, Colorado | USA

AAA+ Proteins: From Atomic Structures to Organisms (A5)

Walid A. Houry, James Shorter, Antonina Roll-Mecak and Phyllis I. Hanson
Jan 26–29, 2020 | Granlibakken Tahoe | Tahoe City, California | USA

Tissue Immunity (A6)

Organizers: Bana Jabri, Daniel Mucida and Ramnik Xavier
Jan 26–29, 2020 | Embassy Suites by Hilton | Boulder, Colorado | USA

Gene Regulation: From Mechanisms to Disease (J3)

Organizers: Karen Adelman and Patrick Cramer

joint with

Cancer Epigenetics: New Mechanisms and Therapeutic Opportunities (J4)

Organizers: Cigall Kadoch and Christopher Vakoc
Jan 26–30, 2020 | Keystone Conference Center | Keystone, Colorado | USA

Diabetes: Glucose Control and Beyond (J5)

Organizers: Alan D. Attie and Deborah M. Muoio

joint with

Islet Biology: From Gene to Cell to Micro-Organ (J6)

Organizers: Patrick MacDonald, Wen-hong Li, Anna Gloyne
and Anette-Gabriele Ziegler
Jan 27–31, 2020 | Santa Fe Community Convention Center | Santa Fe,
New Mexico | USA

Pain: Aligning the Target (J7)

Organizers: Laura M. Bohn, William K. Schmidt and Allan I. Basbaum

joint with

Somatosensation: From Detection to Perception (J8)

Organizers: Alexander Chesler, Sarah Ross and Daniel O'Connor
Feb 2–5, 2020 | Keystone Conference Center | Keystone, Colorado | USA

Antibodies as Drugs: From B Cell Biology to New Treatments (B1)

Organizers: Paul Carter, Janine Schuurman and Karl Dane Witttrup
Feb 2–6, 2020 | Eldorado Hotel | Santa Fe, New Mexico | USA

Emerging Cellular Therapies: Cancer and Beyond (Q1)

Organizers: Crystal L. Mackall, Marina Cavazzana and Stanley R. Riddell

joint with

Engineering the Genome (Q2)

Organizers: Vic Myer and Erik Sontheimer
Feb 8–12, 2020 | Fairmont Banff Springs | Banff, Alberta | Canada

Intra- and Intercellular Mechanisms of Aging (B2)

Organizers: Malene Hansen, Johan Auwerx and Heinrich Jasper
Feb 9–13, 2020 | Fairmont Hotel Vancouver | Vancouver, British Columbia | Canada

Disruptive Technologies and Opportunities for Brain Therapeutics (Q3)

Organizers: Maria-Jesus Blanco, Kalpana M. Merchant and Mabel Loza García

joint with

Cerebral Fluid Flow and Function:

Lymphatics, Glymphatics and the Choroid Plexus (Q4)

Organizers: Edwin S. Monuki, Maria Lehtinen and Maiken Nedergaard
Feb 16–19, 2020 | Eldorado Hotel | Santa Fe, New Mexico | USA

Stromal Cells in Immunity and Disease (Q5)

Organizers: Scott N. Mueller, Jason G. Cyster, Reina E. Mebius and Theresa Lu

joint with

Fibrosis and Tissue Repair:

From Molecules and Mechanics to Therapeutic Approaches (Q6)

Organizers: Shannon J. Turley and Thomas A. Wynn
Feb 19–23, 2020 | Fairmont Empress Victoria | Victoria, British Columbia | Canada

Obesity and NAFLD: Mechanisms and Therapeutics (B3)

Organizers: Rebecca A. Haeusler, Shingo Kajimura and Alexei Kharitonov
Feb 23–27, 2020 | Fairmont Banff Springs | Banff, Alberta | Canada

The Global Virome in Health and Disease (C1)

Organizers: David Wang, Frederic D. Bushman and Mya Breitbart
Mar 1–4, 2020 | Granlibakken Tahoe | Tahoe City, California | USA

New Insights into the Biology of Exercise (Q7)

Organizers: Sue Bodine, Bret H. Goodpaster and John P. Thyfault

joint with

Charting a New Course for Heart Failure: From Discovery to Data (Q8)

Organizers: Mansoor Husain, Benoit G. Bruneau and Marc Pfeffer
Mar 1–5, 2020 | Keystone Conference Center | Keystone, Colorado | USA

2019–2020 Keystone Symposia Conference Series

These meetings are still in development and therefore subject to possible change. Visit us online at www.keystonesymposia.org to join our mailing list and online networks for updates.

B Cell Renaissance: Epigenetics, Regulation and Immunotherapy (X1)

Organizers: Paolo Casali, Nicole Baumgarth, Meinrad Busslinger and Elizabeth Leadbetter

joint with

T Cell Memory (X2)

Organizers: David B. Masopust, Ananda W. Goldrath and Marion Pepper
Mar 1–5, 2020 | Fairmont Banff Springs | Banff, Alberta | Canada

Tumor Metabolism (C2)

Organizers: Joshua D. Rabinowitz, Marcia C. Haigis and David M. Sabatini
Mar 8–12, 2020 | Fairmont Banff Springs | Banff, Alberta | Canada

Higher-Order Chromatin Architecture in Time and Space (X3)

Organizers: Jennifer E. Phillips-Cremins, Job Dekker and Stavros Lomvardas

joint with

Skirting Mendel: Non-Classical Mechanisms of Phenotypic Variation, Inheritance and Disease (X4)

Organizers: J. Andrew Pospisilik, Anne C. Ferguson-Smith and Ben Lehner
Mar 15–19, 2020 | Whistler Conference Centre | Whistler, British Columbia | Canada

Transforming Vaccinology (L2)

Organizers: Rino Rappuoli, Lynda M. Stuart and Federica Sallusto
Mar 15–19, 2020 | Firenze Fiera – Fortezza da Basso | Florence, Italy

A Gut-Systemic Perspective for Metabolic Disease (C3)

Organizers: Tony K.T. Lam, Nancy A. Thornberry and Fredrik Bäckhed
Mar 22–26, 2020 | Eldorado Hotel & Spa | Santa Fe, New Mexico | USA

Advances in Cancer Immunotherapy (C4)

Organizers: Antoni Ribas, W. Nicholas Haining and Priti Hegde
Mar 22–26, 2020 | Fairmont Chateau Whistler | Whistler, British Columbia | Canada

HIV Vaccines (X5)

Organizers: Persephone Borrow, Georgia D. Tomaras and Rogier W. Sanders

joint with

HIV Pathogenesis and Cure (X6)

Organizers: Robert F. Siliciano, Carine M. Van Lint and Romas Geleziunas
Mar 22–26, 2020 | Keystone Conference Center | Keystone, Colorado | USA

Synthetic Biology: At the Crossroads of Genetic Engineering and Human Therapeutics (C5)

Organizers: Jose M. Lora and Timothy K. Lu
Mar 29–Apr 1, 2020 | Beaver Run Resort | Breckenridge, Colorado | USA

Ubiquitin Biology (X7)

Organizers: Eric J. Bennett, Nicolas H. Thomä and Niels Mailand

joint with

Targeted Protein Degradation (X8)

Organizers: Rajesh Chopra, Nathanael Gray, Anita Gandhi and Georg Winter
Mar 29–Apr 1, 2020 | The Cliff Lodge | Snowbird, Utah | USA

New Discoveries in the Immunobiology of Asthma: Implications for Therapy (D1)

Organizers: Michael J. Holtzman, Philippa C. Marrack, Anne I. Sperling and Prescott G. Woodruff
Apr 2–6, 2020 | The Cliff Lodge | Snowbird, Utah | USA

Plant Genome Engineering: From Lab to Field (L3)

Organizers: Caixia Gao, Daniel F. Voytas and Holger Puchta
Apr 3–6, 2020 | Beaver Run Resort | Breckenridge, Colorado | USA

Integrating Metabolism and Immunity (D2)

Organizers: Marc Y. Donath, Tom Thuren, Bruce M. Spiegelman and Diane Mathis
Apr 3–7, 2020 | Keystone Conference Center | Keystone, Colorado | USA

Hematopoiesis (D3)

Organizers: Daniel Starczynowski, Ross L. Levine and Hanna K.A. Mikkola
Apr 3–7, 2020 | Big Sky Resort | Big Sky, Montana | USA

PI3K and PTEN at the Interface of Cell Growth, Vesicular Trafficking and Disease (E1)

Organizers: Bart Vanhaesebroeck, Volker Haucke and Lori Friedman
May 3–7, 2020 | Herrenhausen Palace | Hannover | Germany

Single Cell Biology: Pushing New Frontiers in the Life Sciences (F1)

Organizers: Charles Ansong, Nikolaus Rajewsky and Massimiliano Pagni
May 4–8, 2020 | Firenze Fiera – Fortezza da Basso | Florence, Italy

Neurocircuitry of Social Behavior (L4)

Organizers: Hee-Sup Shin, Larry Young, Hailan Hu and Carmen Sandi
May 10–13, 2020 | Daejeon Convention Center | Daejeon | South Korea

Cryo-EM for Health Science (E2)

Organizers: Hongwei Wang, Nieng Yan, Claudio Ciferri and Erik Lindahl
May 12–16, 2020 | Clarion Hotel Sign | Stockholm | Sweden

Inflammation, Microbiota and Cancer (E3)

Organizers: Giorgio Trinchieri, Jenny P.Y. Ting, Hsing-Jien Kung and Jennifer A. Wargo
May 17–21, 2020 | Humanities/Social Sciences Building of Academia Sinica | Taipei | Taiwan

Mitochondrial Biochemistry in Health and Disease (Z1)

Organizers: Dave Pagliarini, Benjamin Tu and Alice Y. Ting

joint with

Adaptive ROS Signaling in Physiology and Disease (Z2)

Organizers: Michael Ristow, Navdeep S. Chandel, Marcia C. Haigis and Yvonne M. Janssen-Heininger
May 17–21, 2020 | Whistler Conference Centre | Whistler, British Columbia | Canada

Maternal-Fetal Crosstalk (Z3)

Organizers: Sing Sing Way, Carole R. Mendelson and Michal A. Elovitz

joint with

Immunity in Early Life:

From the Maternal to the Microbial Environment (Z4)

Organizers: Chris Wilson, Tobias Kollmann and Claire-Anne Siegrist
Jun 7–11, 2020 | Keystone Conference Center | Keystone, Colorado | USA

Neuro-Immune Interactions in the Central Nervous System (Z5)

Organizers: Marco Colonna, Shilpa Sambashivan and Michael T. Heneka

joint with

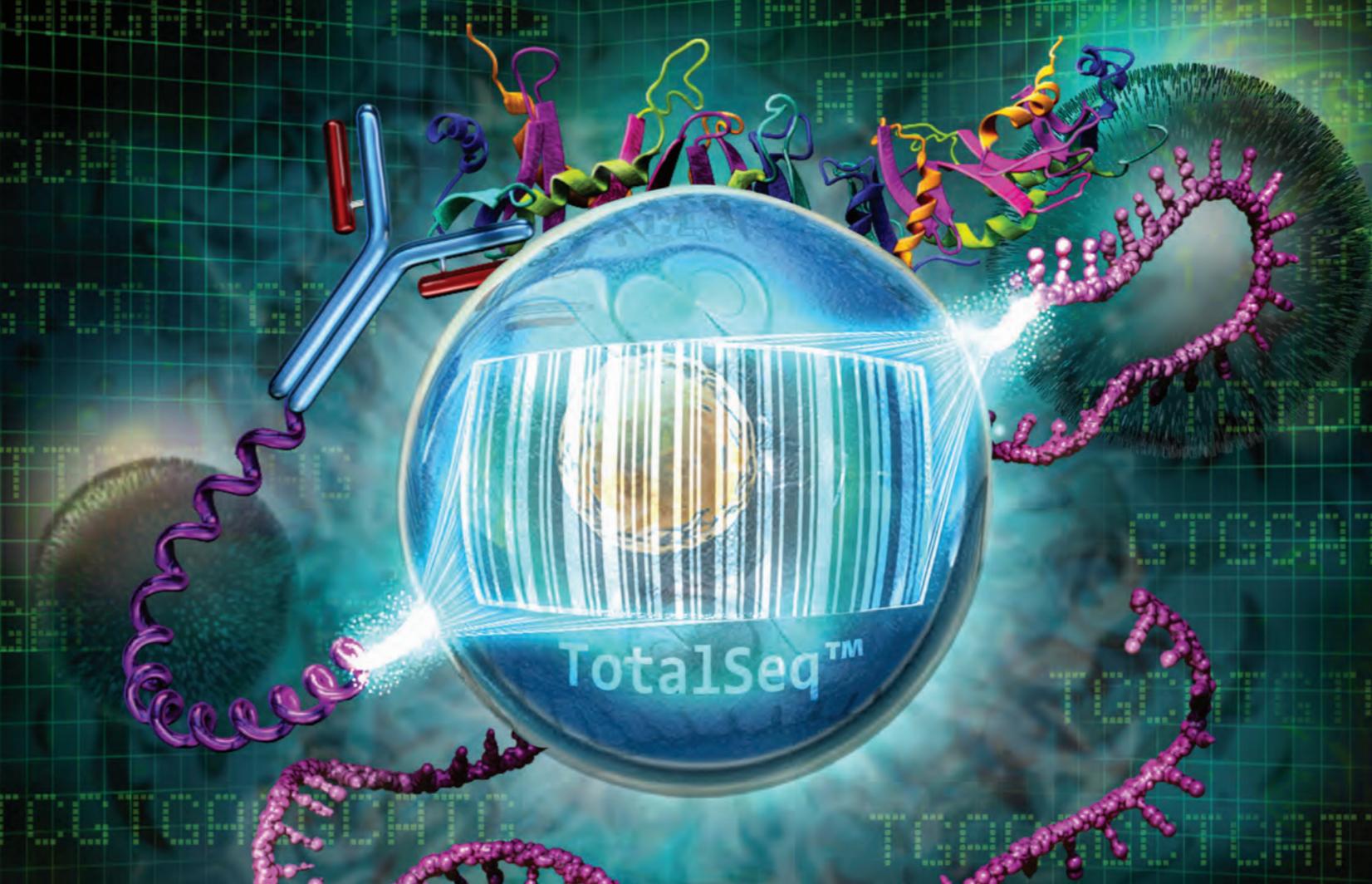
Cellular Pathways Driving Neurodegeneration and Future Therapeutics (Z6)

Organizers: Dimitri Krainc and Alfred W. Sandrock Jr.
Jun 19–23, 2020 | Keystone Conference Center | Keystone, Colorado | USA

NMR in Biological Mechanisms (E5)

Organizers: Teresa Carlomagno, Mei Hong and Ichio Shimada
Jun 21–24, 2020 | Herrenhausen Palace | Hannover | Germany

Conference dates are listed with the first date typically being that of afternoon registration and an evening welcome mixer, and the last day when organized sessions conclude, usually in the evening with a closing plenary session followed by food and entertainment. However, some program formats vary. Please check our website for program specifics for each individual meeting. You can view each program directly by entering www.keystonesymposia.org and then /20 and the alpha-numeric program code (e.g., www.keystonesymposia.org/20A1).



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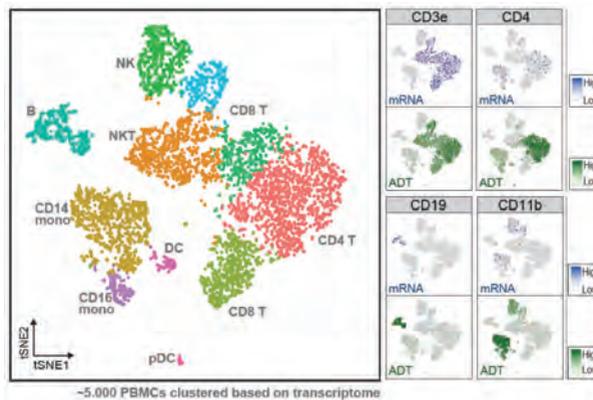
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