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U of L research programs to benefit from Canada Foundation for Innovation funding

Funding from the Canada Foundation for Innovation's John R. Evans Leaders Fund (JELF) is bolstering research that will contribute to developing next-generation therapies for hard-to-treat cancers and providing a mobile lab that will allow animals to be studied in their natural habitats.

Today at the University of Alberta, the Honourable Kirsty Duncan, federal science minister, announced more than \$23 million in funding for 95 projects at 26 universities across Canada.

"Investments like today's in Canada's research infrastructure are incredibly important to the nation's future. They give Canadian researchers the tools they need to make new discoveries that will better the lives of Canadians today and for years to come," says Duncan.

At the University of Lethbridge, Dr. Nehal Thakor, a Campus Alberta Innovation Program (CAIP) Chair in the Alberta RNA Research and Training Institute (ARRTI) and assistant professor in the Department of Chemistry and Biochemistry, will receive \$130,000 and Dr. Andrew Iwaniuk (MSc '00), a Tier II Canada Research Chair and neuroscience professor, will receive \$49,600.

Thakor will use the funding to further his investigations into protein translation as it relates to cancer progression and resistance to chemotherapy and radiation treatments. Genetic information, for all life forms on earth, is stored in deoxyribonucleic acid (DNA) in the form of genetic codons. During gene expression, DNA is transcribed into ribonucleic acid (RNA). Then messenger RNAs (mRNAs) are translated to proteins, vital building blocks of the cell, which then carry out specific cell functions. The process of translating mRNA to protein consumes a lot of energy and is highly regulated. However, regulatory processes are sometimes impaired, resulting in dysregulation of gene expression that has been implicated in Alzheimer's disease, diabetes, stroke, and in cancer progression.

“My research will help determine the role of dysregulated protein translation in tumour progression and cancer cell death,” says Thakor. “Eventually, my research program could contribute to developing next-generation treatments for hard-to-treat cancers, such as glioblastoma multiforme, which is a type of brain tumour. We want to target protein translation dysregulation in brain tumour-initiating cells, in combination with traditional brain tumour therapies. This approach has the potential to significantly reduce the huge social and economic costs of cancer in Canada.”

Iwaniuk’s research into the neural control of behaviour in wild animals, such as grouse and ground squirrels, will be greatly assisted by the addition of a mobile lab.

“Mobile labs allow samples to be prepared and stored properly right where they are collected and a mobile lab can be easily moved to areas of national or international importance,” says Iwaniuk. “This mobile lab will allow me and my students to access remote locations and use a range of modern scientific methods. Students will learn about doing field research and the results of our research will provide insight into the anatomy, behaviour and physiology of wild animals that would be otherwise unattainable.”

The Mobile Neurobiology Research Lab, consisting of a field vehicle and a trailer outfitted with the necessary equipment to perform lab work, is the only one of its kind in the world, says Iwaniuk. It will enable him to use a wider range of techniques in his university lab and collaborate in ways that aren’t currently feasible and, ultimately, generate new methods and perspectives on the evolution of brain and behaviour.

The JELF is designed to help universities attract and retain the best and brightest researchers from around the world by giving them cutting-edge research tools.

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Contact:

Dr. Andrew Iwaniuk

403-332-5288

andrew.iwaniuk@uleth.ca

Dr. Nehal Thakor

403-317-5055

nthakor@uleth.ca

Caroline Zentner, public affairs advisor

403-394-3975 or 403-795-5403 (cell)

caroline.zentner@uleth.ca