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MAY 28, 2019 | 074-19

Laurier researchers receive $3.3 million from Natural Sciences and Engineering Research Council

WATERLOO – Wilfrid Laurier University faculty members and graduate students have secured nearly $3.3 million in funding from the Natural Sciences and Engineering Research Council of Canada (NSERC) to support research in a broad range of scientific fields.

In total, 20 Laurier faculty members will receive more than $3 million in NSERC funding over five years. Their research is also supported by the federal government's Research Support Fund. Three Laurier master's students will receive one year of funding while two doctoral students will receive three years of funding.

"Laurier researchers have ambitious and bold ideas," said Jeffery Jones, Laurier's interim associate vice-president: research. "This funding for research in biology, chemistry, computer science, kinesiology, mathematics, physics and psychology will help established scholars break new ground and assist emerging researchers to develop into leaders in their field."

Laurier researchers received funding from NSERC's Discovery Grant, Discovery Development Grant, Discovery Grant Northern Research Supplement, Discovery Launch Supplement, Discovery Accelerator Supplement, Canada Graduate Scholarship and NSERC Postgraduate Scholarship programs.

Jonathan Mark Wilson, a Laurier associate professor of biology, was awarded $355,000 in funding over five years to support his research into fish and other animals that have lost their stomachs. His findings will have practical implications for Canada's aquaculture industry.

Most vertebrate species have stomachs that secrete acid to help digest food, but a significant percentage of fish species, as well as a few other aquatic vertebrates such as the platypus, "lost" their stomachs through the course of their evolutionary histories. Instead, the food they eat goes directly to their intestines.

Wilson and his team, which includes students, will explore this stomach loss by studying the role of an ion transport protein, commonly called the "gastric acid pump," which is responsible for stomach acidification. Wilson aims to use new techniques to establish the importance of the gastric acid pump to the efficiency of digestion and growth in fishes.

"In addition to improving our understanding of the role of gene loss in evolution, this research program will give us a better understanding of the stomach's role in digestion," said Wilson. "This may lead to improvements in feed formulations to increase growth and production, while reducing waste and pollution."

One of the doctoral students receiving funding is **Lana Hiscock**, a Biological and Chemical Sciences student under the supervision of Associate Professor Louise Dawe and Associate Professor Kenneth Maly.

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Hiscock, who previously completed her master's in chemistry at Laurier under the same professors, investigates and develops chemical structures at the multiple-molecule level.

"Without forming a molecular bond, molecules can interact with each other to form three-dimensional, supramolecular structures," said Hiscock. "These supramolecular interactions that we uncover could be used to improve device performance in organic electronics such as flexible display screens."

Another possible application of the research Hiscock is undertaking with her supervisors may be in the pharmaceutical industry. Some drugs have been recalled because polymorphic molecules – molecules with the ability to exist in more than one supramolecular structure – created different structures than expected, resulting in the drugs having unplanned effects.

"It is important to understand how things crystallize and the factors that go into producing polymorphism," said Hiscock. "We're adding to the fundamental knowledge about chemistry."

For a full list of Laurier's NSERC-funded researchers, visit NSERC's awards database.

Learn More

- Government of Canada invests over half a billion dollars to support thousands of students and researchers across the country (NSERC news release)

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