



# Voices from the Community

## Transferring the Polar Research Experience

Volume 1 Number 3

### Polar Science Workshops by Juanita Ryan

Greetings from Silicon Valley! I have taught at Toyon Elementary School in San Jose, CA for the past 30 years. This year I am teaching a combination fourth and fifth grade. For the past two years

I have had the pleasure of working with three teachers to develop polar science curriculum and activities. Amy Ishizu is a first grade teacher at Toyon, Susan Sakaguchi is a Special Day class second-third-fourth grade teacher at Toyon, and Julie Shultz is a seventh and eighth grade science teacher at Redwood School in nearby Saratoga. Although these teachers worked with me prior to my trip to Antarctica, it is only recently that we have developed a workshop format that has proved to be very successful.

While I was in the field with ANSMET (Antarctic Search for Meteorites) each of my team members researched/developed curriculum activities aligned to the standards at their particular grade levels. Amy focused on geography and math, Susan developed a teaching unit on penguins, and Julie found NASA's "Meteorite Mysteries" curriculum appropriate for junior high students. On my return from Antarctica, we refined and compiled these activities to present a school-site teacher workshop, student assemblies, and an Antarctica Night for the community.

All these events proved to be very successful.

## Reminders

- Update your summer mentoring activities online!
- This is a great time to write-up all your summer activities in your online annual report. Annual reports are due January 15th!

## TEA Updates

- Congratulations to Jason Petula for completing his TEA mentoring requirement!
- Congratulations to Juanita Ryan who has been named an American Institution of Aeronautics and Astronautics (AIAA) Distinguished Lecturer!
- TEA is pleased to announce funding opportunities to support TEA teacher facilitated regional workshops. An announcement has been sent via email. Please see the TEAs Only area of the site for more information.



NASA scientist & ANSMET veteran, Dr. Scott Sandford, shares Project STARDUST science with teachers

At the request of my PI, Dr. Ralph P. Harvey at Case Western Reserve University, planning began for a regional teacher/scientist workshop. The plan was to have a morning symposium where other ANSMET veterans would speak about their work in Antarctica and also present an overview of their current fields of research (Mars, Project STARDUST, and ANSMET 2002-03). The afternoon would be devoted to my experience in Antarctica followed by hands-on polar science activities and distribution of curriculum guides that my team had compiled. ANSMET Science Team Leader, Dr. Nancy Chabot, was able to join us. In response to announcements sent to local schools, Forty-seven people registered for the Saturday workshop held at the NASA Ames Research Center. The workshop was extremely successful. We found that having both teachers and scientists attend the same workshop worked well. The scientists enjoyed "reliving" their Antarctic experiences and were pleased to discuss their current research. Additionally, the teachers enjoyed the opportunity to ask questions and share ideas freely. Requests have been made to repeat the workshop with other ANSMET veterans next year. After the NASA workshop, we were asked to present the afternoon format for our District Professional Development Day. Although we expected 30 teachers, 65 showed up! Word has spread and requests have been made to repeat our workshop for another inservice day at other school sites and for a NASA teacher workshop to be held this summer.

Working with my team has been time consuming and sometimes stressful. It has been a lot of work! But after all the work was completed and the workshops presented, my team realized the pleasure of learning and sharing polar science with others. They've already committed to future workshops! Total time working with my team to plan and present two workshops: 35 hours.

## **Modern Mentoring** *by Dena Rosenberger*

While the concept of mentoring is an ancient one, mentoring busy colleagues in the 21st century presents problems that even Plato couldn't imagine. I teach chemistry at El Capitan High School, a 2000 student middle-income school in a suburban/rural area east of San Diego. The Grossmont Union High School District is made up of 11 high schools. Two years ago, when I returned from my TEA field experience in the Arctic Ocean, I thought it would be easy to find three teachers willing to spend time together to increase our knowledge of polar science and its applications in the classroom. And collaborate regularly for several years. And create activities for our classroom. And revise and add to our curricula. Plato, where are you now?

During the first year it was a struggle to find and keep three teachers who could meet regularly. I lost a new teacher at my own school who moved to another district and a science teacher/coach who could only meet a few evenings and was really too busy to take on something else anyway. No one else at my school was able to invest the time. Even I found it difficult to add polar science into an already full chemistry curriculum. Despite all of the setbacks, I have managed to meet sporadically with Bill Cleves, a chemistry teacher at nearby West Hills High School, for the last two years. My big break came when a friend moved into our district from San Diego Unified School District to teach environmental science, coordinated science, and chemistry at Helix Charter High School. Colleen Robinson not only agreed to become a "mentoree," but also was enthusiastic. We quickly set up a schedule for weekly meetings after school at Helix and were soon joined by another Helix teacher, Debi Byrd, who teaches marine science and coordinated science. All three teachers have become TEA Associates. Several things have finally made this mentoring process come together:

- Perseverance. If it didn't work out with a mentoree, I kept looking for enthusiastic, quality, long-term teachers to work with. Also, I travel to their school site.
- Flexibility with our weekly meetings, recognizing that everyone won't be able to come every week.
- Setting up our tentative schedule as far in advance as possible, usually about a month or six weeks at a time. Meetings are typically 2-3 hours, depending on what we do.
- Bringing something new to each meeting, whether it is a new activity that I have found for environmental science, polar science, or just an informative website.
- Presenting my arctic lecture to both Colleen's and Debi's classes in the past two school years, as a guest speaker.
- Ending the meeting with a discussion of what we will do in the next meeting along with what each teacher will bring. This gives them something to think about during the week and time to jot down questions or suggestions.

In the past year, I have finally come to feel that we are a cohesive group. Our meetings are a regular part of the week's schedule, and sharing is a natural part of the process. I can now imagine other teachers joining the group in the future just to gain knowledge and share the wealth. We have arrived at some sort of critical mass that ensures the group's continuance. I will also be teaching a new Environmental Science class next year so the mentor may become the mentoree! Plato just might be looking in and nodding his head knowingly.



*Dena Rosenberger and Colleen Robinson observing the behavior of melting ice at the 2003 TEA Transfer Workshop*

### **Web Notes**

**<http://tea.rice.edu>**

- The TEA Transfer Workshop was held in NY July 7-13, 2003. The workshop was a great success thanks to the hard work of all the participants and support from the American Museum of Natural History. 23 TEAs and Associates attended the meeting which focused on inquiry in science and inquiry in the science classroom. Check out new activities from the Transfer workshop at [http://tea.rice.edu/tea\\_classroommaterials.html](http://tea.rice.edu/tea_classroommaterials.html)
- The 2003/2004 Antarctic field season flyer is available for download in the TEAs only area of the site.

TEAis sponsored by the National Science Foundation's Division of Elementary, Secondary, and Informal Education in the Directorate of Education and Human Resources and the Office of Polar Programs. TEAis facilitated by the American Museum of Natural History, the Cold Regions Research & Engineering Laboratory, and Rice University.