



Krissia Quesney Nevarez displays an inexpensive drone with an infrared camera at Carleton on Tuesday. *DARREN BROWN/OTTAWA CITIZEN*

# Ottawa students are getting creative

## Mitacs Globalink internship focuses on real-world tech solutions

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The family farm in Mexico that Krissia Quesney Nevarez calls home never had the luxury of an aerial view that tracks the health of its crops — but it could now.

The 22-year-old has been working on a project in Ottawa this summer that uses drone-aided technology to take readings of farmers' crops, an inexpensive way to proactively improve plant health.

The drone flies over farm fields, taking photos that display a near-infrared reading of how plants are absorbing sunlight and tracking their photosynthesis levels, meaning farmers can improve their use of water and fertilizer, Quesney Nevarez explained.

That could be of use to her father and brothers in the fields of her family's farm.

The family can't afford the costly plant-health monitoring systems currently available to large commercial farms. Her project uses off-the-shelf and 3D printed components, along with open-source software to keep costs low.

"This is (to) help small farmers like my family make sure the health of their crops," she said. "This technology is really expensive. ... We are trying to keep it as low-cost as possible, so that way small farmers, every farmer, can get their own."

Quesney Nevarez, an electronics engineering student from Ciudad Obregón, is one of 44 students from around the world who are developing projects in Ottawa as

part of the 12-week Mitacs Globalink internship program.

Fourteen international students are part of her team at Carleton University led by Jeremy Laliberté, an associate professor of mechanical and aerospace engineering. Much of their work involves finding new applications for drone technology, such as Quesney Nevarez's farming drone.

"Her background stood out, having had experience on a family farm, and this was a project about giving technology to small farmers both here and abroad, so it was a perfect fit," Laliberté said.

The Mitacs Globalink program is one of several academic development programs run by the Canadian not-for-profit. With funding from the federal government — and foreign partners such as the Mexican government — the program has matched more than 2,000 senior undergraduates with Canadian schools since 2009.

This summer 750 international

students are researching at 45 Canadian universities, 58 per cent more than in 2014. About a quarter of those students are from Mexico, a student body that's been growing increasingly attracted to Canadian universities, said Mitacs chief executive Alejandro Adem.

"The students there have a very high regard for Canada as a country, as a place to live, and as they get more familiar with the universities and the great research and teaching that's done there, it's very natural for them to see that as a target to go to study," Adem said.

Quesney Nevarez said her time in Canada has given her unfettered access to new types of technology. She had never even worked with drones before she came to Carleton.

"In my school, we don't have a lot of things. It's a small school. Even in Mexico, it's hard to find a 3D printer, and here they have three," she said. "It's really different."

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