



Voices from the Community

Transferring the Polar Research Experience

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TEA Mentoring: Collegueship Around a Common Theme

by Betty Carvellas

My name is Betty Carvellas, and I teach at Essex High School in Essex Junction, Vermont. Through the TEA program I worked with Dr. Jackie Grebmeier, University of Tennessee,

Knoxville, on the Shelf-Basin Interactions project in the Western Arctic Ocean during the summer of 2002, and on a related project in the Arctic during the summer of 2004. Following my TEA orientation in 2001, I compiled a list of approximately 25 teachers who were interested in receiving regular Arctic updates and four who wanted to be directly involved. I had my mentor team!

We were a diverse group of teachers: Peter Gustafson, 6th grade social studies, Dana Cummings, 6th grade science, Lynn Short, high school computer animation, and John Gazo grades 4/5.

Although it was difficult to get 5 people from 4 different schools to meet, we agreed to sign up for a district-sponsored "School Development Institute." In order to earn 3 graduate credits, each person committed to regular meetings, curriculum development within our schools, and individual reports at the end of the year. The additional incentive of \$200/person kept us all working hard throughout the year! Meeting at the end of the day proved difficult, but we always enjoyed ourselves and worked hard once we all arrived. At the end of the year, our group had followed TEA teachers in the field, developed and/or improved curriculum for our own classes, spent a day visiting CRREL and Hanover HS teacher Kevin Lavigne (TEA Antarctica, 2000), read and discussed articles on polar issues, shared polar resources, purchased polar resources for our classrooms, and made plans for the following year.



Dr. Jackie Grebmeier and Ms. Betty Carvellas in the Western Arctic Ocean.

Early in the second year with my colleague group, Dr. Jackie Grebmeier and her husband, Dr. Lee Cooper, both well-known polar research scientists, agreed to visit us. We spent most of our fall meetings planning for the Big Kid – Little Kid Polar Event. In February, nearly 200 students from grades 4 – 12 participated in a series of activities designed to introduce them to the Arctic. They sampled Arctic food, tried their hands at simulated scrimshaw, participated in an outdoor relay race to simulate the transport of diphtheria serum to Nome in 1925, and performed a science lab investigation on insulating properties. Throughout the morning, high school, middle school and elementary students worked together in teams as they moved from one event to the next. That afternoon and all the next day, Jackie and Lee made personal visits to the classrooms of the teachers in my colleague team. They were exhausted when they were done, but the students and teachers had an incredible time!

Our group worked exceptionally well together. We loved the opportunity to share ideas, resources and experiences, and the fact that we were all teaching at different age levels. I have always found that collegueship is a key component of the teaching experience, and the TEA program provided an opportunity for five very diverse people to connect around a common theme.



Student Participants at the "Big Kid -- Little Kid Polar Event "

Web Notes

- Try out the searchable index on the TEA site!
- Special thanks to TEA Amie Foster and Rob MacDonald for their efforts on the index and to TEA Steve Stevenoski and the TEA editors for their work on IceNews!

**Visit the Official TEA Site <http://tea.armadaproject.org>
and stay connected to the Polar Learning Community via IceNews
<http://www.icenews.org>**

TEA Mentoring: Connections to Arctic Sea Ducks, Antarctic Algal Mats, and New England Schools
by Robin Ellwood

My name is Robin Ellwood and I am fortunate to be the eighth grade science teacher at Rye Junior High School (RJH), which is located in the seacoast town of Rye, New Hampshire. I am also fortunate to work with a team of tremendously motivated and creative people who collaboratively developed and implemented interdisciplinary polar-based units at RJH. The primary members of my mentoring group include Sheila Adams (7th grade science), Molly Rothermel (8th grade math), Ron Fortier (8th grade social studies), Kerry Ridolfi (8th grade language arts), and Mary Coombs (library specialist).

One of my greatest successes with mentoring involved facilitating a TEA regional workshop at the Shoals Marine Laboratory on Appledore Island in the Gulf of Maine. I chose the Isles of Shoals for its unique location, limited access, and field related research opportunities. The goals of the workshop dovetailed with the goals of TEA: to bring inquiry based polar research to the classroom. During the workshop I shared some of my TEA experiences. My presentation focused on the algal mat research that is taking place in the Dry Valleys of Antarctica. I also described methods that my students use in a local New Hampshire pond to try to duplicate the Antarctic research. Researcher Joanne Leubbert, co-director of the Wild Waterbird Conservancy, was our featured speaker. Joanne has conducted a liver biopsy study (using radio telemetry) on harlequin ducks, black scoters, and white-winged scoters near Dutch Harbor, Alaska in the Bering Sea. She is investigating the far-reaching effects of environmental disasters on fragile ecosystems. A representative from the Cornell Lab of Ornithology who described the lab's Classroom Feeder Watch Program also joined us.



Joanne Leubbert presenting her research on Arctic sea ducks



Inquiry at the Isle of Shoals participants working on a mini inquiry-based experiment

Workshop participants were exposed to a variety of scientific studies that take place in the Polar Regions. These teachers discussed ways to bring the research into New England classrooms, and why these regions are important to the global community. Participants also conducted mini inquiry-based experiments while on the island in order to gain personal experience with the inquiry process and to gain confidence and ideas for successfully implementing inquiry into their own classrooms. Projects included determining how close a person could get to Herring Gulls compared to Great Black Backed Gulls before the gull reacted to their presence, finding the temperature of gull nests while incubating, and looking for variation in nest success (based on the number of eggs present) between nesting locations. Participants experienced numerous bird watching expeditions, visits to the island bird banding station and exploration of the phenomenal resources available at the Shoals Marine Laboratory.

This workshop was a valuable professional experience. A total of 30 participants from 8 different school districts and 15 different schools left the workshop with skills, resources, and a commitment to implement inquiry based strategies in the classroom. Perhaps the most rewarding aspect of the experience was bringing together such a diverse group of dedicated individuals and letting their ideas, enthusiasm, and creativity flow. The networking that started at the workshop has continued; some of us are even discussing creating a follow-up workshop next spring. I will be implementing the strategies used at the workshop to improve field based research opportunities for my students. Joanne Leubbert will be sending raw data from her Arctic research to RJH students for graphing and analysis. Polar connections are continuing to develop.

<http://www.birds.cornell.edu/cfw/> and <http://www.waterbirdconservancy.org/>

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