

Communication, Education and Outreach

IN THE *SCIENCE PLAN*, THE NATIONAL RESEARCH COUNCIL STATED THAT EDUCATION AND OUTREACH ARE CRUCIAL ELEMENTS OF AN EFFECTIVE SCIENCE PROGRAM, AND RECOMMENDED ENCOURAGING OUTREACH AND EDUCATION BY PRINCIPAL INVESTIGATORS AS PART OF THEIR PROPOSALS OR AS INDEPENDENTLY FUNDED ACTIVITIES TO LET THE GENERAL PUBLIC KNOW ABOUT NPRB-FUNDED RESEARCH AND NEW SCIENTIFIC FINDINGS.

From the beginning, the Board has strived to make its information available to many different audiences including managers, rural communities, people dependent upon the resources, students, congressional representatives, and others interested in the marine ecosystems off Alaska. Strategies for education and outreach include different products and mechanisms for reaching each of these groups, capitalizing on existing partnerships and responding to new opportunities.

Some of the Board's first decisions involved education and outreach. Early in 2002, the Board approved an Alaska SeaLife Center recommendation to use some of the \$800,000 North Pacific Marine Research Institute funds to:

- enhance opportunities for field scientists to document their research on video
- provide seed money for marine science education for teachers and students in Alaska communities
- establish post-secondary education internships, short courses, and workshops in marine science and education, veterinary medicine, and teaching programs
- support development of a Bering Sea exhibit at the Alaska SeaLife Center and an aquarium at its satellite office in Anchorage

The Board prioritized creating a website to provide information to the general public and scientific community. It also placed education and outreach requirements in annual requests for proposals, requiring \$500 in each project in the early RFPs, but gradually increasing to \$2000 in later RFPs.



NPRB's ten-foot exhibit gives conference and workshop participants an overview of the organization's mission.

Alaska SeaLife Center

A significant step forward in education and outreach occurred in developing the 2004 RFP. The Board decided it needed a professional team so it inserted a priority for a program to help principal investigators develop materials for interpreting project and research results. The Alaska SeaLife Center, which already had its own vibrant program of such activities, received a grant of \$103,000 to develop the program for NPRB. They hired Michael Illenberg for two years, during which he developed exhibits, brochures, and fact sheets for many of the projects. He also played a major role in developing the Southeast Alaska Sperm Whale Avoidance Project video of sperm whale depredation on longlines in Southeast Alaska.



This relationship with the Center continued through most of 2008. Illenberg left in 2006 and the Alaska SeaLife Center hired Nora L. Deans as his replacement. She brought a wealth of experience in communicating ocean science and developing books, videos, exhibitions, and public programs for informal learning centers such as the Monterey Bay Aquarium, where she created and directed a marine science publishing program. Summaries of the strategic communication, education and outreach activities, and projects over the years may be found in the final reports for the grants to the Alaska SeaLife Center, listed in Table 7.

Nora Deans works closely with Carolyn Rosner, whom NPRB hired as an assistant program manager with a specialty in communication in May 2006 for her expertise in website development and graphic design. The outgrowth of websites and publications now reach diverse audiences with information about NPRB funded research, and the overall program has flourished over the last two years.



The Board continues to support these efforts by budgeting about \$150,000 annually, of which \$50,000 is dedicated solely to additional education and outreach materials. NPRB hired Nora Deans directly in October 2008 to further grow the communication, education and outreach program, and to serve as principal investigator for the BSIERP Communication, Education and Outreach component described in the Integrated Ecosystem Research Program section of this report.



Sharing Research with Public Audiences

NPRB staff develop dynamic websites, publications, exhibits and other materials, including project synopses and research summaries to bring the research to life for the diverse audiences described in the Board's *Science Plan*. NPRB also provides information to the media, resulting in public radio programs and news features. In 2008 NPRB contracted with Encounters North, an award-winning radio program that showcases Alaska's natural and cultural heritage and created by Dr. Richard Nelson, a widely respected anthropologist, writer and producer. Staff worked closely with independent radio journalist Elizabeth Arnold on several Encounters programs produced in the field alongside NPRB funded scientists working on fur seals, sea ice, and the patch dynamics component of the BEST-BSIERP project. Each of these radio programs are featured on the NPRB website and are downloadable as podcasts. More programs are currently in development.

In 2008, NPRB executive director and staff traveled to Washington, DC and met with colleagues at the Smithsonian Institution's National Museum of Natural History new Sant Ocean Hall and at NOAA, (which developed a network of Ocean News Kiosks displaying short videos about ongoing research and exploration), to share research stories and explore collaborations.



A scientist shares Bering Sea research stories with 4th grade students.

Table 7: Education and Outreach Projects

Project	Title	Research Theme
403	Building an Education and Outreach Program for the North Pacific Research Board	Education and Outreach
537	Building an Education and Outreach Program for the North Pacific Research Board	Education and Outreach
703	Education and Outreach for the North Pacific Research Board	Education and Outreach
802	Education and Outreach for the North Pacific Research Board	Education and Outreach



Elizabeth Arnold records the sounds of fur seals on St. Paul Island for an Encounters North radio program about the Bering Sea project.

FEATURE

Images of Alaska's Seas

IN 2007, NPRB LAUNCHED AN ANNUAL PHOTO CONTEST THAT EMPHASIZES its research themes and helps promote public understanding of the Board's mission, while bolstering image resources. The Board and Advisory Panel selected the winners at the April 2007 Board meeting. Prizes ranged from \$1,200 for first, \$600 for second, and \$300 for third in the adult category, and \$600 for first, \$400 for second and \$200 for third in the youth category for those ages 17 and under. The winning photographs were incorporated into a 2008 calendar shared with external reviewers of research proposals, the Board and Committees, and participants at the Alaska Marine Science Symposium.

The Board judged the second annual competition in April 2008, choosing winners from finalists narrowed down from a field of 200 photos, including 14 in the youth category. Professional art directors, designers, and publishers acted as judges to narrow the field to ten adult and three youth finalists. The Board, with help from its Advisory Panel, chose the top three in each category.

NPRB featured the winning images in a 2009 calendar, and hosted an exhibit of photo contest images at a local restaurant gallery during the 2008 Alaska Marine Science Symposium, with an opening reception as part of Anchorage's First Friday events.



2008 Calendar cover.



2009 Calendar cover.



Robert Flood



Girdwood elementary school student Sebastian Middlestadt (with Dr. Carrie Eischens) received an NPRB award for his marine science project, "Tidal Power vs. Indian Creek." West High School student Kelsey Meacham (with Dr. Francis Wiese) received the NPRB award for her project "Cook Inlet: Sea Ice Variability"



Nora Deans

Inspiring Youth to Pursue Science

In 2007 and 2008, NPRB sponsored special marine science awards at the Alaska State Science and Engineering Fair for elementary, middle, and high school science fair projects. Awards included a cash prize and a behind-the-scenes-tour of the Alaska SeaLife Center.

Virtual Communication

Dynamic websites for NPRB (www.nprb.org) and the two integrated ecosystem research programs (www.bsierp.nprb.org; www.goaierp.nprb.org) share a wealth of information with both the scientific community and the public, and are constantly updated with stories from scientists and staff in the field, as well as media updates, program highlights and project updates. Staff also maintain the website for the Alaska Marine Science Symposium (www.alaskamarinescience.org), an annual gathering of ocean scientists from around the world to share their latest research findings in Alaska's marine ecosystems. NPRB takes the lead in organizing the annual Alaska Marine Science Symposium, co-hosted by about 20 agencies and organizations who contribute funds that support this free, three-day symposium, which is open to the public.

Communicating Ocean Science Workshop

In January 2007, NPRB staff organized the first of what would become annual one-day Communicating Ocean Science Workshop at the Alaska Marine Science Symposium to bring together scientists, media, educators and community members and showcase stellar regional and national communication, education, and outreach

programs. The workshop, designed to inspire ocean scientists to share their research with diverse audiences, was well-received by scientists and graduate students and offered again in 2008 with support from the Alaska Ocean Observing System. Planning for the 2009 workshop involved Alaska's new regional Center for Ocean Sciences Education Excellence (COSEE), a five-year, \$2.6 million program funded by that National Science Foundation's Ocean Sciences Division. NPRB's executive director serves on the COSEE Alaska Advisory Council formed in 2008, and the Senior Outreach Manager serves as director of COSEE Alaska, which networks ocean scientists, educators and the public in a partnership of research organizations, informal learning centers and formal educational institutions, and furthers NPRB's education and outreach efforts.

Inspiring Science Teachers

Engaging teachers in field science helps them bring science into the classroom, and the Board's outreach program supports teachers-at-sea through the Arctic Research Consortium of the United State's PolarTREC program, funded by the National Science Foundation, and through NOAA's Teachers-at-Sea Program. NPRB also encourages teachers in local communities to take part in field science when research vessels stop by their communities and link scientists via video conferencing technology from sea. Staff and scientists also take part in community events and festivals and give talks at schools.

Graduate Student Awards and Research Support

The Board actively supports the training and education of young marine scientists by funding major marine research at academic institutions across the nation. But more recently, the Board rolled out two other programs, special graduate student awards and presentation awards at the annual Alaska Marine Science Symposium.

The Board first discussed the graduate student award program in March 2006, when considering how to develop its integrated ecosystem research programs for the Bering Sea and Gulf of Alaska. The draft implementation plans included a provision for special fellowships to graduate students that would provide individual awards of \$25,000 per year to be used for tuition or any research-related expenses. Masters students could have them for three years and doctoral students for four. The Board was enthusiastic about such a program, but was concerned with the price tag, especially given the high demand to fund other research.

The fellowship program came under review in subsequent meetings in September 2006, and April and September 2007. Eventually, the fellowship program was separated from development of the integrated programs, and finally in September 2007, the Board adopted an Advisory Panel recommendation to fund up to five awards of \$20,000 each to be awarded to qualified master's and doctoral students. They were renamed Graduate Student Research Awards and would be available on a competitive basis to

students enrolled at accredited colleges and universities. Students are limited to one award per degree.

By April 2008, NPRB had received and reviewed 37 applications; 19 from doctoral students and 18 from Master's level students. Recommendations were developed by an ad hoc committee of Science Panel members, working with staff. These were reviewed by the Advisory Panel, and then the Board, which unanimously approved awards for the individuals shown in Table 8:

The second call for applications was released on November 14, 2008 with a deadline of February 13, 2009. Throughout the coming years, this award program will facilitate the graduate education and training of many young scientists to contribute to our knowledge of the marine ecosystems off Alaska.

The Board also rewards high-quality student presentations. The idea of judging student presentations at the annual Alaska Marine Science Symposia was approved at the September 2007 meeting. The Board made available up to \$1,000 for four small awards (\$250 each) for best student oral presentations at the January 2008 Alaska Marine Science Symposium. Staff and other scientists helped judge the competition, which included 35 students – one undergraduate student, 23 master's students and 11 doctoral students. Student oral presentation winners are shown in Table 9.

Table 8: 2008 Graduate Student Research Award Recipients

Name	Degree	Institution
Elizabeth Atwood	MS	University of Washington
Shannon O'Brien	MS	University of Washington
Mary Hunsicker	Ph.D	University of Washington
Markus Janout	Ph.D	University of Alaska Fairbanks
Rebecca Young	Ph.D	University of Alaska Fairbanks

Table 9: 2008 Alaska Marine Science Symposium Student Awards

Name	Degree	Institution
Diane Hass	MS	Moss Landing Marine Lab
Katie Palof	MS	University of Alaska Fairbanks
Steffen Oppel	Ph.D	University of Alaska Fairbanks
Cindy Tribuzio	Ph.D	University of Alaska Fairbanks

