

2021 RiboClub Program
Transcriptomics and cancer biology

Featuring RNA-Strasbourg Community

September 20-23 – RiboZoom (EDT Time Zone)

Pre-recorded posters are available at all time during the meeting at riboclub.org

Monday, September 20, 2021 (Day 1)

- 10:30 – 10:45 **Welcome notes and Announcements**
Sherif Abou Elela, *Université de Sherbrooke, Sherbrooke*
- 10:45 – 11:30 **Opening Lecture**
Dynamics of eukaryotic translation initiation
Joseph Puglisi, *Stanford University, Stanford*
Introduction by Sean McKenna, *University of Manitoba, Winnipeg*

Session 1: Ribosome function

Chair: Marlene Oeffinger, *Université de Montréal, Montréal*

- 11:45 – 11:50 **Student Micro-talk #1: Uridylation of plant viral RNAs**
Anne Caroline Joly, *Université de Strasbourg, Strasbourg*
- 11:50 – 12:05 **Quality control during biogenesis of the large ribosomal subunit**
Kamena Kostova, *Carnegie Institute for Science, Washington*
- 12:10 – 12:25 **Pseudouridine-free ribosome exhibits distinct inter-subunit movements**
Hong Li, *Florida State University, Tallahassee*
- 12:30 – 12:45 **The chaperone Tsr2 regulates Rps26 release and reincorporation from mature ribosomes to enable a reversible, ribosome-mediated response to stress**
Katrin Karbstein, *The Scripps Research Institute, Jupiter*
- 12:50 – 13:50 **Lunch Break**

Session 2: Translation regulation

Chair: Marc Fabian, *McGill University, Montreal*

- 13:50 – 13:55 **Student Micro-talk #2: Integrative modeling allows a global and precise identification of functional miRNA target genes**
Constance Ciaudo, ETH Zurich, Zurich
- 13:55 – 14:10 **eIF3 interacts with histone H4 messenger RNA to regulate its translation**
Christine Allmann, Université de Strasbourg, Strasbourg
- 14:15 – 14:30 **Regulation of mRNA translation by eIF5B in glioblastoma**
Nehal Thakor, University of Lethbridge, Lethbridge
- 14:35 – 14:50 **Co-translational chloroplast protein targeting; extending this paradigm to the photosynthetic organelle**
William Zerges, Concordia University, Montréal
- 14:55 – 15:10 **Real-time observation of co-translational membrane protein insertion at the bacterial translocon**
Evan Mercier, Max-Planck Institute for Biophysical Chemistry, Göttingen
- 15:15 – 15:30 **The good, the bad and the ugly – non-canonical translational GTPases and their role in translation regulation and antimicrobial resistance**
Hans-Joachim Wieden, University of Manitoba, Winnipeg
- 15:35 – 15:55 **Short Break**

Session 3: Epigenetics and RNA modification

Chair: Christopher Holley, *Duke University, Durham*

- 15:55 – 16:00 **Student Micro-talk #3: An expanded landscape of unusually short RNAs in eukaryotic organisms provide discovery of two functional rRFs of 12 and 13 nt.**
Marine Lambert, McGill University, Montréal
- 16:00 – 16:15 **Identification and validation of 2'-O-methylation sites on mRNA**
Christopher Holley, Duke University, Durham
- 16:20 – 16:35 **m6A and YTHDF proteins control mRNA localization in neurons**
Mathieu Flamand, Duke University, Durham
- 16:40 – 16:55 **AGO1 regulates major satellite transcripts and H3K9me3 distribution at pericentromeric regions in mESCs**

Constance Ciaudo, *ETH Zurich, Zurich*

17:00 – 17:15 **pre-piRNA trimming and 2'-O-methylation protect piRNAs from tailing and degradation**
Wen Tang, *Ohio State University, Columbus*

Session 4: Bacterial non-coding RNA

Chair: **Éric Massé**, *Université de Sherbrooke, Sherbrooke*

17:20 – 17:25 **Student Micro-talk #4: A viral protein disrupts stress granule assembly by modulating RNA export**
Jibin Sadasivan, *University of British Columbia, Vancouver*

17:25 – 17:40 **RsaC sRNA is a connection node between metal homeostasis and oxidative stress response in *Staphylococcus aureus***
David Lalaouna, *Université de Strasbourg, Strasbourg*

17:45 – 18:00 **From high-resolution mechanisms to genome editing applications for type I CRISPR-Cas (CRISPR-Cas3)**
Ailong Ke, *Cornell University, Ithaca*

18:05 – 18:20 **Mechanism of RNA recognition by FinO RNA chaperones**
Mark Glover, *University of Alberta, Edmonton*

18:25 – 18:40 **A small RNA, PprS, mediates stress response network in *Deinococcus radiodurans***
Jordan Villa, *University of Texas at Austin, Austin*

Tuesday, September 21, 2021 (Day 2)

09:00 – 10:30 **Poster session #1**
#Eva Renard, #Cédric Verriez, #Oscar Wilkins, #Noémie Mercier,
#Laura Barrientos, #Aurélie Devinck, #Mohammad Reza Naghdi,
#Alyssa Ekdahl, #Léna Audebert, #Anne Caroline Joly,
#Roberto Bahena-Ceron, #Athena Sklias, #Marjorie Chery,
#Étienne Fafard-Couture, #Constance Ciaudo, #Kristina Atanasova,
#Luís Filipe Zandonadi Guimarães, #Monika Vilimova, #Maxime Duval,
#Lauren Kwiatek, #Claire Husser, #Viktoriiia Bavykina, #Martina Pitolli,
#Quetia Joseph, #Marilyn Whelan, #Herrade Meichel,
#Jessica Avila Lopez, #Marine Lambert

Session 5: RNA and cancer biology

Chair: Jean-Philippe Brosseau, *Université de Sherbrooke, Sherbrooke*

- 11:00 – 11:15 **Integrative genomic discovery and drugging of long noncoding RNAs in cancer**
Rory Johnson, *University College of Dublin, Dublin*
- 11:20 – 11:35 **The dual life of lncRNA BORG in healthy and cancerous tissues**
Saba Valadkhan, *Case Western Reserve University, Cleveland*
- 11:40 – 11:55 **Oncogenic mechanisms of DIS3 mutations in Multiple Myeloma**
Tomasz Kuliński, *International Institute of Molecular and Cell Biology, Warsaw*
- 12:00 – 12:15 **H/ACA snoRNAs promote tumour aggressiveness in high-grade ovarian cancer in a host gene independent manner**
Laurence Faucher-Giguère, *Université de Sherbrooke, Sherbrooke*
- 12:20 – 12:35 **Cis regulation within a cluster of viral microRNAs**
Sébastien Pfeffer, *Université de Strasbourg, Strasbourg*
- 12:40 – 13:05 **Lunch Break**

Session 6: RNA structure-function analysis

Chair: Michelle Scott, *Université de Sherbrooke, Sherbrooke*

- 13:05 – 13:20 **Detecting transient RNA structures that influence in vivo folding in silico**
Irmtraud Meyer, *Berlin Institute for Medical Systems Biology, Berlin*
- 13:25 – 13:40 **Two-dimensional and three-dimensional structure-function relationships for individual long non-coding RNAs**
Karissa Sanbonmatsu, *Los Alamos National Laboratory, Los Alamos*
- 13:45 – 14:00 **Evolutionary conservation of RNA sequence and structure**
Elena Rivas, *Harvard University, Cambridge*
- 14:05 – 14:20 **Structure-based discovery of new functions in large RNAs**
Kevin Weeks, *University of North Carolina, Chapel Hill*

14:25 – 14:40 **Finding recurrent RNA structural networks with fast maximal common subgraphs of edge-colored graphs**
Antoine Paul Soulé, McGill University, Montréal

14:45 – 15:00 **Short Break**

Session 7: Eukaryotic non-coding RNA

Chair: Martin Simard, *Université Laval, Québec*

15:00 – 15:15 **Importance of conserved elements in the formation of RNA stabilizing triplex-forming motifs**
Seyed Torabi, Yale University, New Haven

15:20 – 15:35 **Dynamics of human tRNA repertoires as a function of cell identity**
Danny Nedialkova, Max-Planck Institute of Biochemistry, Martinsried

15:40 – 15:55 **tRNA nuclear export - surprising tRNA family preferences, precociousness, and quality control**
Anita Hopper, Ohio State University, Columbus

16:00 – 16:15 **miR-206 is critical for differentiation of skeletal muscle cells and directly regulates newly identified target mRNAs**
Jennifer Kugel, University of Colorado Boulder, Boulder

16:20 – 16:35 **Identification of a novel RNA-binding function for the C-terminal extension of the telomerase-associated protein, dyskerin**
Chantal Autexier, McGill University, Montréal

17:00 – 19:00 *Closed special session, C2R2 consortium and RiboCare initiatives consultation (upon invitation, participation code will be sent by e. mail)*

Wednesday, September 22, 2021 (Day 3)

Session 8: Deciphering the transcriptome

Chair: Benoit Laurent, *Université de Sherbrooke, Sherbrooke*

10:40 – 10:55 **Unravelling the function of the TAPIR long non-coding RNA in regulating pluripotent cell states**
Samer Hussein, Université Laval, Laval

- 11:00 – 11:15 **NERD-seq: A nanopore direct RNA sequencing approach for non-coding RNAs**
Athanasios Zovoilis, University of Lethbridge, Lethbridge
- 11:20 – 11:35 **CoLoC-seq, a new high-throughput approach to profile organelle transcriptomes**
Alexandre Smirnov, Université de Strasbourg, Strasbourg
- 11:40 – 11:55 **Deciphering the transcriptome at single-molecule resolution**
Martin Smith, Université de Montréal, Montréal
- 12:00 – 12:15 **Identification of HIV-1 Vif host cell RNA targets and impact on viral replication**
Benjamin Stupfler, Université de Strasbourg, Strasbourg
- 12:20 – 12:35 **Enhanced cross-linking and immunoprecipitation elucidate viral protein-RNA interactions in SARS-CoV-2 infection**
Joy Xiang, University of California San Diego, La Jolla
- 12:40 – 13:30 **Lunch Break**
- 13:30 – 14:15 **Special RiboClub Plenary Lecture, introduction by Raymund Wellinger, Université de Sherbrooke, Sherbrooke**
The World of RNA: from CRISPR Gene Editing and mRNA Vaccines to Regulation of Epigenetics
Tom Cech, University of Colorado, Boulder
- 14:30 – 14:40 **Blue Jacket Award**
Benoit Laurent, Université de Sherbrooke, Sherbrooke
- 15:00 – 18:00 **Poster session #2**
#Farnaz Mansouri-Noori, #Michael Charrette, #Courtney Geer, #Jibin Sadasivan, #Marc-Antoine Turcotte, #Yihang Chen, #Sandra Lakrib, #Gabriel Reis Ferreira, #Hyeong Jin Kim, #Cynthia Fonderson, #Bimaldeep Singh, #Preethi Seelam Prabhakar, #James McFarlane, #Macarena Gimenez, #Yani Bouaziz, #Jennifer Porat, #Kyra Kerkhofs, #David Ferland-McCollough, #Jean-François Laurendeau, #Danny Bergeron, #Jeffrey McDonald, #Benjamin Donovan, #Anaïs Vannutelli, #Christophe Hudon, #Subha Dahal, #Samia Djerroud, #Paweł Krawczyk

Thursday, September 23, 2021 (Day 4)

Session 9: Regulation and tools of splicing

Chair: Benoit Chabot, *Université de Sherbrooke, Sherbrooke*

- 10:40 – 10:55 **Splice-switching antisense oligonucleotides for the treatment of CLN3 Batten disease**
Michelle Hastings, *Rosalind Franklin University of Medicine and Science, North Chicago*
- 11:00 – 11:15 **Single-molecule imaging suggests compact and spliceosome dependent organization of long introns**
Daniel Zenklusen, *Université de Montréal, Montréal*
- 11:20 – 11:35 **Systematic mapping of nuclear domain-associated transcripts reveals speckles and lamina as hubs of functionally distinct populations of retained introns**
Rasim Barutcu, *University of Toronto, Toronto*
- 11:40 – 11:55 **hnRNPA1B, a splice variant of HNRNPA1, is spatially and temporally regulated**
Myriam Gagné, *Université de Montréal, Montréal*
- 12:00 – 12:15 **Spliceosome defects may regulate senescence through alternative splicing**
Mathieu Deschênes, *Université de Sherbrooke, Sherbrooke*
- 12:20 – 12:35 **The human nuclear poly(A)-binding protein PABPN1 functions as a regulator of intron retention**
François Bachand, *Université de Sherbrooke, Sherbrooke*
- 12:40 – 13:05 **Lunch Break**
Optional presentation of Sherbrooke RNomics platform services

Session 10: RNA processing and degradation

Chair: François Bachand, *Université de Sherbrooke, Sherbrooke*

- 13:05 – 13:20 **Cleavage/polyadenylation factor CstF64 regulates the differentiation of monocytes to macrophages**
Srimoyee Mukherjee, *Tufts University School of Medicine, Boston*

- 13:25 – 13:40 **Molecular mechanism underlying the attenuation of the heat shock response**
Maria Vera Ugalde, McGill University, Montréal
- 13:45 – 14:00 **mRNA uridylation prevents the biogenesis of illegitimate siRNAs in Arabidopsis**
Dominique Gagliardi, Université de Strasbourg, Strasbourg
- 14:05 – 14:20 **Peculiar features of Chlamydomonas mitochondrial gene expression**
Laurence Drouard, Université de Strasbourg, Strasbourg
- 14:25 – 14:40 **Short Break**

Session 11: Transcription and 3'end formation

Chair: Brendan Bell, *Université de Sherbrooke, Sherbrooke*

- 14:40 – 14:55 **Structural basis for transcription complex disruption by the Mfd translocase**
Seth Darst, Rockefeller University, New York
- 15:00 – 15:15 **Genetic screen for suppressors of lncRNA-mediated transcription interference identifies a gain-of-function mutation in the essential Pol2 termination factor Seb1**
Beate Schwer, Weill Cornell Medical College, New York
- 15:20 – 15:35 **A clamping RNA polymerase ribozyme**
Peter Unrau, Simon Fraser University, Burnaby
- 15:40 – 15:55 **R-Loop recognition: from FMRP to an IDRome**
Alaji Bah, SUNY Upstate Medical University, Syracuse
- 16:00 – 16:15 **Molecular details of CPSF subunits assembly: The Cleavage complex**
Stéphane Thore, Université de Bordeaux, Bordeaux
- 16:20 – 16:30 Break

Session 12 : Students' choices

- 16:30 – 16:35 **Best Poster award, introduction by the student representatives**

- 16:35 – 17:00 **Best seminar awards**, *introduction by the student representatives*
RNA Granules are Mediators of Cellular Senescence and Age-Related Disease
Amr Omer, *McGill University, Montréal*
- 17:00 – 18:00 **Students' choice**, *introduction by the student representatives*
Kinetic selection of small regulatory RNA by the Hfq chaperone
Sarah Woodson, *Johns Hopkins University, Baltimore*