

LESLEY URASKY PRACTICES HANDS ON (AND COATS ON) SCIENCE

by RoseMarie Aridas
Alumnews Writer

Five weeks without a shower, living in a tent atop the frozen polar desert, and Christmas and New Year's away from her family were not enough to deter Lesley (Cunningham) Urasky (BS '90, MS '93) from fulfilling her childhood dreams of travel and her yearning to go to the South Pole.

As a participant in the National Science Foundation, PolarTrec—Teachers and Researchers Exploring and Collaborating—Urasky said she “hopscothed down the Beardmore Glacier” doing geology research in camps Cloudmaker, Mt. Kyffin and Mt. Hope for the Glacial History in Antarctica expedition last winter.



Top: Our camp - Scott's tents on Mt. Kyffin looking across the Beardmore Glacier. The tent on the right is mine. Photos and captions courtesy Lesley Urasky.
Left: This is a fisheye view of the horizon and myself holding the sample bag. It is taken from the perspective of the rock sample as if it were lying on the ground looking up at the sky.

Urasky said she applied to PolarTrec after seeing an announcement in a professional publication. She applied and weighted the application to include 17 disciplines she thought made her more eligible and appealing, and wrote fifteen 300-word essays as part of the application. In the end, Urasky was one of fifty individuals selected from 250 applicants. She then had “very detailed” ninety-minute interviews with researchers for both the Polar and Norway expeditions, hoping for the Antarctica project.



“In the second interview, I really connected with the two researchers, John Stone and Howard Conway, and I found out the next day that they selected me.”

Urasky, and Stone and Conway, who had done research in Antarctica before, mapped and took samples of glacial moraines which were then shipped to the University of

Washington to contribute to ongoing research to date the Last Glacial Maximum (LGM).

Urasky and the others also collected algae and soil samples, studied salt-water incursions and found plant fossils that support the theory that the Earth was once one large land mass, because they were from plants native to South America and the southern portion of Africa.

Trained as a geologist, teaching is a second career for Urasky. Following her teacher-husband Dave Urasky (BS '82) to Texas, she found she lacked proximity to the cities where she would likely find a position in her field. While teaching high-school level science, she took university classes and received an alternative certification, making her qualified to teach every field of science required by the Texas school system. Now she is in her seventh year of teaching in Rawlins, Wyo.; this year's classes include Physical Science, Principals of Biomedical Science, Geology and Astronomy.

But it was her geology training that she called upon as a teacher and in the Antarctic. "UW has a very field-based geology program and I was used to being out in the field collecting data when the wind starts howling. The back country of Antarctica was just like what I experienced in the field and growing up in Wyoming." Urasky believes that her degrees and ensuing geology career allowed her "to go into another field with some authority. I really think

that science teachers who have had the experience of doing real science before they come to teaching have a completely different perspective of how to teach the science."

The expedition also "changed my teaching style quite a lot," she said.

"In the evening we were able to have extended conversations and I could ask 'What do you wish kids were coming out of high school prepared to be able to do to make them more successful in school?' The conversations confirmed what I had suspected all along: the ability to think outside the box, to write, and stronger math skills. I had known this because of all these studies showing that remedial programs are too full."

Now Urasky has her students read scientific articles by journalists "who have taken the most recent scientific findings and written them in lay person's terms." First the class reads and discusses the same curriculum-related articles and practices writing abstracts. Then several times a semester they find their own articles and create PowerPoint presentations summarizing two or more related articles and their own conclusions.

Urasky believes that if we want the U.S. to compete globally, teachers need to approach science with relevancy and to prepare our educators to show "that science is not necessarily only theoretical applications by having

them do real science - not 'cookbook laboratory science'. If you're doing real science, there's so many confusing outcomes. 'Well this could be related to this. Maybe we need to look at this point of view' - that's the way science is. Most of your science is an incorrect hypothesis and you need to look back and think," she said.

"Science explains your whole world - everybody loves science! I put my students outdoors in an environment that they are familiar with. How can you drive across the state of Wyoming and not have questions!"

To the right are excerpts from Urasky's expedition journal. She blogs about the expedition's nutritional needs, survival methods, frustrating delays, scientific methodologies, her response to visiting Sir Robert Scott's Discovery Hut, a monument to Ernest Shackleton's historic polar expedition, and finding, and sampling, 15,000 year old glacial ice. For more of Urasky's journal, visit www.PolarTrec.com/member/Lesley-Urasky.



Here I'm tasting 16,000-18,000 year old ice from the last glacial maximum

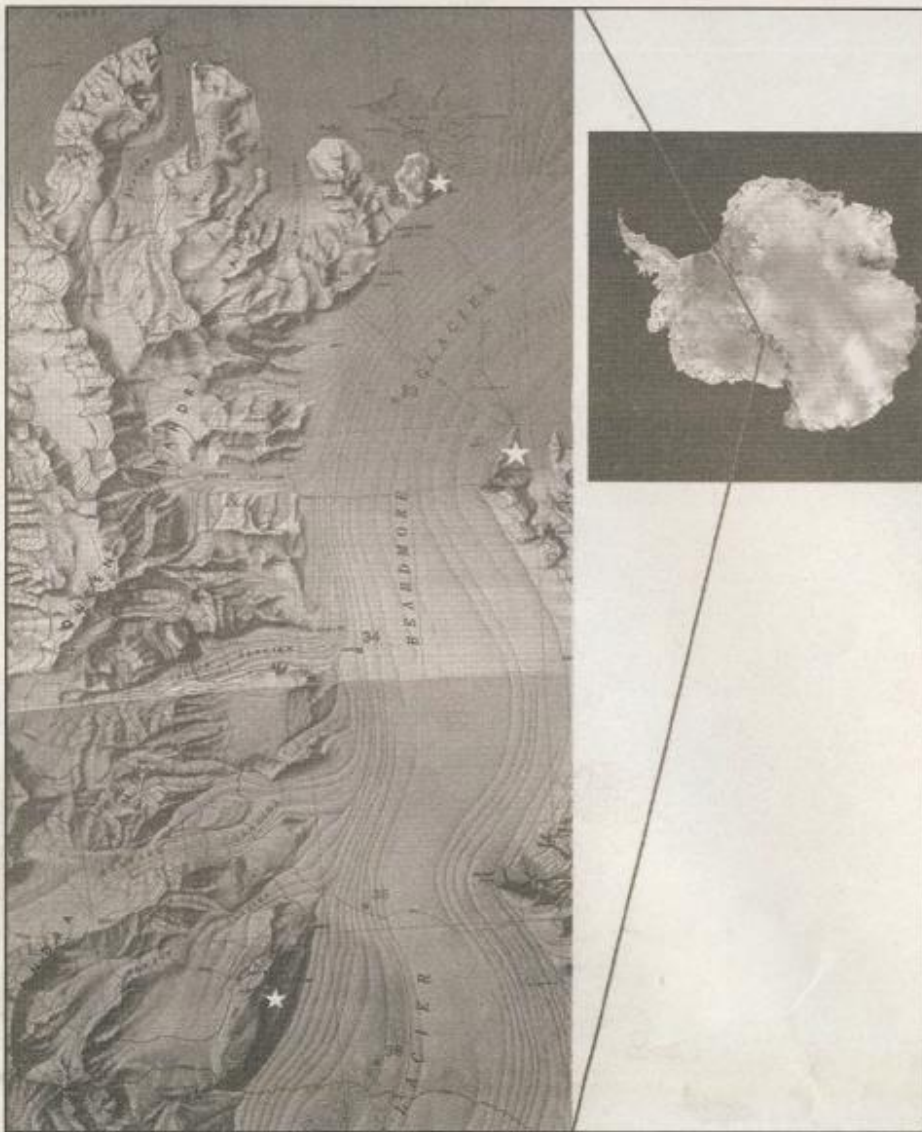
Photo by Lesley Urasky

Dec. 20, 2010

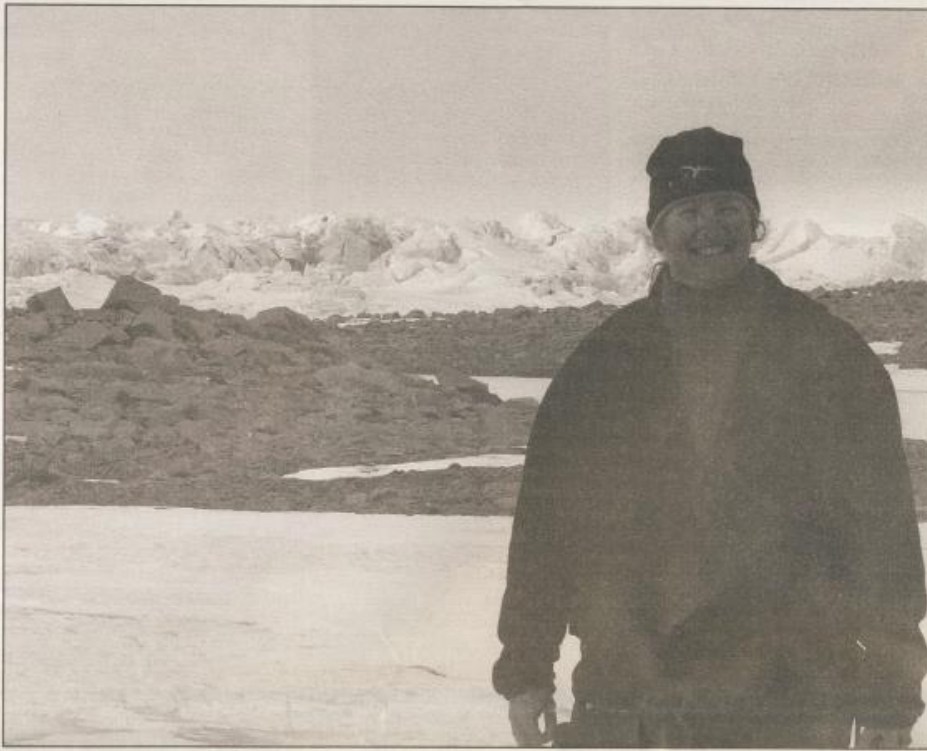
Fieldwork for exposure dating is very rigorous... we zigzagged ... along the margins of the moraine... a very haphazard assemblage of rocks and sediments. The rocks range in size from pebbles to car-sized boulders. They are randomly scattered and formed ... hummocky landforms. For the sample to be useful for dating ... it must be located near the margins of the glacial boundary.... If the sample is too far outside the LGM limits then its membership ... becomes suspect. I often felt inadequate while searching for samples. It seemed like every potential sample I found was lacking just one of the criteria.

Jan. 5, 2011

When people think of Antarctica's landscape, they think of ice and rock - shades of whites, blues, browns, and grays. One doesn't think of plants ... On the Antarctic Peninsula, there are a variety of mosses. In glacial lakes throughout the continent, there is abundant algae ... By knowing the chemistry of the water in which it lives and by identifying the species, some of the current and past history of the glaciation in this part of the Transantarctic Mountains can be determined. 🌿



Map of where we were on the Beardmore Glacier.



This is a self-portrait taken at the base of Mt. Hope where it meets the Ross Ice Shelf. The ice is shattered into huge blocks from the motion of the Beardmore Glacier flowing into it.

Photo by Lesley Urasky



I'm taking a rest from carrying about 20 lbs. of rock samples back to camp on Mt. Kyffin.

Photo by Lesley Urasky