
‘Ask the big questions,’ advises Roberta Bondar

By Robert Liwanag
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Roberta Bondar told Ryerson students about the book that changed her life and how science informs her latest passion – photography. (Courtesy Roberta Bondar)

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When you're the first Canadian female astronaut in space, says Dr. Roberta Bondar, people always ask what you plan to do next. For Bondar, that decision came in 1998 when she left her medical research behind to set her sights on photography.

At her March 4 talk at the Li Ka Shing Knowledge Institute at St. Michael's Hospital, entitled "Dr. Roberta Bondar: The Science of Success," the astronaut, neurologist and photographer spoke about her academic career, spaceflight

and the diverse career paths Ryerson science students can take after graduating. The event was organized by students from the [Ryerson Science Society](#) and [Ryerson Career Centre](#).

“From where you are in your education, you should always be looking for something that grabs your curiosity, that grabs your passion and grabs that thing inside you,” said Bondar. “It doesn’t matter if it’s something that’s really simple or something that’s really complex – do something that you know you can put your energy in.”

From the beginning, Bondar was interested in two fields – science and art. As a child, she was drawn to her father’s new camera and in her spare time built model rockets. In high school, she read *Silent Spring*, an influential book by American marine biologist and environmentalist Rachel Carson. It changed her life.

Over the course of 18 years, Bondar earned four degrees from four universities – a bachelor’s in zoology and agriculture from University of Guelph; a master’s in pathology from Western University, a PhD in neuroscience from University of Toronto and a PhD in medicine from McMaster University.

“I always wanted to be a spaceman,” Bondar told the audience. “In Canada in 1983, the (Canadian Space Agency) said, ‘Let’s put out an ad in the paper,’ and they said if you had degrees, and you’re not claustrophobic and you’re not afraid of heights, you could apply.”

Bondar was selected from 4,300 applicants. Her space training began in 1984 – she was the only woman. In 1992, she took part in her only spaceflight as part of NASA’s STS-42 Space Shuttle *Discovery* mission, which lasted eight days and completed 129 orbits. While in space, Bondar took pictures of Earth with a specially built IMAX camera.

After the mission, she left the Canadian Space Agency to do research on what happens to an astronaut’s body when he or she comes back from space. She participated in blood-flow research with engineers from Ryerson and University of Waterloo.

“We worked with Ryerson to develop these experiment sets, and we developed a lot of algorithms and computer programs to test astronauts before and after spaceflight,” said Bondar. “(These tests) then were used in hospital settings for people who had neurodegenerative disorders like Parkinson’s disease ... because they faced the same kinds of issues with blood pressure dropping.”

Expanding on the photography she did in space, she travelled across Canada in 1998 as a landscape photographer, visiting all of the country’s national parks. Bondar has since published two photography books, *Passionate Vision* and *Landscape of Dreams*. The [Roberta Bondar Foundation](#), which she co-founded in 2009, raises awareness of environmental concerns through guided tours and field experiences in Canada’s wilderness.

“You can’t be a good scientist unless you think creatively, and critical thinking when it comes to science needs to be balanced by creative thinking,” said Bondar. “Your experiments are only as good as the questions you’re going to ask, and so you need to ask the big questions.”