

## Arctic Adventure Reinforces Lessons Learned at CC

By Lauren Bennett Watel '07



Lauren traveled to field sites by foot, Dalton Highway, and sometimes helicopter. Courtesy of ARCUS, photo by Byron Crump.

My path to the Arctic involved several stops after I graduated from CC with a major in biology. I realized through my years of involvement with Colorado College Learning Initiative in the Mountains (CCLIM) and several education classes at CC that I was interested in pursuing education as a career.

I attended a graduate program at IslandWood learning center, which partners with the University of Washington, to learn and practice environmental education (EE) while working at a residential EE center on Bainbridge Island, Washington. After completing the program in 2009, I began teaching high school biology and AP environmental science at St. Mary's Academy in Englewood, Colorado. I always strive to continue my own personal education and growth to add experience and bring material into my classroom. When I heard about PolarTREC, I knew it was the right program for what I desired.

I was selected as one of 12 PolarTREC teachers for the 2014-15 field season. PolarTREC is a National Science Foundation-funded program that sets out to partner educators and field researchers. The idea behind the program is that educators gain hands-on field experience, and researchers gain a team member to help them communicate their findings in a way that the public can better understand. This experience becomes a true partnership and a collaborative effort between the teacher and researcher.

Byron Crump, associate professor at Oregon State University, selected me to help continue his work in the Arctic tundra at Toolik Field Station, Alaska. Byron set out upon this particular grant as a biogeography project looking at freshwater microbes — microscopic organisms such as bacteria, fungi, and protist microorganisms. He is trying to figure out *what* is present, *when* they are present, and *where* they are present. He's exploring uncharted territory that was previously inaccessible due to technology; DNA sequencing had to advance in reliability and affordability to make this study possible.

Byron knew from all of his previous research and education that microbes are critical to a functioning ecosystem. Microbes play key roles in cycling nutrients such as carbon and nitrogen, and without them we (and probably most other species) would not be able to survive. Byron believes that we should better understand the organisms that play such a vital role in our lives and the world around us.

The Arctic and Antarctic are far from closed systems. Yes, they seem far away and unfamiliar to most of us, but the changes occurring in the polar regions have true implications for us at home and around the world. Carbon that is released from thawing permafrost is now exposed to both sunlight and microbes. This carbon that was once stored now can be broken down and enter into the atmosphere and impact global temperatures and other climatic variables. Researchers are trying to understand the systems before getting too far behind.

Read more about my experiences, the research, and implications at my online journal: [www.polartrec.com/expeditions/microbial-changes-in-arctic-freshwater](http://www.polartrec.com/expeditions/microbial-changes-in-arctic-freshwater).

This experience helped reinforce the lessons I was taught at CC: The world is extremely interconnected, and it will take people from all disciplines to make significant changes in any problem faced. I also believe in and try to emphasize hands-on and real-world significance, and tie as many tangible examples and research into my classroom as I can manage.

My education at CC prepared me for graduate school, a career in teaching, and opportunities such as PolarTREC by helping me be efficient and effective in managing my time, as well as teaching me to think critically through any challenge I encounter. I also developed strong lab skills and utilize those in my classroom. I look back on my time at CC fondly, and know that my love of learning and adventure was fostered there.

*Lauren Bennett Watel lives in Denver with her husband **Ethan Watel '07** and their dog Ralph.*

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