

# RoboWes

June 10<sup>th</sup>-13<sup>th</sup> 2018

Where RNA Minds Reunite



**Lethbridge**

**Waterton**



## SPEAKERS

Martin Hirst, University of British Columbia, Canada

Steven Jones, Canada's Michael Smith Genome Sciences Centre, Canada

Jennifer Kugel, University of Colorado Boulder, USA

Michelle Scott, Université de Sherbrooke, Canada

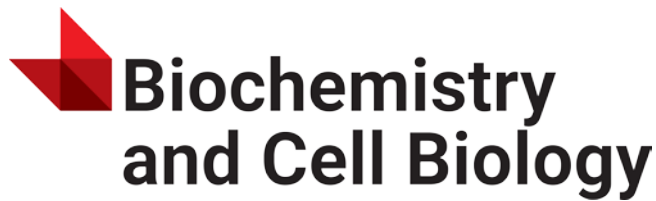
Nahum Sonenberg, McGill University, Canada

## SPECIAL FOCUS

RNA in Health and Disease

New RNA Technologies

The organizers thank the following sponsors for their kind support of the 2018 RiboWest Conference



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## RiboWest 2018 Program

### Sunday, June 10, 2018

7:30 am – 5:00 pm	Trip to Waterton Lakes National Park with networking lunch	
5:00 – 7:00 pm	Registration with light snacks	Markin Hall Atrium
5:45 – 6:00 pm	Opening Remarks: Dr. Erasmus Okine (Vice President Research, University of Lethbridge)	Markin Hall Atrium
6:00 – 7:00 pm	Gairdner Lecture: Dr. Nahum Sonenberg	Markin Hall Atrium
7:00 – 8:00 pm	Alberta Epigenetics Network (AEN) sponsored Opening Keynote Lecture: Dr. Steven Jones	Markin Hall Atrium
8:00 – 10:00 pm	Welcome Reception and Networking Opportunity	Lux Hotel Lobby

### Monday, June 11, 2018

7:00 – 8:00 am	Breakfast	Markin Hall Atrium
8:00 – 8:45 am	AEN Sponsored “Breakthrough in Epigenetics” Lecture: Dr. Martin Hirst	Markin Hall Atrium
9:00 – 10:20 am	Session I: Translation Regulation	PE261
10:20 – 10:45 am	Coffee Break	Markin Hall Atrium
11:00 am – 12:15 pm	Session II: RNA in Infectious Diseases	PE261
12:15 – 1:15 pm	Lunch	Markin Hall Atrium
1:15 – 1:35 pm	Group Photo	Outside of Markin Hall
1:45 – 3:20 pm	Session III: Gene Expression Regulation and Diseases	PE261
3:20 – 3:40 pm	Coffee Break	Markin Hall Atrium

## RiboWest 2018

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3:40 – 4:30 pm	Panel Discussion on Grant Writing and Team Building for Tri-Council Grants	Markin Hall Atrium
4:30 – 5:00 pm	Beckman Seminar	Markin Hall Atrium
5:00 – 6:30 pm	Poster Session Part 1 (even-numbered posters)	Markin Hall
6:30 – 8:00 pm	Dinner and Networking session	Markin Hall Atrium
8:30 – 10:30 pm	Informal social	Off campus
<b>Tuesday, June 12, 2018</b>		
7:00 – 8:00 am	Breakfast	Markin Hall Atrium
8:00 – 8:45 am	Invited RiboClub Lecture: Dr. Michelle Scott	Markin Hall Atrium
9:00 – 10:35	Session IV: RNA Structure-Function	PE261
10:35 – 11:00 am	Coffee Break	Markin Hall Atrium
11:15 am – 12:45 pm	Session V: Computational Biology and Transcriptomics	PE261
12:45 – 1:45 pm	Lunch	Markin Hall Atrium
1:25 – 1:45 pm	Concurrently: Principal investigators discussion on the venue for RiboWest Conference 2019	Markin Hall Atrium
2:00 – 2:45 pm	Session VI: Synthetic Biology and Biophysics	PE261
2:45 – 3:10 pm	Coffee Break	Markin Hall Atrium
3:15 – 4:45 pm	Poster Session Part 2 (odd-numbered posters)	Markin Hall
4:45 – 5:45 pm	Closing Keynote Lecture: Dr. Jennifer Kugel	Markin Hall Atrium
5:45 – 6:00 pm	Closing Remarks: Dr. Craig Cooper (Dean of the Faculty of Arts and Sciences, University of Lethbridge)	Markin Hall Atrium
6:30 – 9:00 pm	Beckman Sponsored Conference Dinner	The Galt Museum

**Wednesday, June 13, 2018**

7:30 – 8:30 am	Breakfast	Markin Hall Atrium
8:30 – 10:30 am	Session VII: AEN Sponsored Young Investigator Session	PE261
10:30 – 11:00 am	Conference wrap up, Coffee, and Departure	Markin Hall Atrium



9:50 – 10:05 am      **Seyed Mehdi Jafarnejad**      **20**  
 Regulation of ERK signalling pathway by a microRNA and mRNA translation machinery

10:05 – 10:20 am      **Kamiko Bressler**      **11**  
 The role of eukaryotic initiation factor 5B (eIF5B) in upstream open reading frame (uORF)-mediated translation

**Session II: RNA in Infectious Diseases**

**Chair: Dr. Chris Nelson**

11:00 – 11:15 am      **Mamata Panigrahi**      **29**  
 Altered Translation Regulation Promotes miR-122-independent Replication of Hepatitis C Virus Genomes

11:15 – 11:30 am      **Monica Mesa Perez**      **27**  
 Dissecting the functions of a cytoplasmic isoform of ARS2 in RNA metabolism

11:30 – 11:45 am      **Tyler Mrozowich**      **28**  
 Towards Obtaining a Nanoscale Structure of the 3' Terminal Region of Japanese Encephalitis Virus Genome

11:45 am – 12:00 pm      **Jibin Sadasivan**      **33**  
 Cricket Paralysis Virus 1A protein disrupts stress granule formation

12:00 – 12:15 pm      **Rasika Kunden**      **24**  
 Mapping the region on the Hepatitis C virus genome to which miR-122 and other small RNA annealing promotes virus replication

**Session III: Gene Expression Regulation and Diseases**

**Chair: Dr. Richard Fahlman**

1:45 – 2:05 pm      **Hasan Uludag**      **38**  
 siRNA Therapy of Chronic Myeloid Leukemia

2:05 – 2:20 pm      **Logan Brand**      **10**  
 I get knocked down, but I get up again: transcription and 5' UTR contribution to temperature-dependent regulation of a cyanobacterial RNA helicase

2:20 – 2:35 pm	<b>Neda Savic</b> Paralogous <i>S. cerevisiae</i> histone chaperones Fpr3 and Fpr4 regulate transcription at rDNA and at select protein coding genes	<b>34</b>
2:35 – 2:50 pm	<b>Sean Ritter</b> Protein Abundance of the RNA Helicase CrhR is Regulated via Convergent Sensing of the Redox Poise of the Electron Transport Chain	<b>30</b>
2:50 – 3:05 pm	<b>Dani Kalsbeek</b> DNA damage checkpoint adaptation leads to chromosome loss and rearrangement in cancer cells	<b>22</b>
3:05 – 3:20 pm	<b>John Maringa Githaka</b> Non-canonical role of the Bcl-2 protein BAD in translation and mammary gland morphogenesis	<b>16</b>
<b>Beckman Lecture: Bob Rodriguez (Beckman Coulter Inc.)</b> <b>Chair: Dr. Trushar Patel</b>		
4:30 – 5:00 pm	Analytical Ultracentrifugation: Overview and Common Applications	<b>6</b>

## Tuesday, June 12, 2018

### Focus: New RNA Technologies

**Invited RiboClub Lecture: Dr. Michelle Scott (Université de Sherbrooke, QC, Canada)**  
**Chair: Dr. Stacey Wetmore**

8:00 – 8:45 am	A pan-transcriptome view of mid-size RNAs	<b>4</b>
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### Session IV: RNA Structure-Function

**Chair: Dr. Ute Kothe**

9:00 – 9:20 am	<b>Savraj Grewel</b> tRNA synthesis and the regulation of growth in <i>Drosophila</i>	<b>18</b>
9:20 – 9:35 am	<b>Emily Soon</b> TrmA is a tRNA modification enzyme that functions as a tRNA chaperone <i>in vitro</i> and <i>in vivo</i>	<b>36</b>



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9:35 – 9:50 am	<b>Sarah Schultz</b> Hierarchical modification of tRNA by TrmA, TruB, and TrmB	<b>35</b>
9:50 – 10:05 am	<b>Mathew Kirby</b> A short linker region of factorless internal ribosome entry site mediates ribosomal positioning and translational activity	<b>23</b>
10:05 – 10:20 am	<b>Luc Roberts</b> Evidence against RNA structure-based translation initiation in bacteria	<b>31</b>
10:20 – 10:35 am	<b>Beatrice Fung</b> Elucidation of 3' exon requirements for a novel group II intron	<b>14</b>
<b><u>Session V: Computational Biology and Transcriptomics</u></b>		
<b>Chair: Dr. Sean McKenna</b>		
11:15 – 11:30 am	<b>Chris Isaac</b> Abnormal SINE B2 RNA processing is associated with amyloid and brain aging pathology	<b>19</b>
11:30 – 11:45 am	<b>Gabrielle Deschamps-Francoeur</b> CoCo: RNA-seq Read Assignment Correction for Nested Genes and Multimapped Reads	<b>12</b>
11:45 am – 12:00 pm	<b>Dylan Girodat</b> Conserved Dynamics of the D2 Dopamine Receptor Transmembrane Helix 3 Reveal an Activation Pathway Amongst G-Protein Coupled Receptors	<b>15</b>
12:00 – 12:15 pm	<b>Katie Wilson</b> A Survey of RNA-Protein $\pi$ -Interactions: A Comparison of Natural Occurrences and Structures, and Computationally Predicted Strengths	<b>40</b>
12:15 – 12:30 pm	<b>Mohamed Aboelnga</b> Computational insights into the multifunctional AP endonuclease: Establishing a novel phosphodiester bond cleavage mechanism	<b>7</b>
12:30 – 12:45 pm	<b>Olivia Marasco</b> Testing the Vatter-Wek Hypothesis for ATF4 translation regulation by upstream open reading frames using <i>in silico</i> and <i>in cellulo</i> methods	<b>25</b>

**Session VI: Synthetic Biology and Biophysics****Chair: Dr. Greg Morin**

2:00 – 2:15 pm	<b>Justin Vigar</b> Non-Canonical Translation Initiation Devices for Engineering Biology	<b>39</b>
2:15 – 2:30 pm	<b>Ewan McRae</b> The C-terminus of DDX21 recognizes the 2'OH of loop nucleotides in RNA guanine quadruplexes	<b>26</b>
2:30 – 2:45 pm	<b>Simmone D'souza</b> Interaction Studies of DDX17 with Rift Valley Fever Virus and Japanese Encephalitis Virus Non-coding RNA	<b>13</b>

**Closing Keynote Lecture: Dr. Jennifer Kugel (University of Colorado Boulder, CO, USA)****Chair: Dr. Athan Zovoilis**

4:45 – 5:45 pm	Regulation of RNA polymerase II by SINE encoded ncRNAs	<b>5</b>
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**Session VII: Young Investigator****Chair: Dr. Raja Singh**

8:30 – 9:00 am	<b>Athanasios Zovoilis</b> Epigenetic deregulation through abnormal processing of SINE non-coding RNAs in aging brain and dementia: An integrative RNA genomics approach	<b>41</b>
9:00 – 9:30 am	<b>Tim Audus</b> Uncovering the Mechanisms Regulating Physiological Amyloid Aggregation	<b>8</b>
9:30 – 10:00 am	<b>Andriy Bilichak</b> Genome editing in wheat microspores and haploid embryos mediated by delivery of ZFN proteins and cell penetrating peptide complexes	<b>9</b>
10:00 – 10:30 am	<b>Darryl Jones</b> Automated Phylogenomics For Carbohydrate Active Enzyme Discovery From Animal Microbiomes	<b>21</b>