

Partnership

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Letter from the Chair: 20 Years of Supporting Science Education

- Pat Harcourt

Twenty years ago, the founders of WHSTEP looked at our communities in the upper Cape and saw a vibrant and productive group of science institutions and a dedicated and resourceful set of school systems. They recognized an opportunity and challenged us with an ideal – that scientists and educators could find ways work together to support science education and create memorable science experiences.

Every child starts out as a scientist, trying things out. Any parent who has ever watched a one year old drop Cheerios one by one from a high chair tray has seen a young scientist collecting evidence about the world through multiple trials with the same conditions.

Professional scientists are excited about their work, too. From the paleoclimatologists buzzing around a newly retrieved deep sea sediment core, to the fisheries technician reading an otolith section to age a fish, to a physical oceanographer plotting the track of a drifter buoy, scientists are motivated by their curiosity and the discipline to ask questions in a structured way.

Science is not a static set of facts, but a toolbox for investigating the natural world. Major problems such as a swine flu epidemic, disastrous oil spills, and the complex issues of climate change can be addressed using science to build understanding, but the discussions and recommendations for solving serious problems always include improving science literacy, which must start with science education.

Although the need for science education is great, recognized, and continuous, education systems in Massachusetts today are responding to the pressure for improving math and English–Language Arts test scores by reducing time dedicated to science, especially in elementary grades. How do we achieve greater support for science education? Here are some ideas:

Advocacy: Community members must speak out in public and in personal interactions, in writing and on social networks, to make sure administrators and policy makers know the value of science education and support it.

Experiences: WHSTEP works to enrich the curriculum by providing opportunities for students to participate in actively doing science. You can help by volunteering or helping us organize these events and projects.

Mentoring: WHSTEP sets up opportunities for students and scientists to have a personal connection. Contact us if you can spend time working with a few students or a class.

Materials: WHSTEP gives teachers access to information, photos, data, and lesson plans they can use with students, and mini grants to bring their own ideas to life. Encourage a teacher you know to attend events and apply for a mini grant!

Most WHSTEP projects are organized for relatively small groups or one class at a time. At recent WHSTEP events you might have seen teachers peering inside a Remotely Operated Vehicle being prepared for deep sea research, standing inside the base of a towering wind turbine, or watching a seal training session. At schools, you could have watched sixth graders racing solar cars, high school students demonstrating how they make biodiesel, or a middle school student working with a mentor on how to control variables in her science fair project. Although each group is small, collectively all these small projects add up to a significant impact on science education. *(Continued, p.2)*



Pat Perry

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For the WHSTEP community, our favorite outcomes are to see the gleam in a student's eye when she gets an idea or the delight on a teacher's face when he explores an undersea landscape in 3D. We want not only to connect scientists with teachers and students, but to inspire both to work together and walk together on the road to discovery.

WHSTEP has survived and carried out its mission for 20 years thanks to the hundreds of volunteers who have spent thousands of hours helping with projects, mentoring, compiling resources, and making presentations. Don't miss the excitement - join us as we embark on our third decade of bringing science and education together!

WHSTEP Celebrates 20th Anniversary at 2010 Annual Meeting in May

-Debbie Scanlon

Nearly 100 friends and supporters of WHSTEP turned out to celebrate its 20th anniversary on May 10 at Woods Hole Oceanographic Institution's Clark Building. Several of the WHSTEP founders and early advocates, including Mary Wright, Megan Jones, John Farrington, Molly Cornell and Beth Schwarzman, attended along with active and retired teachers and scientific institution staff. Keynote speaker was WHOI's Director of Special Projects, Dave Gallo.

Each school district and scientific institution sent its superintendent, director, or representative to congratulate and encourage WHSTEP.

Pat Harcourt, chair of WHSTEP's executive committee, began the program by stating that "the need for science education is huge." She said that teachers now have less time to teach science as they prepare students for the math and reading components of standardized tests, and noted that WHSTEP has coordinated thousands of volunteer mentor hours.

In introducing Dr. Gallo, WHOI Director Susan Avery said that scientists "must learn to become better storytellers," pointing to Dr. Gallo as an example of a scientist who can communicate the excitement and importance of research and exploration to the public.

Dr. Gallo, who has been at the Oceanographic for 24 years, came to work with Robert Ballard on the Titanic exploration. His interest was piqued by a National Geographic article that he saw while working in a shoe store. "I thought that exploration died in the 1800s," he said upon realizing that there were underwater mountain ranges still not yet explored.



Debbie Scanlon

Megan Jones, one of the founders of WHSTEP, talks with keynote speaker Dave Gallo, WHOI, at the 20th anniversary celebration.

"There is no standardized test for curiosity," Dr. Gallo told the audience. "It is hard to hold kids' interests sometimes, but I have seen them put down video games to look at a web site called EarthBrowser.com to view recent earthquakes and volcanoes." His own excitement and curiosity showed as he talked about WHOI's renewed efforts this coming summer to explore the Titanic, and "bring Titanic back to the public so everyone can explore the wreckage on the web."

After Dr. Gallo's talk, Judy Fenwick, a long-time WHSTEP supporter and former executive committee chair, gave a toast to WHSTEP's future, and helped Sarah Thieler, daughter of WHSTEP administrator Kama Thieler, cut the anniversary cake. Each participant took home a specially designed WHSTEP 20th anniversary mug.

Special thanks to all who made the celebration possible and for the generosity of WHOI's Academic Programs Office, Kappy's Liquors, and Taylor Rental.

Scenes from the WHSTEP 20th Anniversary Celebration
- photos by Debbie Scanlon and Pat Perry



WHSTEP Science Safari: Exploring Conservation Lands near Schools

-Kama Thieler

Teachers who attended the WHSTEP Science Safari on April 7 enjoyed a nature walk on a warm early-spring afternoon, and left with ideas about taking their students to explore conservation parcels near their schools.

The safari originated in the library of East Falmouth Elementary School, where teachers found maps and information highlighting conservation parcels near each school in Falmouth, Mashpee and Bourne. The materials included the “Mashpee National Wildlife Refuge Trail and Recreation Guide”, “Conservation and Recreation Land in Falmouth, MA”, and printouts from Google Earth, The 300 Committee Land Trust and the Bourne Conservation Trust.

The group of 14 was greeted by Beth Schwarzman, naturalist and author of *The Nature of Cape Cod*. She described the value of taking students into nature, whether in nearby conservation lands, or even just in the school yard.

She emphasized that the teachers don't need to know a lot of identification to make such field trips valuable. Instead they can use everyday skills such as observation, counting, writing, comparing and contrasting, and research as the centerpiece of a field experience.

Some examples include noticing different kinds of birds, trees, leaves or rocks and making a list or collection, and listening to distinguish human sounds from the sounds of nature.



Kama Thieler

Beth Schwarzman (second from right) shows teachers evidence of animal activity during the WHSTEP Science Safari in April.



Kama Thieler

Bob Bailey, Quashnet School, and Bob Laquidara, Lawrence School, examine a map on the shores of Green Pond in the Whelden Preserve in East Falmouth.

The group then walked a short distance down Davisville Road to the Donald Whelden Preserve, an 11-acre wooded parcel that borders Green Pond. Mrs. Schwarzman encouraged the group to look for clues about the land-use history of the parcel, such as multi-trunk trees (evidence of woodlots) or the presence vegetation such as blueberry or wintergreen that cannot withstand plowing.

She also described that it is obviously difficult to see animals while exploring with large groups of children, but they can find evidence of animals, including “cone-cobs” (pine cones that have been gnawed by squirrels), tracks, or woodpecker holes.

WHSTEP would like to extend many thanks to Beth Schwarzman, and to the teachers who attended the Safari for sharing their knowledge, ideas and enthusiasm.

Resources

For printable .pdf maps of 300 Committee parcels, including the Whelden Preserve, visit: www.300committee.org. Upcoming 300 Committee events and programs include a BioBlitz on June 26 in Hatchville, and the “Passport to Falmouth’s Conservation Lands”, a booklet with discovery activities for children. See the website for more information.

Science Community Lends Support to Local Science Fairs

- Kama Thieler

Science Fair season is a busy time of year for teachers, students, and the local science community. Many local institutions contribute mentors, judges, prize donations, and exhibits.

For 13 years, WHSTEP has organized a science project mentoring program at the Lawrence School in Falmouth. Members of the WHSTEP scientific community volunteer their time to meet with 7th and 8th grade students and help them design and refine their science projects. This year, mentoring took place in early February.

WHSTEP thanks the following volunteers for taking their time to help the students at the Lawrence School: **Michele Bahr, J.C. Weber, Liese Siemann, Sam Kelsey, Kristin Houtler, Elissa Shuett, David Koweek, Sheri Simmons, Debbie Scanlon** and **James Style** (MBL); **Bill Waite, Adrian Green, Claudia Flores** and **Brian Buczkowski** (USGS), **Melissa Patrician, Nancy Copley, Oliver Zafirou, Betsy Gladfelter, Porter Hoagland** and **Lauren Mullineaux** (WHOI); **Pat Harcourt** and **Erin Leonhardt** (WBNERR); **David McKeirnan** (Falmouth VIPS); **Phyllis Downey** and **Jeff Schell** (SEA); **Molly Cornell** and **Deb Coulombe** (community).

WHSTEP arranged for institution exhibits at the Falmouth District Science Fair on February 27. Woods Hole Oceanographic Institution displayed a REMUS underwater vehicle; Sea Education Association presented materials about their high school and undergraduate sailing research programs; Marine Biological Laboratory brought horseshoe crabs, starfish and other organisms from the Marine Resources Center; Woods Hole Research Center showcased their Arctic research and educational objectives, and promoted the new Carbon Trail on their campus; USGS Coastal and Marine Science Center exhibited maps and 3D images and promoted marine careers; and the Zephyr Education Foundation presented their boat trips available to local schools to collect oceanographic data and marine organisms.

The inaugural Bourne Science Fair, sponsored by the PTA, was held on March 19 at Bourne Middle School. WHOI, USGS, MBL and the Encyclopedia of Life project exhibited at the Fair.



Chris Polloni

Claudia Flores, USGS, describes seafloor mapping to a student as part of the science institution exhibits at the Falmouth District Science Fair in February.



WHSTEP Mini-Grant Recipients

-Kama Thieler

WHSTEP offers mini-grants to teachers and their partners to provide support for new and innovative science, math, and technology programs in our member schools. During our recent funding rounds, these projects were funded to incorporate new activities into schools:

PTA member Belinda Rubenstein and Principal Debra Howard of Peebles Elementary School in Bourne were awarded a grant for **Bringing Science Alive in the Classroom**. This will provide supplies and equipment to create a hands-on science program, based on standards in the elementary science curriculum, and to promote participation in the yearly science fair.

Bournedale Elementary School Principal Jeanne Holland received funds for an after-school **LEGO Club**. The grant will provide gears, wheels and other LEGO components for the new enrichment club which will emphasize math, science, and engineering concepts.

Bob Laquidara, Lawrence School, and Tracey Crago, Falmouth Volunteers in Public Schools, received funds to support the **Cross-Age Science Teaching Program (CAST)**. In the CAST program, a group of eighth graders works with every third grader in Falmouth's four elementary schools during their science unit on energy. The grant will provide supplies for interactive science lessons and demonstrations focusing on electricity and electrical circuits.

Woods Hole Research Center Hosts WHSTEP General Meeting

-Debbie Scanlon

WHSTEP's General Meeting was held January 28 at the Woods Hole Research Center (WHRC). About 30 teachers, students, institution liaisons, and members of the public heard an interesting summary of the meetings at the 15th Conference of the Parties (COP 15) of the United Nations Framework Convention on Climate Change in Copenhagen in December.

Nora Greenglass, research assistant in the policy department at WHRC, was one of 25 scientists from Woods Hole to attend COP 15. She described the highly charged atmosphere at the meetings and within the city of Copenhagen, and the successful inclusion of the REDD (Reducing Emissions from Deforestation and Forest Degradation) initiative in the Copenhagen Accord.

The WHSTEP meeting also provided an opportunity for teachers and the public to learn about WHRC's green building, completed in 2003, and its on-site education trail. WHRC liaison Kathleen Savage coordinated the meeting for WHSTEP.

Visit the WHSTEP website at:

<http://www.who.edu/whstep/>

For announcements about events related to science and math, subscribe to the WHSTEP listserver at:

<http://lists.mbl.edu/mailman/listinfo/whstep>

For all WHSTEP questions, send an e-mail to:

whstep-info@who.edu

Summer Lectures in Woods Hole

WHOI Science Made Public Lecture Series

<http://www.who.edu/page.do?pid=9156>

All talks are held in the WHOI Exhibit Center Auditorium located at 15 School Street in Woods Hole.

MBL Friday Evening Lecture Series

http://www.mbl.edu/events/events_friday.html

MBL Lillie Auditorium, 8:00 PM, 7 MBL Street, Woods Hole. Lectures are free and open to the public.

Distinctive Voices at The Jonsson Center

http://www.nasonline.org/site/PageServer?pagename=Jonsson_Upcoming_Events

A series of public events at the NAS J. Erik Jonsson Center, 314 Quisset Avenue, Woods Hole.

Save the Date
WHSTEP Liaison Dinner
October 20, 2010
Landfall Restaurant, Woods Hole

The WOODS HOLE SCIENCE AND TECHNOLOGY EDUCATION PARTNERSHIP (WHSTEP), established in 1989, is a partnership of schools, scientific institutions, businesses, and community resources. Its purpose is to support, promote, and expand science, math, and technology education and science literacy in the participating communities.

How to get involved:

- ✓ Attend a Partnership meeting in January or May, or a Science and Math Safari
- ✓ Contact an Executive Committee member or a liaison with program ideas or feedback
- ✓ Host a teacher tour or class field trip in your lab
- ✓ Volunteer to present your research at a WHSTEP event
- ✓ Serve as a mentor for a student science fair project
- ✓ Make a financial contribution to support WHSTEP programs and grants for teachers

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