

## Context for the U.S. Antarctic Program Review

The Office of Science and Technology Policy and the National Science Foundation have initiated a major review of the U.S. Antarctic Program to ensure that it continues to support the most relevant and important science in the most effective, efficient, sustainable, technologically advanced, innovative, safe, and environmentally-friendly manner, and to set the stage for the next two decades of U.S. research, discovery, and environmental stewardship in Antarctica. The results of the study will inform policy and future budget requests.

The formal charge to the Blue Ribbon Panel contains the primary elements of interest to the Administration, recognizing that the Panel may well also consider and make recommendations on other appropriate topics. In addition to the formal charge, the Administration would like to share a number of important questions and considerations that should be helpful to the Panel during its deliberations:

- agility: options for increasing the ability of logistics and infrastructure to respond to evolving and changing challenges in the Southern Ocean and on the continent as new scientific drivers evolve;
- complexity: what are the implications for logistics and infrastructure associated with the increasing sophistication of forefront research;
- efficiency: options for maximizing the efficiency and cost-effectiveness of research stations, ships, and short-term and multi-year field camps;
- research and development: concepts and investments that could improve USAP efficiency and effectiveness and reduce infrastructure and logistics life-cycle costs;
- research station resupply: options for reducing annual resupply requirements and for meeting resupply requirements more reliably and efficiently;
- sustainability: options and tradeoffs for moving toward more sustainable USAP science and operations; and using renewables, alternative energies, and other means to reduce the logistics burden and the carbon footprint of fossil fuels;
- technology: options for increasing utilization of remote sensing, autonomy, and information technology to reduce environmental footprint and increase scientific reach, including a sustained technology development effort;
- communications: options for meeting forecasted information, computational, and communication infrastructure needs and challenges;
- data legacy: options for assuring that important data and specimens from scientific investigations are accessible, curated, and preserved for long-term use;

- international cooperation: the pros and cons of cost- and resource-sharing with international partners in meeting U.S. requirements; and
- agency collaboration: ways in which mission agency capabilities can be brought to bear to enhance Program capabilities and performance.

The Administration would also appreciate a review that examines potential management, programmatic, logistics, and infrastructure options relative to the following evaluation parameters:

- environment, safety, and health standards;
- interagency logistical support;
- 20-year life-cycle costs (including operations costs);
- programmatic and technical risks;
- potential to spur innovation, encourage competition, and lower the cost of Antarctic operations;
- potentially expanded opportunities for science;
- potential for enhanced international cooperation;
- potential for inspiring the nation, and motivating young people to pursue careers in science, technology, engineering and mathematics subjects; and,
- contractual implications.

The Panel is encouraged to fully examine more than one approach for meeting the program's future needs. Where more than one option exists, it would be helpful if the Panel were to examine the costs and benefits of the several alternative approaches. It would be helpful if the options considered were framed in terms whether different logistics or infrastructure approaches would achieve more or less research since in practice the program seeks to balance research and operations funding within a given top line funding envelop.

The Panel is encouraged to consider existing and evolving collaborations, partnerships, and partnership needs within the NSF, across the Federal agencies, and with the international community of researchers and operators. The panel may also wish to recommend means by which the private sector might further contribute to the advancement of the program goals through collaborative arrangements.

The Panel is encouraged to consult with the Department of State concerning foreign policy objectives and the way they intersect with the Program's support for research, education, and environmental protection, given the role of the Department in coordinating U.S. policy relating to the Antarctic Treaty and related instruments.