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University of Waterloo
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Geology
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**NASA Academy Research
Project:**
**Searching for Life Underground: Experiments
with Drilling in Mars Analog Terrains**



Principal Investigator: Dr. Carol Stoker

Education:

I am currently finishing my final year of the B.Sc. Honors Geology program at the University of Waterloo in Waterloo, Ontario. I'm also just finishing up my thesis: a "Paleoenvironmental Analysis of the Dakota Sandstone as a Mars Analog". Upon graduation, I plan to pursue my M.Sc. also in Geology, at Memorial University in Newfoundland. I will be studying ice berg scours in the Canadian Arctic as an analog for features that appear to be ice berg scours on Mars.

Experience:

I decided in high school that I wanted to be a scientist and an astronaut. Since then, I pursued my dream of becoming a space scientist in many different ways; it was a battle to find "my field"! First, I entered York University's "Space and Communication Sciences" program, specializing in Physics and Astronomy, and then switched into Earth and Atmospheric Science, then Geophysics and Biology. Finally, I transferred to the University of Waterloo for the final 3 years of my B.Sc., to pursue more field-based studies of Geology and Biology. At UW, I co-founded the Waterloo Space Society, to unite all those in the UW community interested in space science and technology. In November 2002, I attended the CSA Canadian Space Exploration Workshop, focused on designing an all-Canadian robotic Mars Mission. This conference really opened my eyes to the possibilities for a space-geology-biology-and-atmospheric-science fanatic like me! I joined the Astrobiology and Geology discussion groups, began to realize my future research possibilities, and decided that Astrobiology Academy would be the perfect way to start my scientific career. It was also at that conference that I first got involved with Mars Society Canada; I now sit on the Board of Directors. Last year, I had the amazing opportunity to participate in Expedition One – the first Canadian-run Mars Mission simulation, initiated by Mars Society Canada and Mars Society Australia, held at the Mars Desert Research Station (MDRS) in Utah. There I worked with world-class

scientists and engineers, and collected data for my thesis. ...And I got to play Astronaut for 2 weeks! I am currently studying a concretion-bearing unit of Utah's Dakota Sandstone as an analog for the outcrop recently discovered on Mars by Opportunity. Because of my work on Expedition One, I became a member of the Association of Mars Explorers. I have also done geological fieldwork in Western Newfoundland (the most beautiful place in the world), Central Ontario, and Southern Quebec, and meteorological fieldwork in Southwestern Ontario. I love being out in the field, and I now enjoy helping to coordinate the field science at MDRS and at the future Mars-Oz as a member of the MDRS Remote Science team, and Mars Expedition Research Council. This past January, I worked with a team of dedicated Waterloo Space Society members to organize and host the largest student aerospace conference in Canada; the Canadian Student Summit on Aerospace.

Extra-curricular Activities:

I love teaching kids: I spent many years coaching figure skating and gymnastics, and working as a tour guide at York University's Astronomical Observatory, and the University of Waterloo's Earth Science Museum. I'm really looking forward to giving presentations about space for local elementary schools as a Canadian Space Agency Student Ambassador. I adore traveling: last winter I organized a trip to Arizona for the UW Earth Sciences Department. It was amazing – I love the desert! Also, each summer until recently my family has traveled in our Volkswagen camper to a different place in North America. One of the few places we haven't been yet is California! In my spare time I enjoy hiking, camping, yoga, and rollerblading. Once I graduate I hope to get back into karate and rock-climbing, and see if I can remember how to play the piano! I'll also continue working towards obtaining my pilot's license.