RiboClub
Sherbrooke, Québec

RiboClub 2023

September 24-28, Hôtel Chéribourg, Orford, Québec

RNA vs pathogens: biology, medicine, and technology

Sunday, September 24th

13:30 – 14:30	Registration
14:30 – 17:00	RNA Canada outreach open house (exchange of information and ideas) Organized by: **RNA Canada Outreach Group**
17:00 – 18:00	Welcome reception (**Sponsored by Revvity)**
18:20 – 18:30	Welcome note **Michelle Scott**, Université de Sherbrooke and **Mélissa Léger-Abraham**, Harvard Medical School / Boston Children's Hospital, Boston
18:30 – 20:00	Opening dinner and welcome note
20:00 – 20:30	After dinner presentation *About uselessness in science teaching and discovery* **Eric Westhof**, Université de Strasbourg, Strasbourg Introduction by **Nahum Sonenberg**, McGill University, Montréal

Monday, September 25th

08:00 – 09:00	Registration
09:00 – 09:10	Opening notes and announcements (**Sherif Abou Elela**)
09:10 – 09:15	Presentation of keynote speaker **Marc Fabian**, McGill University, Montréal
09:15 – 10:15	*RNP Granules in viral infections and neurodegenerative disease* **Roy Parker**, University of Colorado Boulder, Boulder
10:15 – 10:45	Coffee break

Session 1: Viral response

Chair: **Aaron Schmidt**, Ragon Institute of MGH, MIT and Harvard, Boston

10:45 – 10:50	Introduction by **Aaron Schmidt**
10:50 – 11:05	*Micro(RNA)-managing Hepatitis C virus infection* **Selena Sagan**, University of British Columbia & McGill University, Montreal
11:05 – 11:20	*How a two-nucleotide difference in a 9.4 kilobase genome determines HIV-1 viral RNA fate* **Karin Musier-Forsyth**, Ohio State University, Columbus
11:20 – 11:35	*Rules that govern packaging and repackaging of HIV-1 genomic RNA* **Sebla Kutluay**, Washington University, St. Louis
11:35 – 11:50	*Zika virus remodels and hijacks insulin-like growth factor 2 mRNA-binding protein 2 (IGF2BP2) complexes during viral RNA replication* **Clément Mazeaud**, INRS - Centre Armand-Frappier Santé Biotechnologies, Laval
11:50 – 12:05	*Pervasive RNA folding is crucial for narnavirus genome maintenance* **Makiha Fukuda**, NYU Langone Health, New York

12:05 – 12:25 Panel discussion moderated by **Aaron Schmidt**

12:25 – 13:55 Mentoring lunch organized by **Eric Jan**, University of British Columbia, Vancouver

Session 2: Infection, immunology and host response

Chair: **Gaya Amarasinghe**, Washington University, St-Louis

13:55 – 14:00 Introduction by **Gaya Amarasinghe**

14:00 – 14:15 *Regulation of innate immune signaling via alternative splicing*
Kristen Lynch, University of Pennsylvania, Pennsylvania

14:15 – 14:30 *Involvement of a MRE11 isoform in the response to DNA damage and interferon stimulatory DNA pathways*
Muhammad Riaz Khan, Université of Sherbrooke, Sherbrooke

14:30 – 14:45 *Widespread retroposon elements within 3'UTRs are major players of mRNA abundance in the parasitic protozoan Leishmania*
Barbara Papadopoulou, Université Laval, Laval

14:45 – 15:00 *Anti-CRISPRS: Phage-encoded inhibitors of CRISPR-Cas systems*
Alan Davidson, University of Toronto, Toronto

15:00 – 15:30 Coffee break

15:30 – 15:45 *The role of phase separation on RNA degradosome function and stress response*
Seth Childers, University of Pittsburgh, Pittsburgh

15:45 – 16:05 Panel discussion moderated by **Gaya Amarasinghe**

Poster flash talks

Chair: **Laurence Faucher-Giguère**, Université de Sherbrooke, Sherbrooke

16:05 – 16:10 Introduction by **Laurence Faucher-Giguère**

16:10 – 16:12 *Development of an RNA-based probe for intracellular monitoring of oxidative stress*
Micaela Belleperche, McGill University, Montréal

16:12 – 16:14 *RNA vs. Ionizable Lipids: The When, Where, Why, and Who of mRNA/LNP Vaccine Adjuvancy in Skeletal Muscle*
Will Dowell, University of Vermont, Burlington

16:14 – 16:16 *Characterizing the interactions noncoding RNAs with epithelial-to-mesenchymal transcription factors in breast epithelial cells*
Elena Goretti, IRCM and McGill University, Montréal

16:16 – 16:18 *Genome-wide quantification of RNA flow across subcellular compartments reveals determinants of the mammalian transcript life cycle*
Robert Ietswaart, Harvard Medical School, Boston

16:18 – 16:20 *Let's stick together: characterizing a novel nuclear poly(A)-binding protein*
Mélodie Latour, Université de Sherbrooke, Sherbrooke

16:20 – 16:22 *Brand new TRAILer: A preview of targeting cancer cells apoptosis mechanism using TRAIL-R4*
Colin Poirier, Université de Sherbrooke, Sherbrooke

16:22 – 16:24 *A graph-based pipeline for mining structural motifs and assembling 3D structures from sequence*
Roman Sarrazin-Gendron, McGill University, Montréal

16:24 – 16:26 *You spin me round: The impact of G-quadruplex structures on the genesis and function of circular RNAs*
Michel-Pierre Terrier, Université de Sherbrooke, Sherbrooke

16:26 – 16:28 *Starvation modifies the splicing program of yeast pre-mRNA by altering the relative abundance of spliceosomal RNA protein complexes*
Jasmine Tsang, Université de Sherbrooke, Sherbrooke

16:28 – 16:30 *Translation is a key determinant controlling the fate of cytoplasmic long non-coding RNAs*
Maxime Wery, Institut Curie, Paris

16:30 – 17:30 Poster competition IA: (Odd numbers)

17:30 – 18:30 Poster competition IB: (Even numbers)

18:30 – 19:30 Dinner

19:30 – 21:00 Equity diversity and inclusion (EDI) Activity
Organized by the RNA Canada ARN EDI committee

Featuring:
Katherine Borden,
Institut de Recherche en Immunologie et Cancérologie, Montréal
Britt A. Glaunsinger,
UC Berkeley, Berkeley
Aaron Schmidt,
Ragon Institute of MGH, MIT and Harvard, Boston
Kristina Song,
Université de Sherbrooke, Sherbrooke

Moderated by **Muhammad Riaz Khan** and **Michelle Scott**,
Université de Sherbrooke, Sherbrooke

Tuesday, September 26th

07:00 – 08:30 Breakfast

Session 3: RNA therapeutics (Sponsored by Moderna)

Chair: **Ryan Flynn**, Harvard University, Boston

08:30 – 08:35 Introduction by **Ryan Flynn**

08:35 – 08:50 *Modulating the conformation and function of disease-relevant RNA with small molecules*
Amanda Hargrove, Duke University, Durham

08:50 – 09:05 *Broad-spectrum anti-coronaviral inhibitors of −1 programmed ribosomal frameshifting found by high-throughput virtual screening*
Sneha Munshi, University of Alberta, Edmonton

09:05 – 09:20 *Rewriting ABCA4 RNA for the treatment of Stargardt disease*
Robert Bell, Ascidian Therapeutics, Boston

09:20 – 09:35 *Living in the world of RNAi therapeutics*
Muthiah Manoharan, Alnylam Pharmaceuticals, Cambridge

09:35 – 09:50 *Therapeutic mitigation of the toxic phenotype induced by TDP-43 in animal models of ALS*
Cristian Droppelmann, Robarts Research Institute, Western University, London

09:50 – 10:10 Panel discussion moderated by **Ryan Flynn**

10:10 – 10:40 Coffee break

Session 4: Machine learning, computational biology, and databases

Chair: **Yoseph Barash**, University of Pennsylvania, Philadelphia

10:40 – 10:45 Introduction by **Yoseph Barash**

10:45 – 11:00 *Generative AI to accelerate RNA structure and function discovery*
Debora Marks, Harvard Medical School, Boston

11:00 – 11:15 *Localizing genetic risk factors to cell types with pathogenic gene dysregulation*
Olivia Corradin, MIT, Boston

11:15 – 11:30 *Improving Rfam the ncRNA family database with over 4000 entries*
Blake Sweeney, European Bioinformatics Institute, Hinxton

11:30 – 11:45 *Comprehensive translational profiling and STE AI uncover rapid control of protein biosynthesis during cell stress*
Nikolay Shirokikh, The Australian National University, Canberra

11:45 – 12:00 *Computational design of selective trans-acting hammerhead ribozymes*
Nawwaf Kharma, Concordia University, Montréal

12:00 – 12:20 Panel discussion moderated by **Yoseph Barash**

12:20 – 13:55 Lunch

12:45 – 13:45 *Panel on Quebec-funding opportunities for transfer of RNA research to the industry*
Participation of CQDM and Axelys

Session 5: RNA visualization and probing

Chair: **Éric Lécuyer,** Montréal Clinical Research Institute, Montréal

13:55 – 14:00 Introduction by **Éric Lécuyer**

14:00 – 14:15 *A platform for single cell spatial genomics*
Fei Chen, Broad Institute of MIT and Harvard University, Boston

14:15 – 14:30 *Probing uncharted landscapes of RNA-protein networks inside of the cell*
Chase Weidmann, University of Michigan Medical School, Ann Arbor

14:30 – 14:45	*P-bodies purified across the cell cycle reveal widespread differential RNA storage and a cell cycle-dependent P-body targeting mechanism* **Adham Safieddine**, Sorbonne Université, Paris
14:45 – 15:00	*Novel structural insights into Fluorogenic RNA Mango aptamers with picomolar binding affinities* **Peter Unrau**, Simon Fraser University, Burnaby
15:00 – 15:20	Panel discussion moderated by **Éric Lécuyer**
15:20 – 15:50	Coffee Break
16:00 – 17:00	Poster competition IIA (Even numbers) **(Sponsored by REMIX)**
17:00 – 18:00	Poster competition IIB: (Odd numbers) **(Sponsored by REMIX)**
18:00 – 19:00	RNA Canada information session (members & interested researchers) **Howard Lipshitz**, Chair of RNA Canada Board of Directors, University of Toronto, Toronto
19:00 – 20:00	Dinner
20:00 – 21:30	Panel discussion: **Going from academic RNA research to the industry**

Wednesday, September 27th

07:00 – 08:30 Breakfast

Session 6: Ribosomes and translation

Chair: **Haribabu Arthanari**, Harvard Medical School, Boston

08:30 – 08:35 Introduction by **Haribabu Arthanari**

08:35 – 08:50 *Enhancement of cellular mRNA translation in enterovirus-infected cells*
Nahum Sonenberg, McGill University, Montréal

08:50 – 09:05 *A two-pronged mechanism for activating the integrated stress response*
Hani Zaher, Washington University, St. Louis

09:05 – 09:20 *Mechanism of a small molecule translation inhibitor*
Susan Shao, Harvard Medical School, Boston

09:20 – 09:35 *The ribosome assembly disorder bowen-Conradi syndrome is due in part to a loss of protein-protein Interactions*
Michael Charette, Brandon University, Brandon

09:35 – 09:55 Panel discussion moderated by **Haribabu Arthanari**

09:55 – 10:25 Coffee Break

Session 7: RNA binding proteins (Sponsored by adMare BioInnovations)

Chair: **Jinwei Zhang**, NIH, Bethesda

10:25 – 10:30	Introduction by **Jinwei Zhang**
10:30 – 10:45	*Long noncoding RNAs at the intersection of cancer pathways* **Nadya Dimitrova**, Yale University, New Haven
10:45 – 11:00	*Functional control through RNA structure* **Sabine Schneider**, University of Munich (LMU), Munich
11:00 – 11:15	*Nuclear PKM2 binds folded G-quadruplexes on pre-mRNA and promotes their expression* **Markus Hafner**, NIH, Bethesda
11:15 – 11:30	*Understanding RBP specificity with real-time imaging of spliceosome assembly* **Daniel Larson**, NIH, Bethesda
11:30 – 11:45	*Single-molecule identification of the target RNAs of different RNA binding proteins simultaneously in cells* **Mathieu Flamand**, Université Laval, Québec
11:45 – 12:05	Panel discussion moderated by **Jinwei Zhang**
12:05 - 13:45	Lunch
13:00 – 13:40	*Translating scientific posters/presentations into social media and other outreach opportunities* **RNA Canada outreach group**

Session 8: RNA modifications and non-coding RNA

Chair: **Richard Gregory**, Harvard Medical School, Boston

13:45 – 13:50	Introduction by **Richard Gregory**
13:50 – 14:05	*(glyco)RNA biology on the cell surface* **Ryan Flynn**, Harvard University, Boston

14:05 – 14:20 *Identifying orphan snoRNA targets by chimeric eCLIP*
Amanda Whipple, Harvard University, Boston

14:20 – 14:35 *Argonomics: untangling argonaute/small RNA regulatory networks in C. elegans*
Julie Claycomb, University of Toronto, Toronto

14:35 – 14:50 *Infection-induced B2 SINE retrotransposon activation drives mRNA isoform switching*
Britt A. Glaunsinger, UC Berkeley, Berkeley

14:50 – 15:05 *Synthesis and function of queuosine in bacterial pathogens*
Valérie de Crécy-Lagard, University of Florida, Gainesville

15:05 – 15:20 *Dynamic interplay between tRNA processing, transport, and modification in T. brucei*
Juan Alfonzo, Brown University, Providence

15:20 – 15:35 *Uncovering new functions of RNA modification in mRNA processing*
Nicole M. Martinez, Stanford University, Stanford

15:35 – 15:55 Panel discussion moderated by **Richard Gregory**

15:55 – 16:25 Coffee Break

Session 9: Students' choice part I

Chairs: **Kristina Song** and **Morgane Da Rocha**, Université de Sherbrooke, Sherbrooke

16:25 – 16:30 Presentation of the Travel Awards
Kristina Song and **Morgane Da Rocha**

16:30 – 16:35 Presentation of the Best Monthly Seminar Award
Kristina Song and **Morgane Da Rocha**

16:35 – 16:55 Best Monthly Seminar Award Presentation (15 min + 5 min questions)

16:55 – 17:05 Photo

17:05 – 17:35 ARN Québec information session (for members of ARN Quebec)
Barbara Papadopoulou, Interim president of ARN Québec, Université Laval, Québec
in Abénaquis meeting room

17:05 – 18:05	Career Panel Discussion (trainees at all levels) **RNA Canada education committee** in Appalaches meeting room
17:05 – 17:30	Free time
17:30 – 18:45	Networking and cocktail
18:45 – 21:00	Industry gala dinner **(Sponsored by RNA Technologies & Therapeutics)**
21:00 – 21:10	Presentation of poster awards **Jean-Philippe Brosseau**, Université de Sherbrooke, Sherbrooke
21:10 – 21:20	Blue Jacket Award Presented by **Martin Simard**, CRCHU de Québec - Université Laval, Québec
21:30 – 22:00	After dinner presentation **Gabriel Lander**, Scripps Research Institute, San Diego Introduction by **Mélissa Léger-Abraham**, Harvard Medical School / Boston Children's Hospital, Boston
22:00 –	Entertainment

Thursday, September 28th

07:00 – 09:00 Breakfast

Session 10: Eukaryotic RNA maturation and decay

Chair: **Olivia Rissland**, University of Colorado, Denver

09:00 – 09:05 Introduction by **Olivia Rissland**

09:05 – 09:20 *Chronology of mRNP remodeling: Time-resolved profiling of RNA binding proteins throughout the mRNA life cycle*
Narry Kim, Seoul National University, Seoul

09:20 – 09:35 *Understanding splicing and isoform regulation across cell types, brain regions, postnatal development, and species*
Hagen Tilgner, Weill Cornell Medicine, New York

09:35 – 09:50 *Gene length drives the coupling of mRNA 5' and 3' ends based on genomic order*
Athma Pai, University of Massachusetts Medical School, Worcester

09:50 – 10:05 *Proximity-dependent biotinylation map of the RNAPII CTD reveals that the primary role of Serine 2 phosphorylation is in the suppression of cryptic antisense transcription and not in RNA 3' end processing*
François Bachand, Université de Sherbrooke, Sherbrooke

10:05 – 10:20 *Unraveling the intricacies of RNA transcription in high resolution*
Stirling Churchman, Harvard Medical School, Boston

10:20 – 10:40 Panel discussion moderated by **Olivia Rissland**

10:40 – 11:10 Coffee break

Session 11: Students' choice part II

Chairs: **Kristina Song** and **Morgane Da Rocha**, Université de Sherbrooke, Sherbrooke

11:10 – 11:15	Introduction by **Kristina Song** and **Morgane Da Rocha**
11:15 – 11:45	Students' choice seminar *Intricate roles played by bacterial small RNAs in the cellular regulatory networks* **Hanah Margalit**, Hebrew University of Jerusalem, Jerusalem
11:45 – 11:50	Introduction by **Kristina Song** and **Morgane Da Rocha**
11:50 – 12:20	Students' choice seminar *The timing of splicing: a unifying perspective* **Maria Carmo-Fonseca**, University of Lisbon, Lisbon
12:20 – 13:20	Lunch and departure