

Polar Research Board

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LONG-TERM GOALS

The mission of the Polar Research Board (PRB) is to promote excellence in polar science and provide assistance to federal agencies and the nation on issues of importance in cold regions. The PRB strives to enhance understanding of the Arctic and Antarctic, guide U.S. research efforts so they are responsive to the needs of the nation, ensure that the voice of the polar science community is heard in government decision-making, encourage coordination and collaboration within the U.S. polar community, and assist in maintaining our international leadership role in polar science. The PRB is responsible for conducting studies, workshops, and other activities that explore important topics in natural and social sciences, technology, and resource management related to cold regions. The PRB represents U.S. interests and facilitates participation of U.S. scientists in two major international nongovernmental polar scientific organizations, the Scientific Committee on Antarctic Research (SCAR) and the International Arctic Science Committee (IASC). Our primary goal in this contract period is to continue strengthening our program – doing more visible and valuable activities, as possible with our small staff. We do not conduct research, but work to give research a broader impact on society, both here and internationally. Support from ONR helps us achieve these goals and is essential to the PRB's effectiveness.

APPROACH

The Polar Research Board (PRB) is a unit of The National Academies complex, an independent, nongovernmental organization that relies on the best minds of the scientific community to provide objective guidance on complex science and science policy issues. The PRB, following The Academies' rigorous procedures, serves as a unique resource to federal agencies, Congress, and others with interests in cold regions. The Board is a mechanism to: promote excellence in polar science, provide a voice in policy-making for the diverse scientists who work on arctic and Antarctic issues, and make these experts available to assist the government on request. The PRB is responsible for studies of issues in the natural and social sciences, technology, and resource management related to the polar regions. In addition, the PRB represents U.S. interests and facilitates participation of U.S. scientists in two international, nongovernmental scientific organizations, the Scientific Committee on Antarctic Research (SCAR) and the International Arctic Science Committee (IASC), which are dedicated to planning and coordinating research in the Antarctic and Arctic, respectively, and which involve nations with active polar science programs.

The PRB has a unique ability to focus attention on key issues, solicit expert opinions on technical questions, and propose priorities to help public policy-makers. It is an independent body available to

help agencies in the development and maintenance of strong programs of polar research. The PRB's coverage of both arctic and antarctic science makes it a unique and dynamic resource for advancing polar science and guiding national policy decisions related to both polar regions.

The PRB's mission covers a substantial geographic portion of the earth and a diverse range of disciplines, so the PRB's members are selected to bring both breadth and depth of experience. The Board's members can come from academic institutions, industry, and national laboratories and bring expertise in fields such as marine and terrestrial biology, earth sciences, meteorology, oceanography, space physics, atmospheric chemistry, engineering, and the social sciences. They are split relatively evenly between those with arctic and those with antarctic expertise, with many having experience at both poles. The PRB's current members are:

Robin Bell, Chair, Lamont-Doherty Earth Observatory of Columbia University, Palisades, New York

Richard Alley, Pennsylvania State University

Akhil Datta-Gupta, Texas A&M University, College Station

Henry Huntington, Eagle River, Alaska

Amanda Lynch, University of Colorado, Boulder

Robie Macdonald, Fisheries and Oceans Canada, British Columbia

Miles McPhee, McPhee Research Company, Naches, Washington

Carole Seyfrit, Old Dominion University, Virginia

WORK COMPLETED

The PRB conducts its core functions—providing information and assistance to the federal government on polar issues, planning and conducting oversight of PRB activities, and serving as the U.S. National Committee to SCAR and IASC—via meetings, planning sessions, workshops, conferences, telephone, mail, and email. Board meetings are essential to the PRB's effectiveness, and they are where the PRB's volunteer members interact, identify emerging issues, and interact with agency liaisons and the community. Board meetings allow the PRB to plan new studies, give oversight to ongoing activities, coordinate with other organizations, and prepare delegates for scheduled international meetings. Board meetings provide the federal sponsors and the scientific community with opportunities to give input to the Board, especially related to SCAR and IASC. The PRB selects at least one topic for substantive debate at each meeting, in addition to its regular business, and attempts to hold one planning session on a special topic at another time during the year.

As one of its responsibilities, the PRB gives oversight to ad hoc committees of experts who produce focused written reports on critical scientific issues to requesting federal agencies. These reports provide information and analysis useful to decision-makers and the polar community. In general, the conduct of studies, workshops, conferences, and other projects are funded with targeted allocations, while project planning and oversight is a core PRB function. Current PRB studies include:

- Review of the Oil Spill Recovery Institute's Arctic and Subarctic Research Program
-- Frontiers in Polar Biology
- Cumulative Environmental Impacts of Oil and Gas Development on the North Slope (joint with the Board on Environmental Studies and Toxicology)

- Science Plan for the North Pacific Research Board (joint with the Ocean Studies Board)
- Alaska Groundfish Fishery and Steller Sea Lions (assistance to the Ocean Studies Board)

Summary of accomplishments for 2002 and plans for 2003:

- Review of Gulf of Alaska Ecosystem Monitoring Program
In June 2002, the final report for this study was released.
- Abrupt Climate Change
In April 2002, the final report for this study was released.
- Cumulative Environmental Impacts of Alaskan North Slope Oil and Gas Development
Congressional request. Joint activity with BEST as lead and PRB as assisting unit. Committee held 4 more information gathering meetings (December, 2001, and February, April, and August 2002. Report expected in winter 2002.
- Frontiers in Polar Biology
Committee has held one conference call, one data gathering meeting, and one public workshop/data gathering meeting (June, July, and September). Final report is expected by January 2003.
- Review of Research Program of the Oil Spill Recovery Institute
Committee has held one conference call and three data gathering meetings (February, May, and July). Draft report has been reviewed and is in response-to-review. Final report is expected by December 31, 2002.
- Issues in Exploring Subglacial Lakes in Antarctica
PRB continues to monitor evolution of this multi-national initiative. The Board is exploring what kind of activity it might do on this issue in 2003.
- IASC
PRB delegate Patrick Webber, Michigan State University. Webber led US delegation to Arctic Science Summit Week, April 2002, in the Netherlands. Webber is a council member and recent President-elect of IASC.
- IASC (general)
PRB continues to seek ways to provide better oversight to IASC and improve exchange of information between U.S. science community and the organization. The new delegate is strong step; we also plan to regularly send one other Board member to annual IASC meeting to improve our understanding of activities. If possible, will seek to invite occasional member of IASC project groups to Board meeting to give in-depth view of selected activities. PRB granting travel awards (sponsor: NSF) to encourage participation in IASC-related meetings.
- SCAR
PRB continues to seek ways to provide better oversight and improve information exchange. SCAR working group representatives participated in PRB's Board Meeting in April 2002 and

future directions of SCAR was a big focus of the meeting. Sent PRB member, staff director, and US delegate to the SCAR XXVII meeting in July 2002 in Shanghai, China. Continue to require working group representatives to do email summaries of meetings and make direct contact with their NSF counterparts before and after meetings.

RESULTS AND IMPACT/APPLICATION

The PRB produced a range of results during the past year, each contributing to our broad mission of promoting excellence in polar science and providing assistance to federal agencies and the nation on polar issues. We continued to plan and conduct issue-specific studies and workshops (e.g., Frontiers in Polar Biology Workshop in September 2002) that explore important issues in natural and social sciences, technology, and resource management related to the polar regions. We increased our oversight of U.S. participation in the Scientific Committee on Antarctic Research (SCAR) and the International Arctic Science Committee (IASC). Our primary goal in this contract period has been to continue strengthening our program – doing more visible and valuable activities, as possible, with our small staff and tight budget. We do not conduct research, but work to give research a broader impact on society, both here and internationally. We encourage agencies to approach us with ideas for activities that would be of assistance to their programs.

TRANSITIONS

Opinions, advice and publications from the National Academies of Sciences, including the Polar Research Board, are respected by the scientific community and government decision-makers, and are frequently cited as guidance.

PUBLICATIONS

Polar Research Board, 2002. *A Century of Ecosystem Science: Long-Term Monitoring in the Gulf of Alaska*.

Polar Research Board, 2002. Report on United States Antarctic Research Activities #42, 2001-2002. Report No. 42 to SCAR.

Polar Research Board, 2001. *Enhancing NASA's Contribution to Polar Science: A Review of Polar Geophysical Data Sets*.

Polar Research Board, 2001. *The Gulf Ecosystem Monitoring Program: First Steps Toward a Long-Term Research and Monitoring Plan (Interim Report)*.

Polar Research Board, 2001. Report on United States Antarctic Research Activities #41, 2000-2001. Report No. 41 to SCAR.

Polar Research Board, 2000. Proceedings of XXVI Meeting of SCAR, July 2000, Tokyo, Japan.

Polar Research Board, 2000. Report on United States Antarctic Research Activities #40, 1999-2000. Report No. 40 to SCAR.

Polar Research Board, 2000. Handbook for U.S. Participants in the Scientific Committee on Antarctic Research

Polar Research Board, 2000. Report on United States Antarctic Research Activities #39, 1998 – 1999. Report No. 39 to SCAR.

National Research Council, Polar Research Board, 1999. *Ocean Drilling Research: An Arctic Perspective*.

National Research Council, Oceans Studies Board/Polar Research Board, 1998. *The Community Development Quota Program in Alaska and Lessons for the Western Pacific*. 215 pp.

National Research Council, Polar Research Board, 1998. *Future Directions for NSF's Arctic Natural Sciences Program*. 67 pp.