

For immediate release — Tuesday, August 29, 2023

## University of Lethbridge researchers awarded more than \$2.3 million in NSERC, CFI funding support

University of Lethbridge researchers across a breadth of disciplines have earned more than \$2.3 million in funding support from the Natural Sciences and Engineering Research Council of Canada (NSERC) and Canada Foundation for Innovation (CFI), as announced by the Honourable François-Philippe Champagne, Minister of Innovation, Science, and Industry, and the Honourable Mark Holland, Minister of Health in Edmonton today.

The funding support is part of a \$960-million investment by the federal government in research activities across the country.

“This funding is an integral part of the research process and supports our faculty members and their teams in multiple ways, from hiring essential personnel to training graduate and undergraduate students, to acquiring essential equipment and more,” says Dr. Dena McMartin, ULethbridge vice-president (research). “This support allows our researchers to continue to pursue the solutions to a host of issues facing society today and in the future.”

“My best wishes to all the recipients of these grants, awards and scholarships,” adds Minister Holland. “The government is pleased to invest in your diverse array of health, natural sciences and engineering research projects because we know that your ideas, passion and hard work, as well as the evidence you uncover, are instrumental in improving the health and quality of life of people in Canada, and your findings contribute to the international research effort around the world.”

In all, nine ULethbridge researchers were successful in their NSERC grant applications, which included funding for projects in neuroscience, biological sciences, chemistry & biochemistry and mathematics & computer science. As well, Drs. Majid Mohajerani and Stacey Wetmore earned CFI John R. Evans Leaders Fund (JELF) awards.



Among the projects are Dr. Roy Golsteyn's (biological sciences) work investigating human cell division and utilizing beneficial chemicals in Canadian prairie plants, which was funded at \$300,000 (\$60,000 per year over five years). As well, Dr. Bruce McNaughton (neuroscience) receives \$420,000 over five years for his study to understand the neural basis of long-term, episodic memory, and Dr. Robert Benkoczi (mathematics & computer science) is receiving a Discovery Development Grant valued at \$40,000 over two years as he conducts fundamental research into finding new and more efficient algorithms for planning large scale evacuations.

"The projects our researchers are involved in cover a wide range of topics, all of which are focused on bettering society while providing excellent mentoring and training to undergraduate and graduate students," adds McMartin. "These funding awards give just a glimpse of the breadth of research activity taking place daily across our campuses."

Following are details on today's grant announcements.

## **NSERC**

### **Discovery Grant (5 years)**

Dr. Roy Golsteyn (biological sciences) — Natural products as novel tools to investigate human cell division (\$300,000) — Our research uncovers how human cells divide and seeks beneficial chemicals in Canadian prairie plants. From potential cancer treatments to sustainable practices, we are supporting scientific and economic innovation, while fostering cultural exchange with southern Alberta Indigenous communities.

Dr. Igor Kovalchuk (biological sciences) — Transgenerational response to stress in Arabidopsis (\$255,000).

Dr. Marc Roussel (neuroscience) — Delays in gene expression models: methodological developments (\$225,000) — Development of methods for building and analyzing mathematical models of gene expression systems, where transcription, translation and splicing may play a significant role in the timing of events.

Dr. Bruce McNaughton (neuroscience) — Consolidation of cortical memory representations into hippocampus-independent form: neural ensemble dynamics and mechanisms (\$420,000) — We are attempting to understand the neural basis of long-term, episodic memory, and its integration into generalized knowledge encoded by brain cells in the cerebral cortex.

### **Discovery Development Grant (2 years)**

Dr. Olga Kovalchuk (biological sciences) — Exosomes - important mediators of direct and bystander radiation effects on the brain (\$40,000).

Dr. Robert Benkoczi (mathematics & computer science) — Models and algorithms for facility location (\$40,000) — This award supports fundamental research into finding new and more efficient algorithms for planning large scale evacuations.

Dr. Shahadat Hossain (mathematics & computer science) — Efficient computation with sparse and structured matrices – mathematical derivatives and beyond (\$40,000).

### **Research Tools and Instruments (1 year)**

Dr. Trushar Patel (chemistry & biochemistry) — Isothermal Titration Calorimetry for Studying Macromolecular Interactions (\$150,000) — The installation of ITC (Isothermal Titration Calorimetry) at ULethbridge strengthens the biochemical and biophysical infrastructure as well as the research programs aimed at examining communication events that are at the heart of viral infections and cancer.

Dr. Matthew Tata (neuroscience) — Critical Refit and Upgrade to Electroencephalography Lab at University of Lethbridge (\$149,140) — This upgrade includes state-of-the-art electroencephalography systems to study how brain regions communicate with each other while solving the computational problems of perception and cognition.

### **CFI**

#### **John R. Evans Leaders Fund**

Dr. Majid Mohajerani (neuroscience) — Innovative brain imaging techniques for aging-associated diseases (\$563,466).

Dr. Stacey Wetmore (chemistry & biochemistry) — Tools for modeling the chemistry of modified nucleic acids (\$139,702).

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*Our University's Blackfoot name is Iniskim, meaning Sacred Buffalo Stone. The University is located in traditional Blackfoot Confederacy territory. We honour the Blackfoot people and their traditional ways of knowing in caring for this land, as well as all Indigenous Peoples who have helped shape and continue to strengthen our University community.*