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Research projects by BU students target breast cancer, plastic pollution

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Brandon University (BU) students are battling breast cancer and investigating microplastics pollution with the help of Research Manitoba.

Students Riley Feser and Sachi Villanueva are each receiving \$12,000 this year through the Research Manitoba Master's Studentships Program. Feser and Villanueva are the first students in BU's Master of Science (Environmental and Life Studies) program to receive the awards through the Master's Studentships Competition.

Feser is working under the supervision of Dr. Mousumi Majumder, analyzing the proteins secreted from microRNAs found overexpressed in breast cancer cells. These small RNAs regulate growth and development, but in tumours microRNA overexpression promotes cancer metastasis. By identifying the proteins responsible for these changes, Feser's research could assist in early identification of breast cancer as well as provide a target for treatment.

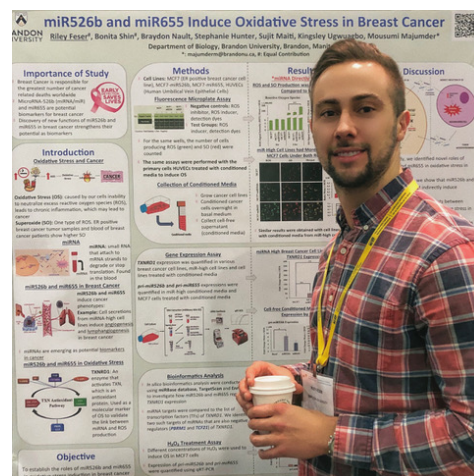
"Research has shown that one in eight women in Canada will be diagnosed with breast cancer in their lifetime, but early detection can save 99 per cent of patients' lives," Feser said. "By identifying breast cancer early through the blood, we can save patients' lives by developing an easier, less harmful detection method to combine with current therapies. This would also make testing at a younger age more accessible, as primary breast cancer screening starts at age 50, but incidences continue to rise in younger populations."

Villanueva is looking at the effects of microplastics, or small plastic particles, on the biology of the small freshwater zebrafish. Supervised by Dr. Christophe LeMoine, Villanueva is studying the short-term effects of microplastics exposure on the behaviour and physiology of the fish, and if these effects are reversible.

"Microplastics are all around us, and they are particularly abundant in aquatic environments," Villanueva said. "A better understanding on how these microplastics affect aquatic organisms is essential to assess the environmental impact of this pollution."

Feser and Villanueva are among only eight students in the province to receive awards through the Natural Sciences and Engineering arm of the Master's Studentships Competition this year.

"It is a major accomplishment for our students and for our program to have two award recipients," said Dr. Bernadette Ardelli, Dean of Science at BU. "Cancer and environmental pollution are major global issues that obviously affect us significantly right here in Manitoba as well. I congratulate Riley and Sachi as well as their supervisors on their efforts, and I'm excited to see what breakthroughs will come from this research."



Riley Feser's project is aimed at improving early detection of breast cancer.



Sachi Villanueva is studying

the effects of microplastics on aquatic life.