RNA Canada ARN

www.RNACanada.ca

RNA CANADA ARN NEWSLETTER
FALL 2023

MESSAGE FROM THE PRESIDENT

Dear Members of RNA Canada and RNA Enthusiasts,

With immense pleasure and pride, I extend my warmest welcome to all of you as we embark on a new era of RNA collaboration, innovation, and strategic planning. After 25 years of informal networking and knowledge sharing, RNA scientists in Canada have joined forces to establish a central hub for RNA innovation in our country

RNA Canada's primary mission is to empower scientists to generate new knowledge that will enhance the health and well-being of all Canadians. In these early stages, our focus has been on developing the necessary governance and infrastructure to formulate an effective strategy that accelerates RNA innovation.

Our guiding philosophy at RNA Canada is to work in harmony with existing funding agencies and large-scale initiatives. Instead of duplication, we seek to coordinate efforts. RNA Canada will assist interested partners and funding agencies in identifying the needs and opportunities within RNA research in Canada.

By consolidating information on research resources, infrastructure, researchers, trainees, and industry partners under one umbrella, RNA Canada will enable researchers to explore avenues for translating their work into practical applications. It will facilitate connections between academic and corporate entities, while helping governments better plan and manage funding opportunities.

Our objective is to reduce redundancy and waste and foster cross-disciplinary cooperation essential for delivering innovative solutions to Canadians. From a modest 10 founding members in 2020, RNA Canada is now approaching 300 principal researchers in academia and industry, and hundreds of trainees.

We have conducted several surveys within the scientific community – with more in the pipeline – to construct the first comprehensive portrait of the RNA biology research and innovation ecosystem in Canada. The findings from these surveys will be made public and used to shape the most effective strategy for advancing RNA research and innovation. (cont p.2)

In this issue

MESSAGE FROM THE PRESIDENT

It is worth noting that all of the work within RNA Canada is currently driven by over 50 dedicated volunteers from across Canada. Monetary support comes from active scientists who share our vision. This underscores the tremendous capacity of Canadian RNA scientists to organize themselves and contribute their time and resources for the greater public good.

This collaborative spirit exemplifies what could be achieved if industry and government were to join forces to support grassroots, science-based planning for the next revolution in RNA-based medicine, agriculture and biotechnology.

Currently, we are in the process of building databases, establishing sharing platforms, and enhancing support for trainees, with further improvements planned in the coming months.

To foster community unity, RNA Canada is collaborating with its affiliates and partners, including RiboClub, RiboWest, and TREnD. Together, we will bring scientists, industry professionals, government representatives, and parliamentarians under one roof in Ottawa in September 2024 at the inaugural RNA Canada Conference which will commemorate 25 years of networking via the RiboClub and will chart new avenues of collaboration within the RNA biology research ecosystem.

RNA Canada is firmly committed to transparent and inclusive work practices that engage all scientists, allowing them to brainstorm and work collectively. RNA Canada is now legally established as a not-for-profit corporation and its bylaws are almost finalized. In the coming months, we will announce these bylaws and will issue a call for the first general election to elect a new board under the bylaws. The election will empower members to shape RNA Canada's future directions. We we look forward to your active participation in this process.

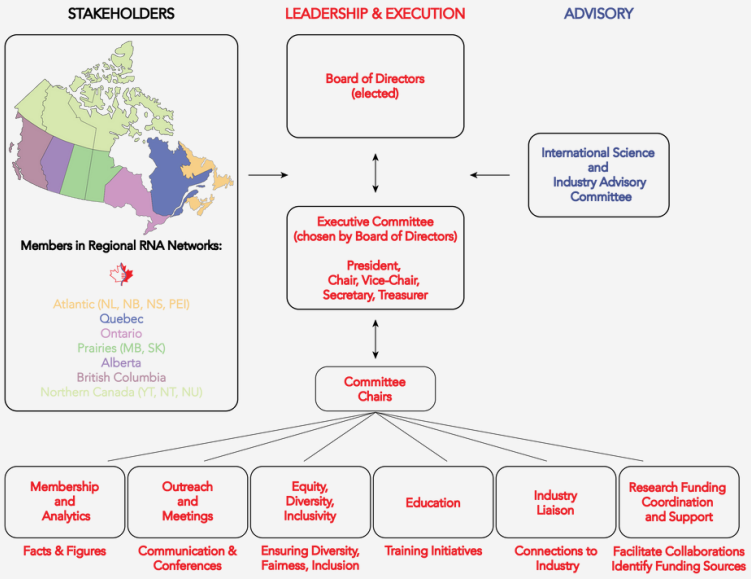
The establishment of RNA Canada presents an opportunity for RNA scientists to actively shape the future of RNA research in Canada, offers industry members access to Canadian innovation, and provides the government with a solid scientific foundation to enhance the healthcare system and manage natural resources such as forestry and fisheries.

We have taken the first steps, and we welcome the involvement of all those interested in the highly anticipated RNA biotechnology and medicine revolution. Your participation and support are instrumental in the development of a well-structured RNA research and innovation strategy that will benefit the Canadian economy, as well as the health and well-being of all Canadians. Your contributions will play a vital role in shaping the future of RNA research in our nation.

Warm regards,
Sherif Abou Elela, President, RNA Canada

WHO ARE WE ?

RNA Canada is a non-profit organization, established in 2023. RNA Canada researchers share an appreciation for the variety of RNA types and functions. They are working together to harness the power of RNA biology to improve the lives of Canadians via therapeutic, diagnostic, agricultural, and biotechnology advances.



- RNA Canada unites world-leading RNA scientists at universities and biotechnology and pharmaceutical companies across Canada to form an extensive and cohesive network.

- RNA Canada facilitates the training of the next generation of RNA researchers in classrooms and research labs across the country to accelerate RNA-related research discoveries and build a brighter future for Canada.

- RNA Canada engages with the public, to teach Canadians about the features and uses of RNA technologies, so that they are empowered to access these technologies in their lives.

- RNA Canada collaborates with the government to set research priorities that maximize RNA discoveries, advance the economy, and enhance the lives of Canadians.

WHO ARE WE ?

- RNA Canada is a network of over 300 academic and industrial research labs from over 20 universities and several companies across Canada. Currently, there are nearly 300 registered members at RNA Canada.
- Members are organized into 7 Regional RNA Networks, based on geographic location.
- The Board of Directors constitutes the elected, decision making arm of the organization. The Executive Committee is selected by the Board of Directors and provides the day-to-day leadership of RNA Canada.
- Six Standing Committees are focused on different activities of the organization, and report to the Executive Committee and Board of Directors.
- An International Science and Industry Advisory Committee provides arms-length advice to the leadership of RNA Canada.

Members of the Board of Directors

- Sherif Abou Elela
- Mark Bayfield
- Anna Blakney
- Julie Claycomb
- Thomas Duchaine
- Eric Jan
- Eric Lecuyer
- Pascale Legault
- Howard Lipshitz
- Barbara Papadopoulou
- Jonathan Perreault
- Peter Unrau
- Michelle Scott
- Hans-Joachim Wieden
- Athanasios Zovoilis

Executive Committee Members

Sherif Abou Elela	President
Howard Lipshitz	Chair of the Board
Peter Unrau	Vice Chair
Julie Claycomb	Secretary
Eric Lecuyer	Treasurer

Committee chairs

Nehal Thakor	Membership and Analytics (membership@rnacanada.ca)
Mark Bayfield	Outreach and Meetings (outreach@rnacanada.ca)
Michelle Scott	Equity, Diversity, Inclusivity (edi@rnacanada.ca)
Eric Jan	Education (education@rnacanada.ca)
Jonathan Perreault	Industry Liaison (ilc@rnacanada.ca)
Athan Zovoilis	Research funding coordination and support (grants@rnacanada.ca)

DR. TRUSHAR R. PATEL

Dr. Trushar R. Patel, University of Lethbridge, Dept. of Chemistry and Biochemistry

Dr. Patel pursued his BSc and MSc degrees in Biotechnology from India, then joined the Univ. of Nottingham, the UK for his Ph.D. where he studied solution structure and interactions of plant polysaccharides. During his postdoctoral training at the Univ. of Manitoba, Canada, he studied the structures of human extracellular matrix proteins, and began studying RNA molecules in the later stages of his training. Subsequently, he joined the Univ. of Birmingham, UK as the Marie Skłodowska-Curie fellow to study the role of cytoskeleton proteins in cancer.

He started his lab at the Univ. of Lethbridge in 2016 and received a Tier 2 Canada Research Chair in RNA and Protein Biophysics in 2017. Since 2022, he has taken on an important leadership role as Associate Dean. Research in the Patel lab focuses on obtaining detailed insights into the structure and dynamics of non-coding RNAs, and understanding nucleic acid-protein communication events. This information is very useful for understanding many biological processes, including viral replication, and has the potential to inform the development of therapeutics, including antivirals. In simpler terms, work in the Patel lab helps researchers to visualize a three-dimensional view of biomolecules such as RNA, and helps us to understand their biological roles, including how they communicate with their RNA and protein binding partners. The lab employs interdisciplinary approaches, from computational to structural biophysics, to visualize large RNAs from humans and viruses-which is no simple challenge! Understanding the involvement of RNA in viral replication is an exciting and important problem, because RNA viruses greatly affect the livelihood of plants, animals, and humans, as we have witnessed through the COVID-19 pandemic. As a great example of the research emerging from the Patel lab, a recent study uncovered structural insights into RNA-RNA interactions within the genome of Japanese encephalitis virus: Mrozowich et al. (2023) *Nucleic Acids Research*

Dr. Patel is intrigued by the mysterious nature of RNA structure, and finds RNA-RNA interactions-especially those of viral non-coding RNAs-to be a very exciting area of research. He has been enthralled with RNA as a macromolecule for many years because of its key roles in varied biological functions across all domains of life, and the fact that it remains relatively unexplored in terms of its structures. When asked about what advice he had for our RNA Canada community, he said “Let us continue helping and supporting each other and investing our energy to train the next generation of talented researchers. Being nice does not take much effort.” Perhaps it is not a surprise that Dr. Patel’s favourite parts of being a PI are working with trainees (especially undergraduate and graduate students) and helping them figure out the next steps, while his least favourite parts include the continuous search for grant funding.

When Dr. Patel is not solving intricate RNA-RNA interactions and mentoring students, he enjoys watching movies, drinking beverages, and biking. You can find Dr. Patel on X (formerly Twitter) @trushar_7, and learn more about his lab here: https://trpatel.com/

Scan me !

Toronto RNA Enthusiasts' Day (TREnD) conference

Toronto RNA Enthusiasts' Day (TREnD) was first held in 2016, as a scientific conference developed *by trainees for trainees.* Over the past eight years, TREnD has become a vital part of our RNA community, providing trainees with valuable scientific communication opportunities, encouraging new interactions and collaborations, enabling trainees to explore career opportunities, and exposing attendees to new ideas and techniques. The eighth annual TREnD, TREnD2023, was held in person and online via the Fourwaves platform this year, on August 1st and 2nd, and attracted junior RNA researchers, postdoctoral fellows, and PIs from across southern Ontario, Quebec, and New York.

This year's organizing committee was composed of a group of junior RNA researchers from across the greater Toronto area: Sameen Ahmed (PhD student, Maass Lab, Dept. of Molecular Genetics, University of Toronto (UofT)), Giovanni Burke (Greenblatt Lab, Dept. of Molecular Genetics, UofT), Dr. Evelyne Collignon (Postdoctoral Fellow, Lunenfeld-Tanenbaum Research Institute, Ramalho-Santos Lab), Charlotte Martin (PhD student, Calarco Lab, Dept. of Cell & Systems Biology, UofT), Dr. Volker Nitschko (Postdoctoral Fellow, Claycomb Lab, Dept. of Molecular Genetics, UofT), Pallavi Pilaka (PhD student, Calarco Lab, Dept. of Cell & Systems Biology, UofT), Sharanja Premachandran (PhD student, Calarco Lab, Dept. of Cell & Systems Biology, UofT), and Yifan (Eva) Wang (PhD student, Palazzo Lab, Dept. of Biochemistry, UofT).

The trainee organizing team was supported by University of Toronto faculty mentors: Dr. Julie Claycomb (Professor, Dept. of Molecular Genetics) and Dr. John Calarco (Assistant Professor, Dept. of Cell & Systems Biology).

RECENT EVENTS

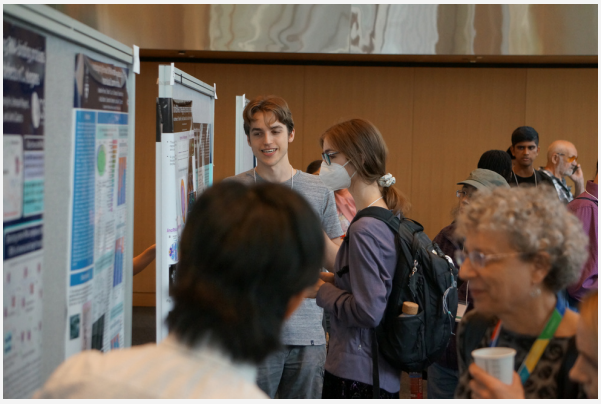
TREnD2023 brought together over 100 scientists both in person and online. The online format enables accessibility and allows the conference to reach a wider swath of RNA researchers from around the world. Online TREnD2023 programming kicked off on August 1, with a career panel and virtual poster session. On the career discussion panel, trainees heard from a scientists pursuing a diverse set of careers outside of academics. Dr. Amy Cui, Medical Manager of Oncology at Astellas Canada, Dr. Sonny Chen, a Computational Biologist at Roche, Dr. April Pawluk, a Scientific Publications Strategist at the Arc Institute, and Dr. Marco Blanchette, Vice President of Research and Development of Eclipse Bioinnovations spoke about their training and education paths, and described the skills needed for their positions, before taking questions from the audience. In the virtual poster session, Dr. Jennifer Porat, from Dr. Mark Bayfield's lab at York U., won the best poster prize.

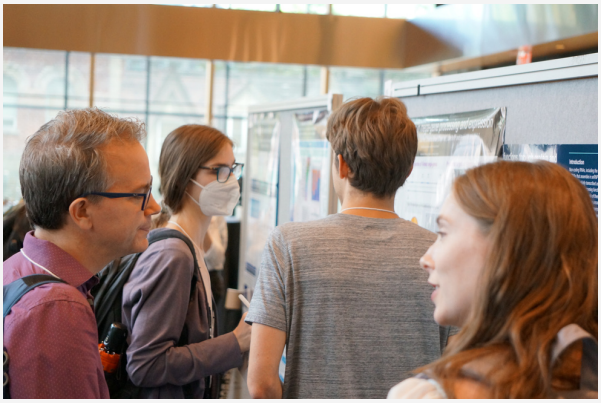
The second day of TREnD2023 was held in person at the Peter Gilgan Centre for Research and Learning. Attendees were delighted to kick off the day by learning about a wonderful scientific journey featuring the importance of RNA base pairing in various molecular processes, along with the role of serendipity in key discoveries made throughout her career, shared by keynote speaker, Dr. Joan Steitz.

A Lunch and Learn discussion on the topic of science outreach and communication, featuring Tara McDonnell, the Co-President of ComSciCon Canada Non-Profit Organization, Kausar Panchbhaya, the Programs Manager & Science Communicator of RCIScience, and Supreet Randhawa the Program Coordinator, and Daniela Angulo, a Program Facilitator at Pursue STEM, drew an engaged crowd. Dr. Howard Lipshitz, the Chairman of the Board at RNA Canada shared an update about the the group's efforts and encouraged trainees to get involved, and two sessions of 12 total trainee talks along with a poster session featuring almost 50 posters were also highlights of the day.

Brook Falk (Brill lab), Nevraj Kejiou (Palazzo lab), Carina Lyons (Youn lab), Welna He (Calarco lab), and Negar Khosraviani (Fish lab) were poster prize winners, while Sean Ihn (Palazzo and Kate Lee labs) and Sebastian Fuentes (Claycomb lab) took away prizes for the best talks. Finally, Emily Deng (Calarco lab) took the prize in the RNArt contest for her comic book-style rendering of DICER: The post-transcriptional maniac.

Overall, TREnD2023 was a smashing success, in no small part because of continued financial support from the RNA Society and the Dept. of Cell and Systems Biology (UofT), a generous workshop grant from the Dept. of Molecular Genetics (UofT), and most importantly from the support of our outstanding RNA Canada community! Thanks to everyone. You can keep up with TREnD updates on Twitter (@TrendRNA) and at their website (TREndRNA.com).





RiboWest2023

The annual RiboWest Conference was established in 2005 at the University of Northern British Columbia (UNBC). Since then, this meeting has continuously grown and attracted participants from western and eastern Canada, northwest USA, and beyond. The non-competitive and collaborative atmosphere at the RiboWest Conference allows researchers to form important networks with their colleagues. This atmosphere also provides students the opportunity to present work in progress and obtain valuable feedback that may shape their future research. In addition to being hosted at UNBC, RiboWest has been held frequently at the University of Lethbridge since 2008, along with the University of Alberta (2015), the University of British Columbia (2017 & 2022), and the University of Manitoba (2019).

RiboWest2023 returned to its roots at UNBC, hosting 79 researchers from across Canada, Germany, and the USA. This year's meeting was organized by Drs. Stephen Rader and Kendra Furber (UNBC), Nehal Thakor (U. Lethbridge), and Chris Nelson (U. Victoria). The size of the conference facilitates the intensive exchange of scientific findings and fosters the formation of interdisciplinary research networks from biochemistry to medical biology.

RiboWest2023 also brought together industry partners who are interested in RNA-based technologies, including RNA-based therapeutics and vaccines for human, veterinary, and agricultural applications. Because of a strong emphasis on training the next generation of RNA researchers, career opportunities and mentor-mentee events were a major emphasis in the RiboWest2023 program. A discussion entitled "Fixing Academic Hiring," highlighted the Yale Biochemistry Department's experiments in anonymizing job applications to eliminate bias in their evaluation, and explored other strategies for improving diversity among academic faculty.

Keynote speakers are essential for setting a collaborative spirit and inspiring attendees, and this year featured a dynamic and engaging set of speakers: Dr. Tracy L. Johnson (Professor, Molecular, Cell and Development Biology Dean, Life Sciences, UCLA College), Dr. Karissa Sanbonmatsu (Los Alamos National Laboratory, Theoretical Biology and Biophysics Group, Theoretical Division), and Dr. Michael C. Levin (Professor of Neurology, University of Saskatchewan). They shared their newest findings on RNA research in health and disease, thereby showcasing the opportunities of using RNA as research tool, cellular regulator, and therapy.

The research presented by trainees at all levels was top notch, as demonstrated by the numerous awards for talks and posters.

PhD Talk Awards:
Brenna Hay (Jan Lab, UBC), Saurabh Tiwari (Thundathil Lab, U Calgary and Thakor Lab, U Lethbridge), Yilin Liu (Vu Lab, UBC), Honourable Mention Daniiar Zhaguparov (Woodside Lab, U Alberta).

MSc Talk Awards:
Parleen Pandher (Gray Lab, UNBC), Christina Young (Jan Lab, UBC), Jenna Letain (Patel Lab, U Lethbridge), Honourable Mention Loc Ngo (Howard Lab, U Victoria)

Undergraduate Talk Awards:
Katie Yuen (Vu Lab, UBC), Jason Luddu (Thakor Lab, U Lethbridge)

PhD Poster Awards:
Jessica de Santis (Sorenson Lab, UBC), Maryam Ghaffarzadeh (Rader Lab, UNBC), Annalena Renner (Bergmann Lab, U Vienna and UBC)

MSc Poster Awards:
Andrew Poholka (MacMillan Lab, U Alberta), Cassi Penfold (Murray Lab, UNBC)

Undergraduate Poster Awards:
Serena Sanghera (Furber Lab, UNBC), Michelle Tong (Jan Lab, UBC)

This year's RiboWest also featured the inaugural Gregg Morin Prize for the trainee who asked the best questions throughout the meeting, awarded to Andrew Poholka (MacMillan Lab, U Alberta).

RECENT EVENTS

The success of RiboWest2023 is made possible by both the participation of our outstanding Canadian RNA community, and the generous sponsorship of: CIHR, The RNA Society, Fisher Scientific, UNBC, UNBC Health Research Institute, Cytiva, Future Fields, Providence Therapeutics, Northern Centre for Clinical Research, Northern Health, and New England BioLabs. In 2024, RiboWest will join TREnD and RiboClub in organizing a collaborative RNA Canada meeting to be held September 30-October 4, 2024 in Ottawa, ON. We hope to bring the RiboWest spirit to this meeting! See you there!

If you want us to develop short posts to highlight your research or share your job offers, don't hesitate to contact us !

Click here to provide information about yourself and your research to be featured in a short biography, or about new publications and research breakthroughs, awards and other news.
Click here providing information about job postings.

RiboClub annual meeting

September 24 – 28, 2023; Orford, QC, Canada
https://home.riboclub.org/annual-meeting/

The RiboClub Annual Meeting aims at encouraging the exchange of ideas and stimulates collaborations between RNA biologists around the world. The meeting covers different topics related to the chemistry, structure and biology of RNA with emphasis on upcoming and debatable biological questions. In addition, every year the RiboClub puts the focus on a local or regional RNA group to highlight their efforts and introduce them to the international community.

'What can RNA do?' RNA in Disease and Immunity

October 23, 2023; 4-6pm Eastern time, online

"What Can RNA Do?" is an interactive online seminar and discussion series led by top Canadian Researchers. In each 2-hour session, two PIs and trainees talk about their research and fuel discussion about these hot topics. "What Can RNA Do?" is a great way to learn about research happening across Canada, think deeply about new topics, and network with fellow RNA researchers.
Here is the link to register:
https://us02web.zoom.us/meeting/register/tZYpcOmrqT0jHdPaGZX3pcIdKbcjJ8toFRSZ

'RNA Canada 2024: The Future of RNA Technology'

September 30 – October 4, 2024, Ottawa, ON, Canada

Mark your calendars for our first ever pan-Canadian meeting of RNA Canada ARN members: RNA Canada ARN 2024: The future of RNA technology, to be held Sept. 30-Oct. 4, 2024 at the Shaw Centre in Ottawa, ON, Canada. This conference will bring together researchers at all stages in academic and industry sectors, along with government officials and the public to hear about Canadian RNA research strategy, cutting edge RNA research topics, and the latest applications of RNA technologies. There will be engagements with Members of Parliament, networking events to form new connections among various RNA-focused sectors, trainee-centered mentorship and career development activities, and much more. We hope to see you at this premier RNA Conference next fall!

DNA TO RNA: AN INCLUSIVE CANADIAN APPROACH TO GENOMIC-BASED RNA THERAPEUTICS (D2R)

McGill University received a Canada First Research Excellence Fund (CFREF) grant to create an international hub for “next generation” medicines. McGill University is the recipient of a landmark $165 million grant to launch DNA to RNA: An Inclusive Canadian Approach to Genomic-based RNA Therapeutics (D2R), a first-of-its-kind global research effort specializing in the development and delivery of more inclusive genomic-based RNA therapeutics. Congratulations !

Related link :
https://www.mcgill.ca/newsroom/channels/news/165-million-mcgill-universitys-world-leading-inclusive-genomics-and-rna-research-program-348071

RNA SALONS

RiboClub
https://home.riboclub.org/schedule/
4:30pm first or second Monday of each month.

Montreal RNA Salon
https://www.mtlrna.org/
4pm, second Wednesday of each month

Toronto RNA Club
https://torontornaclub.com/
4pm, second Friday of each month

ARRTI at ULethbridge (Alberta RNA Research and Training Institute)
https://www.ulethbridge.ca/research/centres-institutes/alberta-rna-research-and-training-institute

Vancouver RNA Club
https://www.vanrnaclub.com/
Next meeting : October 16, 2023 - Theme: non-coding RNA

RNA Collaborative Seminars Series (RNA society)
https://www.rnasociety.org/rna-collaborative-seminar-series

CONTACT INFORMATION

If you need help with :

- Grants and funding questions, ask the research funding coordination and support committee (grants@rnacanada.ca)
- Education and training questions, ask the Education committee (education@rnacanada.ca)
- EDI questions, ask the EDI committee (edi@rnacanada.ca)
- questions connection between academic and industrial sectors, aske the Industry liasion committee (ilc@rnacanada.ca)
- job posting questions or the publication of biographies, awards or any other news you wish to share, ask the Outreach and Meetings committee (outreach@rnacanada.ca)

BECOME A MEMBER OF RNA CANADA ARN !

Join us to support RNA research in Canada !

Click here to register as an academic researcher, trainee or industry partner.

Please visit our new website for more information (www.RNACanada.ca)

SIGN UP to join our mailing list to receive RNA Canada ARN updates and our newsletter.

Follow us LinkedIn , Instagram and X (formerly Twitter)