



RNA Canada 2024

The Future of RNA Technology

An event organized by RiboClub in collaboration with RiboWest and TREN D, celebrating 25 years of RiboClub's and 20 years of RiboWest's support for RNA research networks in Canada, and inaugurating the conception of RNA Canada.

September 30 - October 4, Ottawa Convention and Event Centre, Ottawa, Ontario

Day 1 - Monday, September 30th

- 13:30 – 17:00: Registration
- morning – 16:00: Voluntary activity celebrating National Day for Truth and Reconciliation (possibility of participating in events taking place in Ottawa)
- 16:00 – 17:00: Welcome reception (opened by the local organizers Jocelyn Cote / Tommy Alain)

- **Opening session host:** Tommy Alain, University of Ottawa
- 17:00 - 17:45 Opening of meeting by Indigenous community elder with traditional music (drumming) and ceremony
- 17:45 – 18:15: Opening dinner and welcome notes (President of RNA Canada followed by opening note by the designated representative of the government of Canada (open to journalists))
- 18:15 – 18:40: First course is served
- 18:40 – 18:45: Introduction of Keynote I (Benjamin Blencowe, University of Toronto, Toronto)
- 18:45 – 19:15: Opening Keynote, RNA Biology to Therapeutics: An Emerging Story (open to journalists)
Phillip Sharp, MIT, Cambridge, Massachusetts Institute of Technology (MIT), Nobel Prize in Physiology or Medicine 1993

- 19:15 – 19:25: Question period animated by Benjamin Blencowe and a representative of the Platinum Partner

- 19:25 – 20:45: Dinner is served



- 20:45 – 21:45: Roundtable Discussion: Revolutionizing RNA research: How Industry and RNA biologists can team up to meet changing needs

- **Session host:** Jocelyn Côté, University of Ottawa
- Moderator: TBD
- Panelists:
 - Leslie Madden (Head of Regulatory Science, Canada at Moderna Canada)
 - Normand Blais (Senior Director, Development & Innovation, Biologics, BioVectra)
 - Representative of adMare
 - Representative of CQDM
 - Thomas Duchaine (Professor, McGill University, D2R)



Day 2 - Tuesday, October 1st

- 07:00 – 08:15: Breakfast.
- **Session host:** Marc Fabian, McGill University
- 08:15 – 08:25: Opening Notes and Announcements (Organizers, Open for journalists)
- 08:25 – 10:00: “Promises and Challenges of RNA-based Medicines”. Short presentation by Adrian Krainer and Pieter Cullis (inventors of early RNA drugs and vaccine technologies) followed by a Panel discussion
- Moderator: TBD
- Panelists:
 - Sarit Assouline (Chief of Hematology, Jewish General Hospital)
 - Jared Davis (President and CTO of Northern RNA)
 - Pieter Cullis (Professor, University of British Columbia, Gairdner Awardee)
 - Adrian Krainer (St. Giles Foundation Professor, Cold Spring Harbor)
 - Phillip Sharp (Professor, Koch Institute, MIT, Nobel Laureate)

10:00 – 10:20 Coffee Break

10:20 - 12:30: Concurrent Session 1A: Session 1A: RNA enzymes, aptamers, sensors, and bioengineering (part I)

- **Session host:** Jonathan Perreault, Institut National de la Recherche Scientifique (INRS)
- **Chair:** Peter Unrau, Simon Fraser University
- **10:20 – 10:25: Introduction by Chair**
- **10:25 – 10:40: Dan Herschlag, Stanford University**
Current-day lessons from decades of ribozyme research
- **10:40 – 10:55: Anna Blakney, University of British Columbia**
Design of next-generation saRNA vectors
- **10:55 – 11:10: Ronald Breaker, Yale University**
Determining the Functions of Large Structured Noncoding RNAs in Bacteria
- **11:10 – 11:25: Saurja DasGupta, University of Notre Dame**
Evolution of RNA-catalyzed RNA assembly: from primordial to modern substrate activation
- **11:25 – 11:40: Kasimir Kienbeck, University of Zurich**
Discovery and Structural Insights of Theta Ribozymes
- **11:40 – 11:55: Juewen Liu, University of Waterloo**
Capture-SELEX of aptamers: revisiting old target molecules
- **11:55 – 12:05: Poster Flash talks**
- **12:05 – 12:30: Panel discussion led by session chair**



10:20 - 12:45: Concurrent Session 1B: RNA processing, maturation, and disease (part I)

- **Session host: John Calarco, University of Toronto**
- **Chair: Hong Han, McMaster University**
- **10:20 – 10:25: Introduction by Chair**
- **10:25 – 10:40: Benjamin Blencowe, University of Toronto**
Exon- and Intron-resolution Functional Genomics
- **10:40 – 10:55: Scott Kennedy, Harvard Medical School**
A conserved system that excises transposons from host mRNAs
- **10:55 – 11:10: Sarah Assmann, Penn State University**
RNA structure-function relationships in plant abiotic stress tolerance
- **11:10 – 11:25: Jamal Tazi, Montpellier University**
Structural basis for targeting the Cap Binding Complex by potent anti-inflammatory drug candidates
- **11:25 – 11:40: Gregg Morin, University of British Columbia**
CDK12 and CDK13, paralogues with specific and common cell type RNA processing function
- **11:40 – 11:55: Pedro Miura, UConn Health**
Long read RNA sequencing reveals alternative exon to 3'UTR connectivity in Neurons
- **11:55 – 12:10: Krysta Coyle, Simon Fraser University**
Evaluating the impact of mutated splicing factors in mature B-cell malignancies
- **12:10 – 12:20: Poster Flash talks**
- **12:20 – 12:45: Panel discussion led by session chair**

10:20 - 12:30: Concurrent Session 1C: RNA modifications (part I)

- **Session host: Nehal Thakor, University of Lethbridge**
- **Chair: Ly Vu, University of British Columbia**
- **10:20 – 10:25: Introduction by Chair**
- **10:25 – 10:40: Katharina Höfer, MPI for terrestrial microbiology, Marburg**
RNAylation of proteins: Discovery of a molecular glue to link RNA and proteins
- **10:40 – 10:55: Tao Pan, University of Chicago**
Coordination of multiple RNA modifications in mRNA and tRNA
- **10:55 – 11:10: Ryan Hili, York University**
Photochemical approaches to sequence methylated guanine in RNA
- **11:10 – 11:25: Sujin Kim, Boston Children's Hospital, Harvard Medical School**
m3C32 tRNA modification controls serine codon-biased mRNA translation, cell cycle, and DNA-damage response
- **11:25 – 11:40: Yu Zhou, Wuhan University**
Nuclear Retention Coupled with Sequential Polyadenylation Dictates Post-transcriptional m6A Modification in the Nucleus
- **11:40 – 11:55: Laurence Faucher-Giguère, Université de Sherbrooke**



SNORA81-Guided Ribosomal RNA Pseudouridylation Reprograms the Translation Profile of High-Grade Ovarian Cancer

- **11:55 – 12:05: Poster Flash talks**
- **12:05 – 12:30: Panel discussion led by session chair**

12:30 – 14:30: Networking and discussion lunch including concurrent sessions:

1. Career planning, Mentor-Mentee Lunch, organized and hosted by the students' representatives, Laurence Faucher-Giguère and Morgane Da Rocha.
2. Sponsors presentation Lunch, organized and hosted by Jonathan Perreault, Institut National de la Recherche Scientifique.
3. Open discussion and lunch with heads of funding agencies, organized and hosted by Trushar Patel, University of Lethbridge

14:30 - 16:40: Concurrent Session 2A: RNA, viruses, and manipulation of their hosts (part I)

- **Session host: Jennifer Corcoran, University of Calgary**
- **Chair: Selena Sagan, University of British Columbia**
- **14:30 – 14:35: Introduction by Chair**
- **14:35 – 14:50: Anne Simon, University of Maryland and Silvec Biologics**
Solving a 25 year Conundrum: Stabilizing hairpin inserts in RNA Virus Vectors Reveals Insights into Parameters Dictating Virus Genome Structure
- **14:50 – 15:05: John Bell, Ottawa Hospital Research Institute**
Development of RNA based viral vectors for cancer therapy
- **15:05 – 15:20: Beatriz Fontoura, UT Southwestern**
Inhibition of mRNA Nuclear Export Promotes SARS-CoV-2 Pathogenesis
- **15:20 – 15:35: Simon Boudreault, University of Pennsylvania**
Innate immune sensing controls EIF4A2 alternative splicing in response to dsRNA and viral infection
- **15:35 – 15:50: Rory Mulloy, University of Calgary**
P-body interaction with coronavirus RNA determines the outcome of an infection
- **15:50 – 16:05: Alex Borodavka, Cambridge University**
How do RNA Viruses Use RNP Granules and RNA Chaperones to Assemble Multi-Segmented Genomes?
- **16:05 – 16:15: Poster Flash talks**
- **16:15 – 16:40: Panel discussion led by session chair**

14:30 - 16:40: Concurrent Session 2B: RNA-binding proteins

- **Session host: Olivier Binda, University of Ottawa**



- **Chair: Mark Bayfield, York University, York**
- **14:30 – 14:35: Introduction by Chair**
- **14:35 – 14:50: Brenton Graveley, Institute for Systems Genomics, UConn Health**
A Comprehensive Binding and Functional Map of Human RNA Binding Proteins
- **14:50 – 15:05: Gene Yeo, University of California, San Diego**
Large-scale map of RNA binding protein interactomes across the mRNA life-cycle
- **15:05 – 15:20: Kristin Hope, University Health Network, University of Toronto**
In Vivo Screening Unveils Pervasive RNA-Binding Protein Dependencies in Leukemic Stem Cells
- **15:20 – 15:35: Debashish Ray, University of Toronto**
Genome-wide analysis of the RNA-binding specificities of human canonical and unconventional RNA-binding proteins
- **15:35 – 15:50: Julie Bourassa, University of Ottawa**
Modulation of HuD RNA binding through CARM1 methylation in neurons
- **15:50 – 16:05: Sarah Hughes, University of Alberta**
Investigating the Post-transcriptional Regulation of the SWI/SNF chromatin remodelling subunit SMARCB1
- **16:05 – 16:15: Poster Flash talks**
- **16:15 – 16:40: Panel discussion led by session chair**

14:30 - 16:40: Concurrent Session 2C: regulatory RNAs: markers, targets, structure and function (part I)

- **Session host: Juewen Liu, University of Waterloo**
- **Chair: Martin Simard, Centre de Recherche du CHU de Québec-Université Laval**
- **14:30 – 14:35: Introduction by Chair**
- **14:35 – 14:50: Alan Lambowitz, The University of Texas at Austin**
TGIRT-seq analysis of FLEXIs and Inflammatory Breast Cancer
- **14:50 – 15:05: John Mattick, UNSW Sydney**
Enhancers are genes
- **15:05 – 15:20: Sean McKenna, University of Manitoba**
A novel non-coding Alu RNA critical for cancer cell survival
- **15:20 – 15:35: Jeannie Lee, Massachusetts General Hospital**
XIST RNA as a Therapeutic Target for X-linked Neurodevelopmental Disorders
- **15:35 – 15:50: Victor Ambros, University of Massachusetts Medical School**
MicroRNA-mediated gene regulation and developmental robustness
- **15:50 – 16:05: Lara Mahal, University of Alberta**
Upregulation of Protein Expression by direct miRNA:mRNA interactions Is Coordinated in Regulatory Networks
- **16:05 – 16:15: Poster Flash talks**
- **16:15 – 16:40: Panel discussion led by session chair**



- 16:40: Coffee break and poster session.
- 16:40 – 18:40: Poster competition (Even numbers). Organized by Jean-Phillippe Brosseau, Université de Sherbrooke.
- 18:40 – 20:30: Dinner with featured speaker Jack Keene, hosted and moderated by Kathy Borden (Attendance is on first come first service basis so please reserve your place early)
- 20:30 – 21:30: Roundtable Discussion: Stories from the clinic (including Patients, clinicians, and charities, open to journalists)
- Hosted and Moderated by: Haissi Cui, University of Toronto, and Katherine Borden, Université de Montréal
- Panelists:
 - Teri DeClercq- parent of a patient
 - Lauren Frenz- parent of a patient
 - Terry Hawrysh-patient
 - Florian Kuchenbauer- UBC, physician, adult cancer
 - Kris Noakes-patient
 - Aren Marshall- University of Ottawa physician, pediatric genetic diseases
- 21:30 – Free Social Gathering.



Day 3 - Wednesday, October 2nd

- 07:00 – 08:15: Breakfast.

08:15 - 10:40: Concurrent Session 3A: mRNA translation and the Ribosome (part I)

- **Session host:** Eric Jan, University of British Columbia
- **Chair:** Olena Zhulyn, SickKids Hospital, University of Toronto
- **08:15 – 08:20: Introduction by Chair**
- **08:20 – 08:35: Joseph Puglisi, Stanford University**
Dynamics of translation
- **08:35 – 08:50: Maria Barna, Stanford University**
Ribosomes in Gene Regulation: Controlling the diversity of proteins made in specific cells, tissues and organisms
- **08:50 – 09:05: Marlene Oeffinger, Université de Montréal, McGill University**
*Compositionally distinct 5.8S-L rRNA ribosomes function in translation of differential mRNAs in *S. cerevisiae**
- **09:05 – 09:20: Thomas Dever, NIH**
eIF5A is a Sensor and Effector for Polyamine Regulation of Translation
- **09:20 – 09:35: Nehal Thakor, University of Lethbridge**
Establishing preclinical rationale for targeting eukaryotic initiation factor 5B for oral squamous cell carcinoma treatment
- **09:35 – 09:50: Sarah Svensson, Shanghai Institute of Immunity and Infection / CAS**
*Expression maps in *Vibrio parahaemolyticus* reveal a clade-specific dual-function RNA *RyhB**
- **09:50 – 10:05: Laura Hulea, Université de Montréal**
Characterization of the role of eIF4A in the resistance of acute myeloid leukemia to chemotherapy and targeted therapies
- **10:05 – 10:15: Poster Flash talks**
- **10:15 – 10:40: Panel discussion led by session chair**

08:15 - 10:40: Concurrent Session 3B: Ribonucleoprotein granules and RNA in motion (part I)

- **Session host:** Marc Fabian, McGill University
- **Chair:** Maria Vera Ugalde, McGill University
- **08:15 – 08:20: Introduction by Chair**
- **08:20 – 08:35: Daniel Zenklusen, Université de Montréal**
Investigating the role of intron RNP topology in facilitating splicing
- **08:35 – 08:50: Yifan (Eva) Wang, University of Toronto**
RanBP2/Nup358 is required at the nuclear pore to repress cytokine mRNAs
- **08:50 – 09:05: Timothy Audas, Simon Fraser University**



Heat-Sensitive RNA Pol I-mediated Transcription Regulates the Expression of Amyloidogenic Noncoding RNA

- **09:05 – 09:20: Priya R. Banerjee, SUNY Buffalo**
Biomolecular Condensates Can Enhance Pathological RNA Clustering
- **09:20 – 09:35: Eric Lecuyer, IRCM**
Systematic characterization of RNA binding proteins sequestered by disease-associated repeat expansion RNAs
- **09:35 – 09:50: Nils Walter, University of Michigan**
Single molecule tracking reveals nanodomains in biomolecular condensates
- **09:50 – 10:05: Julie Claycomb, University of Toronto**
*Proximity Labeling Identifies New Germ Granule and Germline Small RNA Factors in *C. elegans**
- **10:05 – 10:15: Poster Flash talks**
- **10:15 – 10:40: Panel discussion led by session chair**

08:15 - 10:40: Concurrent Session 3C: RNA biology in disease and untapped fields (part I)

- **Session host: Juewen Liu, University of Waterloo**
- **Chair: Zofia Chrzanowska, Newcastle University**
- **08:15 – 08:20: Introduction by Chair**
- **08:20 – 08:35: Christine Vande Velde, CRCHUM, Université de Montréal**
TDP-43 and stress granules in ALS/FTD
- **08:35 – 08:50: Katherine L.B. Borden, Université de Montréal**
Disrupted mRNA metabolism in Cancer
- **08:50 – 09:05: Shuo Gu, National Cancer Institute**
Pathogenic DICER1 RNase IIIb hotspot mutation leads to dysregulation of argonaute strand selection
- **09:05 – 09:20: Daniel Kim, University of California Santa Cruz**
Advancing RNA liquid biopsy technology via nanopore sequencing
- **09:20 – 09:35: Didier Stainier, Max Planck Institute for Heart and Lung Research**
Transcriptional adaptation, an RNA-based mechanism for genetic compensation.
- **09:35 – 09:50: Poul Sorensen, University of British Columbia**
Oncogenic ETS fusions promote expression of repeat element rich pericentromeric RNAs that induce proinflammatory responses via dissemination in extracellular vesicles
- **09:50 – 10:05: Catherine Riggs, The Rory Belle Foundation**
Caregiver reported data for NARS1 disorder as described by the patient advocacy organization and RARE-X
- **10:05 – 10:15: Poster Flash talks**
- **10:15 – 10:40: Panel discussion led by session chair**
- **10:40 Coffee break and poster session.**



- 10:40 – 12:40: Poster competition (Odd numbers). Organized by Jean-Phillippe Brosseau, Université de Sherbrooke.
- 12:40 – 14:45: Lunch.
- 12:40 – 14:45: Concurrent with lunch: EDI workshop with Imogen Coe, Toronto Metropolitan University, hosted by Michelle Scott, Université de Sherbrooke
 - 30 minutes group discussion followed by separate principal investigator and trainee workshops

Public Session and engagement with members of government (Open to Journalists, hosted by Trushar Patel, University of Lethbridge)

- 14:45 – 14:55: Opening of public session (**Trushar Patel, University of Lethbridge**)
- 14:55 – 15:05: Government's role in supporting RNA Research (TBD)
- 15:05 – 15:20: Introducing RNA Canada ARN (**Howard Lipshitz, University of Toronto, Chair of board of directors**)
- 15:20 – 15:30: Introduction of speaker (**Anne-Claude Gingras, Lunenfeld-Tanenbaum Research Institute, University of Toronto**)
- 15:30 – 15:55: History and contribution of Canadian Research (**Nahum Sonenberg, Gairdner Awardee, McGill University**)
- 15:55 – 16:15: Coffee break.
- 16:15 – 16:20: Introduction of speaker (**Michael Charette, Brandon University**)
- 16:20 – 16:30: RNA: the epicenter of genetic information (**John Mattick, UNSW Sydney**)
- 16:30 – 16:35: Introduction of speaker (**John Calarco, University of Toronto**)
- 16:35 – 17:05: RNA: A catalyst for public engagement in science (**Thomas Cech, Nobel laureate, University of Colorado Boulder, HHMI**)
- 17:05 – 17:10: Introduction and announcement of the concurrent activities (Trushar Patel, University of Lethbridge and Jonathan Perreault, IRCM).

Concurrent evening activities (open to journalists, cocktails and finger food will be available throughout the different activities):

- 17:10 – 18:00: Book signings by John Mattick and Thomas Cech

Concurrent session A: hosted by Trushar Patel (University of Lethbridge) and Katherine Borden (Université de Montréal)

- 17:15 – 18:00: Concurrent A: RNA technologies, meet those who would benefit from RNA technologies



- 18:00 – 18:45: Concurrent A: RNA technologies, meet those who will make tomorrow's RNA technologies

Concurrent session B: hosted by Jonathan Perreault, Institute National de la Recherche Scientifique (INRS)

- 17:15 – 18:15: Concurrent B: Networking and future collaborations
- 18:15 – 19:15: Concurrent B: Opportunity for organized meetings in semi-private rooms

Concurrent session C: hosted by Haissi Cui, University of Toronto

- 17:15 – 19:15: Concurrent C: RNA Canada job fair and job interviews
- 19:15 – Extended time for breakout discussions and Free social time



Day 4 - Thursday, October 3rd

- 07:00 – 08:15: Breakfast.

8:15 - 10:35: Plenary Session: RNA: A new frontier for agriculture

- **Session host and Chair: Mark Belmonte, University of Manitoba**
- **08:15 – 08:20: Introduction by Chair**
- **08:20 – 08:35: Hirbod Bahrani, Agriculture and agri-food Canada (AAFC)**
*Application of RNA-spray as a bio-fungicide to protect canola (*Brassica napus L.*) against blackleg disease*
- **08:35 – 08:50: Steve Whyard, University of Manitoba**
RNA interference technologies to control pest insects
- **08:50 – 09:05: Hailing Jin, UC Riverside**
Nanotechnology enabled spray induced gene silencing for crop protection
- **09:05 – 09:20: Steve Robinson, Agriculture Canada**
Developing RNAi-based fungicides to control fusarium head blight
- **09:20 – 09:35: William Moar, Bayer Crop Science**
Title TBD
- 09:35 – 10:35: Roundtable Discussion: The future applications of RNA technologies for agriculture and food security
- Moderator: Mark Belmonte (University of Manitoba)
- Panelists:
 - Chris Manchur (Canola Council of Canada)
 - Steve Whyard (University of Manitoba)
 - Hailing Jin (UC Riverside)
 - Steve Robinson (Agriculture Canada)
 - William Moar (Bayer Crop Science)
- 10:35 – 10:55: Coffee break.

10:55 – 13:05: Concurrent Session 4A: RNA enzymes, aptamers, sensors, and bioengineering (part II)

- **Session host: Juewen Liu, University of Waterloo**
- **Chair: Yingfu Li, McMaster University**
- **10:55 – 11:00: Introduction by Chair**
- **11:00 – 11:15: Hyongsok Tom Soh, Stanford University**
Continuous in vivo Molecular Detection Using Aptamer Switches
- **11:15 – 11:30: Nebojsa Janjic, IND/Somalogic**
Aptamers with base modification. Structural rationale for enhanced molecular recognition of proteins
- **11:30 – 11:45: Yong Wang, Penn State**



Biomaterial Development Through Aptamers

- **11:45 – 12:00: Maureen McKeague, McGill University**
Aptazymes as non-invasive biosensors in live cells and animals
- **12:00 – 12:15: Marc-Antoine Turcotte, Université de Sherbrooke**
Inducing RNA structures with antisense oligonucleotides to repress translation
- **12:15 – 12:30: Eric Hayden, Boise State University**
High-throughput ribozyme assays for RNA innovations
- **12:30 – 12:40: Poster Flash talks**
- **12:40 – 13:05: Panel discussion led by session chair**

10:55 – 13:05: Concurrent Session 4B: AI, computational biology, and emerging approaches in RNA biology

- **Session host: Michelle Scott, Université de Sherbrooke**
- **Chair: Davoud Torkamaneh, Université Laval**
- **10:55 – 11:00: Introduction by Chair**
- **11:00 – 11:15: Jérôme Waldispühl, McGill University**
Fast and accurate RNA virtual screening using non-canonical RNA base pair interaction networks and graph machine learning
- **11:15 – 11:30: Martin Smith, UNSW**
Single-molecule (epi)transcriptomics for the real-time diagnosis of complex disease & functional characterization of lncRNAs
- **11:30 – 11:45: Xiao Wang, Broad Institute, MIT**
Deconstruct and reprogram RNA life cycle
- **11:45 – 12:00: Étienne Fafard-Couture, Université de Sherbrooke**
SnoBIRD: Applying machine learning to refine snoRNA annotations across eukaryotes
- **12:00 – 12:15: Michael McGurk, Massachusetts Institute of Technology**
KATMAP: Inferring splicing factor activity and regulatory targets from knockdown data
- **12:15 – 12:30: Lan Lin, The Children's Hospital of Philadelphia and UPenn**
TEQUILA-seq: A versatile and low-cost method for targeted long-read RNA sequencing.
- **12:30 – 12:40: Poster Flash talks**
- **12:40 – 13:05: Panel discussion led by session chair**

10:55 – 13:05: Concurrent Session 4C: RNA, viruses, and manipulation of their hosts (part II)

- **Session host: Jennifer Corcoran, University of Calgary**
- **Chair: Artem Babaian, University of Toronto**
- **10:55 – 11:00: Introduction by Chair**
- **11:00 – 11:15: Jeffrey S. Kieft, New York Structural Biology Center**
How viral RNAs use structure and dynamics to manipulate the cellular machinery
- **11:15 – 11:30: Anna Marie Pyle, Yale University**



Panning for gold: Discovering riboregulatory motifs in vast expanses of viral RNA sequence... and finding them in unexpected places

- **11:30 – 11:45: Peter Sarnow, Stanford University**
Virus-derived circular RNAs populate cytoplasmic RNA virus-infected cells
- **11:45 – 12:00: Jessica Tucker, University of Iowa**
Gammaherpesvirus infection triggers the formation of tRNA fragments from premature tRNAs
- **12:00 – 12:15: Clement Mazeaud, Centre Armand-Frappier Santé Biotechnologie, INRS**
Zika virus remodels and hijacks IGF2BP2 ribonucleoprotein complex to promote viral replication organelle biogenesis
- **12:15 – 12:30: Subash Chapagain, University of British Columbia**
Discovery of internal ribosome entry sites driven alternative frame translation through metagenomic data mining
- **12:30 – 12:40: Poster Flash talks**
- **12:40 – 13:05: Panel discussion led by session chair**

- 13:05 – 14:45: Concurrent Lunch Roundtable Discussion: Regulation and evaluation of RNA-based technologies, hosted by Jonathan Perreault, Institut National de la Recherche Scientifique
- Moderator: Dan Edgcumbe (Roche) - pending
- Panelists:
 - Mélanie Caron, Directrice, Direction de l'évaluation des médicaments et des technologies à des fins de remboursement, Institut national d'excellence en santé et en services sociaux (INESSS)
 - Representative from Health Canada (TBD)

- 13:05 – 14:45: Concurrent Lunch Roundtable Discussion: Training and job opportunities in the new era of RNA biology
- Moderators and session hosts: Morgane Da Rocha and Jacob Fine, trainees
- Panelists:
 - Craig Kerr (Inceptivo)
 - Tien-Hao Chen (NEB)
 - William Moar (Bayer Crop Science)
 - Catia Perciani (Moderna)

- 14:45 – 16:55: Concurrent Session 5A: RNA modifications (part II)**
 - Session host: Marc Fabian, McGill University
 - Chair: Ryan Hili, York University
 - 14:45 – 14:50: Introduction by Chair
 - 14:50 – 15:05: Wendy Gilbert, Yale University



Unexpected roles of RNA modifying enzymes in health and disease

- **15:05 – 15:20: Ute Kothe, University of Manitoba**
Conserved tRNA modifications globally modulate tRNA maturation, protein synthesis and cellular fitness
- **15:20 – 15:35: Stephen Rader, University of Northern British Columbia**
*sisRNAs: an explanation for intron retention in the extremophilic alga *Cyanidioschyzon merolae**
- **15:35 – 15:50: Lucas Miller, University of Texas at Austin**
Selective 8-oxo-rG stalling occurs in the catalytic core of polynucleotide phosphorylase (PNPase) during degradation
- **15:50 – 16:05: Ruth Glasgow, Karolinska Institutet**
RNA methylation is critical at two distinct stages of mitochondrial gene expression
- **16:05 – 16:20: Favour Oyelami, Australian National University**
Conservation and Functional Insights of the m6A Epitranscriptome Across Mammalian Species
- **16:20 – 16:30: Poster Flash talks**
- **16:30 – 16:55: Panel discussion led by session chair**

14:45 – 16:55: Concurrent Session 5B: mRNA translation and the Ribosome (part II)

- **Session host: Nehal Thakor, University of Lethbridge**
- **Chair: William James Faller, The Netherlands Cancer Institute, Amsterdam**
- **14:45 – 14:50: Introduction by Chair**
- **14:50 – 15:05: Rachel Green, Johns Hopkins University**
Concentration matters: Regulation of ribosome homeostasis during cellular stress
- **15:05 – 15:20: Maria Vera Ugalde, McGill University**
Organism-dependent differences in mRNA sequences regulate the heat shock response
- **15:20 – 15:35: Anne Willis, University of Cambridge**
eIF5A-dependent feedback inhibition from mRNA translation elongation to initiation induces apoptosis in tumour cells
- **15:35 – 15:50: Jean-Denis Beaudoin, University of Connecticut Health Center**
NaP-TRAP: a versatile technique to investigate translational control
- **15:50 – 16:05: Xinnian Dong, HHMI/Duke University; Tsinghua University; UNC Chapel Hill**
Pervasive downstream RNA hairpins dynamically dictate start-codon selection in regulation of stress protein translation
- **16:05 – 16:20: Scott Blanchard, St. Jude Children's Research Hospital**
mRNA decoding in human is kinetically and structurally distinct from bacteria
- **16:20 – 16:30: Poster Flash talks**
- **16:30 – 16:55: Panel discussion led by session chair**

14:45 – 16:55: Concurrent Session 5C: Regulatory RNAs: markers, targets, structure and function (part II)



- **Session host: Mark Belmonte, University of Manitoba**
- **Chair: Yu Zhou, Wuhan University**
- **14:45 – 14:50: Introduction by Chair**
- **14:50 – 15:05: Gisela Storz, National Institute of Child Health and Human Development**
Novel mechanisms of regulation by base pairing small RNAs
- **15:05 – 15:20: David Bartel, Massachusetts Institute of Technology, Whitehead Institute, Howard Hughes Medical Institute**
Regulation of mRNA Translation and Decay
- **15:20 – 15:35: David Baulcombe, Cambridge University**
RNA silencing and disease resistance in plants
- **15:35 – 15:50: Jayoung Ku, Boston Children's Hospital**
Alternative Polyadenylation Determines the Functional Landscape of Inverted Alu Repeats
- **15:50 – 16:05: Zhen Jin, University of British Columbia**
Long Non-coding RNA PAN3-ASI Represents a Novel Therapeutic Target in Acute Myeloid Leukemia
- **16:05 – 16:20: TinTin Luu, University of Toronto**
Targeting and Modulating Positive-Sense Viral RNA Regulatory Structures with Amiloride-Based Small Molecules
- **16:20 – 16:30: Poster Flash talks**
- **16:30 – 16:55: Panel discussion led by session Chair**

Thursday Gala Dinner at the Canadian Museum of History

- **16:00-18:00: Shuttle buses available for Transfer to the Canadian Museum of History (organized by Olivier Binda, University of Ottawa)**
- 17:00 – 19:00: Museum Visit
- 18:30 – 19:15: Networking Cocktail, Announcements by the local host Tommy Alain, University of Ottawa
- 19:15 – 19:20: RNA Canada Note, RNA Canada outreach committee
- 19:20 – 19:25: Message from Gold Sponsor of the dinner, Université de Sherbrooke
- 19:25 – 19:35: Welcome from a representative of the Canadian government (**TBD**).
- 19:35 – 20:35: Dinner
- 20:35 – 20:40: Introduction of Derrick Rossi by Janet Rossant, President and Scientific Director, The Gairdner Foundation
- 20:40 – 21:10: Stem cell science and the genesis of new therapeutic paradigms for patients, Derrick Rossi, Co-founder of MODERNA; CEO, New York Stem Cell Foundation
- 21:10 – 23.30: Entertainment - Elisapie and Dance



Day 5 - Friday, October 4th

- 07:00 – 08:30: Breakfast.

Concurrent Session 6A: Ribonucleoprotein granules and RNA in motion (part II)

- **Session host: Jocelyn Côté, University of Ottawa**
- **Chair: Eric Lecuyer, Institut de Recherches Cliniques de Montréal**
- **08:30 – 08:35: Introduction by Chair**
- **08:35 – 08:50: Iqra Yaseen, Simon Fraser University**
Robust-genetically encoded FRET for In Vitro and In Vivo studies of Cas9-gRNA
- **08:50 – 09:05: James M. Burke, University of Florida Scripps Institute**
Biomolecular condensation regulates cell-autonomous antiviral pathways
- **09:05 – 09:20: Swathi Yadlapalli, University of Michigan**
Post-transcriptional splicing of a single intron at the nuclear speckles controls 24-hour circadian rhythms
- **09:20 – 09:35: Gary Bassell, Emory University**
Association of Muscleblind-like 1 RNA binding protein domains with kinesins and endosomes regulates mrna granule trafficking in neurons
- **09:35 – 09:50: Stephanie Moon, University of Michigan**
Stress-induced gene mRNA condensation and expression are governed by ribosome association and the stress granule proteins G3BP1/2
- **09:50 – 10:00: Poster Flash talks**
- **10:00 – 10:20: Panel discussion led by session chair**

Concurrent Session 6B: RNA processing and maturation (part II)

- **Session host: John Calarco, University of Toronto**
- **Chair: Markus Hafner, National Institute of Arthritis and Musculoskeletal and Skin Diseases**
- **08:30 – 08:35: Introduction by Chair**
- **08:35 – 08:50: Thomas Gonatopoulos Pournatzis, National Cancer Institute/NIH**
Genome-Scale Exon Perturbation Screens Uncover Exons Critical for Cell Fitness
- **08:50 – 09:05: Benoit Chabot, Université de Sherbrooke**
Splicing Regulation: From Basic Principles to Disease Applications
- **09:05 – 09:20: Pallavi Pilaka, University of Toronto**
Investigating neuronal-specific repression of alternative splicing by the conserved CELF protein UNC-75 in C. elegans
- **09:20 – 09:35: Raymund J. Wellinger, Université de Sherbrooke**
Lessons from the yeast telomerase RNA: how to assemble something new from recycled parts.
- **09:35 – 09:50: Eric Lai, Sloan Kettering Institute**
Non-canonical role of ALAS1 as an inhibitor of RNA interference
- **09:50 – 10:00: Poster Flash talks**



- **10:00 – 10:20: Panel discussion led by session chair**

Concurrent Session 6C: RNA biology in disease and untapped fields (part II)

- **Session host: Eric Jan, University of British Columbia**
- **Chair: Neil Renwick, Queen's University**
- **08:30 – 08:35: Introduction by Chair**
- **08:35 – 08:50: Susan L. Ackerman, HHMI/University of California, San Diego**
Transfer RNAs as genetic modifiers of neurological disease
- **08:50 – 09:05: Mardin (Asghar) Fallah, University of Alberta**
Expanding the Horizons of RNA Biology: Direct Cell Reprogramming for Personalized Bone Cell Therapies through Self-Replicating RNA
- **09:05 – 09:20: Davide Ruggero, University of California, San Francisco**
Functional screen for mediators of onco-mRNA translation specificity
- **09:20 – 09:35: Peter Johnson, National Cancer Institute, NIH**
3'UTR-directed, kinase proximal mRNA decay inhibits post-translational activation of C/EBP β to suppress senescence in tumor cells
- **09:35 – 09:50: Janelle Sauvageau, National Research Council**
Synthetic GlycoRNAs generation, analysis and evaluation in Human foreskin fibroblast
- **09:50 – 10:00: Poster Flash talks**
- **10:00 – 10:20: Panel discussion led by session chair**

- **10:20 – 10:40: Coffee break.**

Closing Keynote:

- Session host: Haissi Cui, University of Toronto
- 10:40 – 10:45: Introduction of speaker by Haissi Cui, University of Toronto
- 10:45 – 11:15: Closing Keynote, **Lynne Maquat, University of Rochester, Gairdner International Awardee**
NCBP3 prevents the premature decay of intron-containing pre-mRNAs to activate mitochondrial function
- 11:15 – 11:25: Question period

11:25 – 12:25: Concluding Panel Discussion:

- Session host: John Calarco, University of Toronto
- 11:25-11:35 Opening remarks, introduction of panelists and summary of roundtables (Moderator)
- Moderator: Howard Lipshitz, Chair, Board of Directors, RNA Canada ARN & University of Toronto
- Panelists:
 - Cindy Bell (Chair, Diabetes Action Canada & Former Executive Vice President, Genome Canada)



- Adrian Krainer (Cold Spring Harbor Laboratory)
- Andre Picard (Journalist & Author, Globe & Mail)
- Phillip Sharp (Nobel Laureate, MIT)
- Derrick Rossi (Co-Founder, Moderna & CEO, New York Stem Cell Foundation)
- Senator Rosa Galvez (Independent Senator from Quebec)
- Pieter Cullis (Gairdner International Awardee, UBC)
- Mona Nemer (Chief Science Advisor Canada)
- 11:35-12:20 Series of questions posed by moderator for discussion by panelists and audience questions
- 12:20-12:25 Summary and next steps (Moderator)
- 12:25: [Light lunch and Departure](#)