



Programmatic Terms and Conditions (PTCs) for the Ice Drilling Program Office (IDPO) (NSF 13-503) Cooperative Agreement(s)

NSF 13-503: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf13503

1. Key Personnel

Except for the Principal Investigator(s) (PIs) or Co-PIs identified in this award, requests to make any changes to personnel, organizations, and/or partnerships specifically named in the proposal, that have been approved as part of this award, shall be submitted in writing to the cognizant NSF Program Official for approval prior to any changes taking effect. Requests for prior approval of changes to the PI(s) must be submitted through FastLane for review by the cognizant NSF Program Official and approval by an NSF Grants Officer.

2. Project Description

U.S. scientific productivity in ice core science, including both knowledge generation and creation of the next generation of scientists, depends upon a mechanism for ensuring continuity and international cooperation in ice coring efforts, along with availability of appropriate drills, drilling expertise, and innovations in drilling technology. The proposed Ice Drilling Program Office (IDPO) relies on community input for current and future ice core drilling planning to be coordinated nationally and internationally and conveyed to the public. The IDPO will work on behalf of the U.S. ice science and drilling communities to facilitate planning efforts and to be proactive in the planning and coordination that is necessary to form and execute continuously evolving ice drilling and science programs, and IDPO will oversee and manage a subaward to the Ice Drilling Design and Operations group (IDDO). The IDDO will work under the direction of IDPO to design, construct, test, and operate ice drills that will enable scientists to obtain ice from the polar ice sheets and provide access to regions beneath ice sheets. The science enabled by this activity will foster inclusion of a diverse range of students and other personnel who will go on to careers in science, engineering, and technology who will contribute in various ways to discoveries with societal relevance.

3. Project Governance

The IDPO is a Cooperative Agreement between NSF and Dartmouth, with Dartmouth carrying primary responsibility for IDPO-IDDO actions. Dartmouth will make a subaward to the University of New Hampshire for IDPO-UNH activities for communication efforts including maintenance of the Icedrill.org website and its associated databases, the Ice Bits newsletter and the <http://icedrill.org> News list serve, liaison efforts between IDPO and logistics organizations and funded field projects, and communicating progress on drill development with the research community. Dartmouth will make a subaward to the

Colorado School of Mines for IDPO-CSM activities to serve as liaison with commercial drilling and mining companies. Dartmouth and also will make a subaward to the University of Wisconsin for IDDO activities for ice drilling services, drill maintenance and upgrade, and drilling technology development in support of NSF-funded science projects. IDDO will consist of a core staff of full time technical professionals who will be dedicated to ice coring and drilling development, maintenance and operations. The core staff will consist of engineers who will have had experience in the design and operation of ice coring and drilling equipment. Leadership of IDDO will be provided by a Principal Investigator who serves as the Director of IDDO, carrying responsibility for internal IDDO actions.

4. Long Range Planning

The awardee must provide NSF with sound long-range planning for ice-drill development and use. To this end, two reports will be prepared and updated yearly. First, working with the Science Advisory Board (SAB), the IDPO will use information from across the research community to develop the Long Range Science Plan that will address long-term ice-drill and borehole instrumentation development to support the U.S. research community. This document will be a long-range plan that will both identify major program goals and new thrusts and the technologies required to meet them, with special attention to the next 5 years. IDPO will liaise with the science research community, with developers of ice-core instrumentation and downhole geophysical logging tools, and with relevant industry partners to articulate the plan. The IDPO, in collaboration with the IDDO, will also prepare, and annually revise, a comprehensive Long Range Drilling Technology Plan that will include drill allocation to specific projects to the degree that these commitments are known and identify near-term technological needs and timelines for actions. To develop this document, the IDPO and IDDO will liaise with the research community, ice drill experts, and NSF Program Officers. The Long Range Science Plan and the Long Range Drilling Technology Plan are due on June 30 of each year.

a. The IDPO Long Range Science Plan will include:

- i. Identification of long-term program goals and the technologies or capabilities required to meet them based on the best-available scientific information and emerging topics in ice science, paleoclimatology and other relevant fields of scientific endeavor, along with target timelines for the major endeavors to the extent to which they are known.
- ii. Any expected requirements of the scientific community for support in the planning and execution of large-scale cooperative research efforts, and any new facilities expected to be required for the conduct of research.
- iii. An articulation of strategies for allocation, development or acquisition of required technologies and capabilities.
- iv. A discussion of issues or factors which might significantly affect the use or development of these technologies and capabilities over the long-range planning period (including the potential for developing international partnerships).
- v. Strategies for sustaining these capabilities, maintaining program relevance, and ensuring a robust ongoing and continuously evolving program.

b. The IDPO/IDDO Long Range Drilling Technology Plan will include:

- i. A summary of five-year program goals and emphases, including technological requirements with timelines for IDPO/IDDO actions over the next five years. The NSF will provide target budget levels for planning purposes to the IDPO and IDDO to help guide development of program goals.
- ii. A discussion of issues or factors, including target budget levels provided by NSF, which might significantly affect the conduct of the work proposed during the planning period.
- iii. A discussion of any management, contractual, financial, environmental or technical issues that require a long lead-time for study, review, evaluation, approval, and implementation.

5. Ongoing Project Oversight

The Awardee will ensure full commitment and cooperation amount the governing structure components and all project staff during all ongoing NSF project management and oversight activities. The Awardee will ensure availability of all key institutional partners during any desk or on-site review as well as timely access to all project documentation.

The Awardee will ensure efficient and effective performance of all project responsibilities by the governing components throughout the award period.