Voices from the Community

Transferring the Polar Research Experience

Volume 2 Number 1

Mentoring: On Thin Ice?

by Louise Huffman

IL Regional Workshop Participants Working on Louise's Sediment Tube Investigation

During the research season I was in Antarctica, the moats around the perennial frozen lakes of the Dry Valleys began to thin. Each member of my research team at one time or another found him/herself walking on thin ice, and occasionally breaking through and falling into freezing cold water. In some ways, those incidents are analogous to my mentoring experience!

In the beginning of my work with my collegial mentoring team, there was great enthusiasm, and I felt I was on solid ground, similar to standing safely in the center of solidly frozen Lake Fryxell. My mentoring team consisted of four junior high school teachers from my building, one elementary teacher, and three high school science teachers. Most of us were also serving on our district's science curriculum committee where we discussed systemic change in how we teach science and how to achieve an inquiry-based classroom. During our mentoring meetings I always had an agenda, to help keep us on task and work toward a common goal. I also brought little niceties such as snacks and TEA pins and patches. These went a long way to encouraging continued dedication to our work together.

Before leaving for the Ice, I visited many classrooms to build excitement and interest in following my journals. I shared with many teachers the activities that my collegial team and I had developed, and with my mentees I conducted workshops on district in-service days. While in Antarctica, my collegial team played an important role in transferring the experience to students in my district. They took a lead in their buildings to encourage other teachers to have students following the journals and sending me e-mails and questions.

Two of my collegial team were the lead teachers during our live feeds from Antarctica. One of my mentees had her students each "adopt" one of the streams we were studying in the Taylor Valley. They read the previous research and then compared it to the data I was collecting and posting. I brought back water samples from each of the streams so that those earth science students could do water quality testing on their adopted streams. Another of my mentees, a language arts teacher, had her students take turns reading my journals daily and evaluating how I was doing professionally and personally as my expedition unfolded. In their science classes, they studied glaciers and asked questions through me of the glaciologists. Through these interactions, students in my district moved beyond the four walls of their classrooms and into educational arenas not afforded by traditional text-based curriculum.

After returning from Antarctica, it became more difficult to meet with my mentees. I had purposely built a collegial team with more teachers than required, in the event that some might not continue for the full number of required hours. As it turned out, life did interfere and several dropped out for various reasons. Each loss from my team felt like falling into that freezing lake water.

Last November, I co-facilitated a regional polar science workshop, which was well attended by my mentees. We spent a full Saturday together interacting with scientists and exploring parameters for developing good inquiry science lessons. Bringing teachers and scientists together to explore ways in which we can continue to be connected put us back on solid footing again. Meeting the mentoring hours required by the TEA grant has been a constant worry, but by plugging away and sharing ideas for mentoring, we can continue to stay on solid ice and stay away from those thin areas that cause us to fall into that freezing water!

TEA Updates

- Congratulations to Dena Rosenberger, Richard Jones, and Juanita Ryan for completing their TEA mentoring requirements!
- TEA is pleased to announce funding opportunities to support more TEA teacher facilitated regional workshops. An announcement has been sent via email. Please see the TEAs Only area of the site for more information.
- TEA Program has moved to the University of Rhode Island's Office of Marine Programs. An email was sent in July and is posted on the site under news from the poles.
- TEA Annual Reports will be due DECEMBER 6th!!!!

Mentoring and a Student Scientists Program

by Scott McComb

Columbus Public Schools Student Participant in the EMSI Student Scientists Program working on a research investigation

I am Scott McComb, TEArctic 2000. After years of teaching middle school science, I finally graduated and am now teaching physical science and physics at Fort Hayes Metropolitan Education Center, a combined arts-focused academic high school and career center in Columbus (Ohio) Public Schools. A couple of years ago, through a network comprised of university researchers associated with polar region research, I organized a collaborative research project for my students with scientists at the Environmental Molecular Science Institute at the Ohio State University. It turns out that last year's work was a pilot project.

In the spring of 2003, Julie Beamer (an eighth grade science teacher with whom I have worked for years) and I decided to propose an extension of the project, allowing students who participated in the initial project to continue working on it, and to expand the project to include the 9th graders at my current school. Working with the Director of Outreach and post-doc researchers at EMSI, we designed, wrote and proposed a two-year, $35,000 supplemental award to the EMSI grant from NSF. During the summer of 2003, the NSF contacted us to let us know that our proposal was deficient, and was wondering if we would be willing instead to accept a one-year award for $90,000. Predictably, we acquiesced with good grace.

For the project, students are asked to generate questions and develop procedures to investigate factors that affect the rate at which organic pollutants biodegrade. We set up the microcosms, inoculate them, store them in the appropriate environmental conditions, and sample them. Samples are sent to Ohio State where they are analyzed using spectrometers and gas chromatagraphs. During the spring of 2004, our students'projects were presented at Ohio State in a special viewing, and at the EMSI poster session alongside graduate research posters.

Columbus Public Schools Student Participant in the EMSI Student Scientists Program working on a research investigation

As you might imagine, the time commitment for the project is significant, both in the planning and implementation. During the spring and summer of 2003, we met for many hours revising large and small details of the project. In the fall, we dedicated considerable classroom time and personal time to prepare lessons, field experiences, etc. This commitment continued through the year, culminating with the students' final presentations and possible publication. This project has provided an important big goal around which my students'learning can be focused. In many ways, it is like an independent science fair project… only better… way better. It gives students access to "real" science: uncertain, long-term, occasionally stinky, and important. Students and parents alike have come together around the excitement generated by the prospect of good results.

For Julie and me, the project has proved (again) how science education can and should be done.

Web Notes
http://tea.rice.edu

- See the TEA site for journals posted during the Arctic 2004 research experiences of TEA Betty Carvellas and ARMADA Kathy Couchon!
- An index of experiences to be posted on the site is being developed thanks to the efforts of TEA Amie Foster!

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