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Physics student awarded prestigious scholarship

Ian Veenendaal, a doctoral student in Dr. David Naylor's astrophysics lab at the University of Lethbridge, has always been curious about how things work. His quest to build a spectrometer that can operate at cryogenic temperatures has earned him an Alexander Graham Bell Canada Graduate Scholarship through the Natural Sciences and Engineering Research Council of Canada (NSERC).

Worth \$105,000 over three years, the scholarships are given to high-calibre doctoral students in the natural sciences or engineering to allow them to fully concentrate on their studies and seek out the best research mentors in their chosen field.

"I'm honoured that someone saw my work and thought it was worth funding," he says. "It's always nice to have confirmation that what you do is seen as important. It really speaks to the legacy of the Astronomical Instrumentation Group; they know what to expect from David Naylor's students."

Veenendaal was awarded the scholarship based on his proposed doctoral research to perform cryogenic testing on instruments being developed for SPICA (Space Infrared Telescope for Cosmology and Astrophysics), which is expected to launch in the late 2020s. The scholarship will provide him with the flexibility to travel more, whether to present research results at conferences or to spend time working closely with technology companies like ABB that are also involved in the SPICA space project.

"Thank you to the committee for picking my research and I also have to thank the University for putting my research forward," he says.

Veenendaal grew up on a farm near Picture Butte and attended school in Lethbridge, graduating from Immanuel Christian High School. As a youngster, his curiosity about how things work meant he liked to take things apart and solve the mystery of their inner workings. At school he was interested in the sciences, especially chemistry and physics. He considered pursuing further studies in chemistry but physics eventually tipped the scales.

"As a physicist, I'm biased, but I say physics is the most fundamental of all the sciences. It really delves into things smaller than the atomic level, and looks at everything from the smallest

things in the universe to the largest things. If you want to know how things work, physics is the way to go,” says Veenendaal.

He was also interested in engineering but the chance to be involved in research as an undergraduate, to get to know his professors and do hands-on work, pulled him toward attending the U of L.

“In my second year, I started working with David. That’s when Herschel had just been launched and they were collecting data from it and it needed to be analyzed. I spent a lot of time working for David over the summer and part-time during the semester, doing mostly software development for looking at Herschel/SPIRE data,” he says. “I had the experience in David’s group when I graduated and I knew I wanted to get more into the hands-on end of things. David asked me to do a master’s degree with him and I said ‘Yes, but I need to be working in the lab, not sitting in front of a computer.’”

After completing a BSc in 2013, Veenendaal started working on a master of science, focusing his research on designing and building low temperature systems like the cryogenic test facility now in use in Naylor’s lab. The day after he completed his MSc in January 2016, he started working on his PhD.

“David always says a space mission is the making of a career. If you start at the point when everything is starting to come together and can be part of the whole process, that opens up paths. As soon as I’m done my PhD, the European Space Agency and others are going to be looking for people who know what they’re doing with this project, and I’ll be in a good position,” he says.

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