Arctic Research Opportunities   Arctic Natural Sciences; Arctic Social Sciences; Arctic System Science; and Arctic Observing Networks

Program Solicitation
NSF 08-597

Replaces Document(s):
NSF 06-603

National Science Foundation

Office of Polar Programs
   Division of Arctic Sciences

Full Proposal Target Date(s):

November 18, 2008

October 15, 2009

October 15, Annually Thereafter

REVISION NOTES

Important revisions to the program descriptions, proposal preparation instructions and review criteria are included in this solicitation and should be read carefully by all proposers.

Changes have been made to encourage proposers to carefully consider the full cost of field work in developing their plans. Field experiments must be both effective and efficient in order to gain NSF support. A process has been established for assisting proposers in developing a complete cost estimate for complicated projects. If NSF determines that the cost estimate submitted with the proposal requires more detail, the proposer will be contacted.

A significant change to this solicitation is that we are not soliciting proposals for the Arctic Research Support and Logistics Program or the Arctic Research and Education Program, explicitly. Individuals who have creative ideas they would like to propose to the these programs should contact the Program Officers identified with these programs on the OPP Arctic Sciences Division website, http://www.nsf.gov/staff/sub_div.jsp?org=ARC&orgId=284&from_org=ARC

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Arctic Research Opportunities
Arctic Natural Sciences; Arctic Social Sciences; Arctic System Science; and Arctic Observing Networks

Synopsis of Program:

The National Science Foundation (NSF) invites investigators at U.S. organizations to submit proposals to conduct research about the Arctic. Arctic research includes field and modeling studies and data analysis. Arctic research is supported at NSF by the Office of Polar Programs (OPP), Arctic Sciences Division (http://www.nsf.gov/div/index.jsp?div=ARC), in the Office of the Director, as well as by a number of other programs within the Foundation.

The goal of the NSF Division of Arctic Sciences is to gain a better understanding of the Arctic's physical, biological, geological, chemical, social and cultural processes, and the interactions of ocean, land, atmosphere, biological, and human systems in the Arctic. The Division of Arctic Sciences and other NSF programs support projects that contribute to the development of the next generation of researchers and scientific literacy for all ages through education, outreach, and broadening participation in science, technology, engineering, and mathematics. Program representatives from OPP and other NSF programs that support arctic research coordinate across NSF, including joint review and funding of arctic proposals and mutual support of special projects with high logistical costs.

The Arctic Research Opportunities solicitation provides investigators with information about available programs and priorities to determine the program best suited to their proposed work. The Proposal Preparation section (Section V.A.) has specific instructions for proposers conducting field work, including information about requesting logistics support or ship time, working with arctic communities and complying with environmental policies that should be adhered to by all proposers. Proposals should be written and planned in accordance with NSF's Grant Proposal Guide (http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg), OPP's Guidelines and Award Conditions for Scientific Data (OPP 9-91 available on the OPP web site http://www.nsf.gov/dir/index.jsp?org=OPP) and the Principles for Conduct of Research in the Arctic (http://www.nsf.gov/od/opp/arctic/conduct.jsp).

Cognizant Program Officer(s):

- Renee D. Crain, Arctic Research and Education Assistant Program Director, 755 S, telephone: (703) 292-4482, fax: (703) 292-9082, email: rcrain@nsf.gov

- Patrick Haggerty, Arctic Research Support and Logistics Program Director, 755 S, telephone: (703) 292-8577, fax: (703) 292-9082, email: phaggert@nsf.gov

- Martin Jeffries, 740 S, telephone: (703) 292-8029, email: mjeffrie@nsf.gov

- Anna Kerttula de Echave, Arctic Social Sciences Program Director, 740 S, telephone: (703) 292-7432, fax: (703)292-9082, email: akerttul@nsf.gov

- Brendan P. Kelly, Arctic Natural Sciences Program Manager, 755, telephone: (703) 292-7434, email: bkelly@nsf.gov

- Neil R. Swanberg, Arctic System Science Program Director, 755 S, telephone: (703) 292-8029, email: nswanber@nsf.gov

- William J. Wiseman, Arctic Natural Sciences Program Director, 740 S, telephone: (703) 292-4750, fax: (703) 292-9082, email: wwiseman@nsf.gov

Applicable Catalog of Federal Domestic Assistance (CFDA) Number(s):

- 47.078 --- Office of Polar Programs

Award Information

Anticipated Type of Award: Standard Grant or Continuing Grant or Cooperative Agreement

Estimated Number of Awards: 40   per year, pending availability of funds.

Anticipated Funding Amount: $16,000,000 per year approximately, pending availability of funds.

Eligibility Information

Organization Limit:

Proposals may only be submitted by the following:

- U.S. Organization

PI Limit:

None Specified

Limit on Number of Proposals per Organization:

None Specified

Limit on Number of Proposals per PI:

None Specified

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- **Letters of Intent:** Not Applicable

- **Preliminary Proposal Submission:** Not Applicable

- **Full Proposals:**

    - Full Proposals submitted via FastLane: NSF Proposal and Award Policies and Procedures Guide, Part I: Grant Proposal Guide (GPG) Guidelines apply. The complete text of the GPG is available electronically on the NSF website at: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg.

    - Full Proposals submitted via Grants.gov: NSF Grants.gov Application Guide: A Guide for the Preparation and Submission of NSF Applications via Grants.gov Guidelines apply (Note: The NSF Grants.gov Application Guide is available on the Grants.gov website and on the NSF website at: http://www.nsf.gov/bfa/dias/policy/docs/grantsgovguide.pdf)

B. Budgetary Information

- **Cost Sharing Requirements:** Cost Sharing is not required under this solicitation.

- **Indirect Cost (F&A) Limitations:** Not Applicable

- **Other Budgetary Limitations:** Not Applicable

C. Due Dates

- **Full Proposal Target Date(s):**

    November 18, 2008

    October 15, 2009

    October 15, Annually Thereafter

Proposal Review Information Criteria

Merit Review Criteria: National Science Board approved criteria. Additional merit review considerations apply. Please see the full text of this solicitation for further information.

Award Administration Information

Award Conditions: Additional award conditions apply. Please see the full text of this solicitation for further information.

Reporting Requirements: Additional reporting requirements apply. Please see the full text of this solicitation for further information.

TABLE OF CONTENTS

I. INTRODUCTION

The Division of Arctic Sciences in the Office of Polar Programs (OPP) invests in scientific research about the arctic region and related research and operational support. Science programs are suitable for disciplinary, multidisciplinary and broad, interdisciplinary investigations directed toward both the Arctic as a region of special scientific interest and a region important to the global system. Models indicate that the Arctic is among the regions most sensitive to environmental change. Climate records and human settlement spanning thousands of years, as well as vast landscapes and partially ice-covered oceans, provide a unique basis for integrated research on global systems and human adaptation.

OPP disciplinary interests appropriate to the Arctic Natural Sciences program encompass the atmospheric, biological, cryospheric, earth, and ocean sciences. A broad spectrum of social sciences research is funded through the Arctic Social Sciences program. The Arctic System Science program provides the unique opportunity for interdisciplinary investigations of the Arctic as a system. OPP also encourages research relevant to both polar regions, especially glaciology, permafrost, sea ice, oceanography, and ecology. The Arctic Observing Network program supports the design and implementation of a broad network of long-term observations of the Arctic useful to a wide segment of the arctic community. The integration of research with education is consistent with NSF s merit review criteria and is encouraged in research proposals. Proposals may seek funding for pilot projects linking research with education through the Arctic Research and Education program. Arctic research projects that partner with schools, students (K-12 and higher), and communities in the North and that improve the public s

understanding of science and basic research are strongly encouraged.

The Foundation is one of 12 Federal agencies that sponsor or conduct arctic science, engineering, and related activities. As mandated by the Arctic Research and Policy Act of 1984, Federal interagency research planning is coordinated through the Interagency Arctic Research Policy Committee (IARPC), which is chaired by NSF.

The United States Arctic Research and Policy Act of 1984 defines the Arctic as all areas north of the Arctic Circle and all United States territory north and west of the boundary formed by the Porcupine, Yukon, and Kuskokwim Rivers; all contiguous seas including the Arctic Ocean and the Beaufort, Bering, and Chukchi seas; and the Aleutian chain. Field projects falling outside these boundaries but directly related to arctic science and engineering conditions, or issues, such as laboratory and theoretical studies, may also be appropriate; OPP recommends contacting the program director to verify the appropriateness of the proposed study before preparing a proposal.

Because the Arctic is the homeland of numerous Native peoples, special attention must be given to all aspects of research and education that may potentially impact their lives. An interagency statement of Principles for the Conduct of Research in the Arctic has been developed. All arctic research grantees are expected to abide by these principles, which can be found at http://www.nsf.gov/od/opp/arctic/conduct.jsp. Researchers may find helpful information in the Guidelines for Improved Cooperation between Arctic Researchers and Northern Communities athttp://www.arcus.org/guidelines.

The Study of Environmental ARctic CHange (SEARCH) is an interagency effort to study changes occurring in the arctic system (http://www.arcus.org/SEARCH/index.php). NSF is among the agencies contributing to this effort, which is also gaining support as a major international effort as the International Study of Arctic Change (ISAC). SEARCH themes supported by the Arctic Sciences Division will be guided by the research community through avenues such as the SEARCH Science Steering Committee, the SEARCH Open Science Meeting and the SEARCH Implementation Workshop held in May 2005. The Division of Arctic Sciences has funded components of SEARCH research through special announcements of opportunity and expects to continue supporting the development of SEARCH through special announcements and through this program solicitation, depending on the availability of funds.

Projects requesting support for post-doctoral associates must include a detailed mentoring plan for the associate.

II. PROGRAM DESCRIPTION

This Division provides detailed information and descriptions of the following programs, emphasis areas and special research opportunities:

  A. **Arctic Natural Sciences Program**
  B. **Arctic Social Sciences Program**
  C. **Arctic System Science Program**
  D. **Arctic Observing Network**

The descriptions below should help guide investigators in determining the appropriate program for their proposals. In addition, please consult the full text of this announcement for further information on proposal preparation, field work, data management, review criteria, award conditions and other pertinent information.

A. **Arctic Natural Sciences Program**

The Arctic Natural Sciences (ANS) Program provides core support for disciplinary and interdisciplinary research on arctic processes and coordinates its support of arctic research with the Directorates for Geosciences; Mathematical and Physical Sciences; Social, Behavioral, and Economic Sciences; and Biological Sciences.

Areas of special interest include marine and terrestrial ecosystems, arctic atmospheric and oceanic dynamics climatology, arctic geological and glaciological processes, and their connectivity to lower latitudes. The Program particularly encourages proposals that treat uniquely arctic processes and that provide hypothesis testing required to produce the understanding needed to develop predictive tools based on first principles. Proposals to perform monitoring per se are discouraged. Similarly, proposals that treat generic processes that could be adequately studied outside the Arctic are more appropriate to other programs within the Foundation.

ANS supports projects that emphasize understanding the adaptation of organisms to the unique aspects of the arctic environment. Terrestrial and marine geology and geophysics projects of greatest interest are those that will improve our ability to interpret the geologic record of environmental change in the Arctic, particularly during the Quaternary. Understanding the processes responsible for the evolution of permafrost and consequences of changing permafrost remains a priority, as well. Projects that focus on the history and dynamics of all naturally occurring forms of arctic snow and ice, including seasonal snow, glaciers, and the Greenland ice sheet, are encouraged. The Program supports ocean science projects that advance knowledge of the processes of the Arctic Ocean and adjacent seas and their interactions with their boundaries. The development of sensors necessary to observe these processes is also supported by ANS.

B. **Arctic Social Sciences Program**

The OPP Arctic Social Sciences Program (ASSP) encompasses all social and behavioral sciences supported by NSF. These include, but are not limited to anthropology, archaeology, economics, geography, linguistics, political science, psychology, science and technology studies, sociology, traditional knowledge and related subjects.

Although proposals in any of the social sciences mentioned above are welcome, areas of particular interest include culture and environment, resources and economic change, development of social and political institutions, ethnic (cultural) and regional identities, and knowledge systems. These five research areas are identified and explained in the report, *Arctic Social Sciences: Opportunities in Arctic Research* (Arctic Research Consortium of the United States, June 1999, Fairbanks, Alaska; available for download at http://www.arcus. org/ASSP/1999_report.html).

The Arctic Social Sciences Program especially encourages projects that are circumpolar and/or comparative; involve collaborations between researchers and those living in the Arctic; or form partnerships among disciplines, regions, researchers, communities, and/or students (K-12, undergraduate, or graduate).

Dissertation research proposals are accepted by the Arctic Social Sciences program. Please consult the "Dissertation Panel Advice to Students" guidelines in the Division of Behavioral and Cognitive Sciences (DBCS; http://www.nsf.gov/sbe/bcs/anthro/cultdadv.jsp). These guidelines are to provide the applicant with a basic outline for their proposals. Applicants should apply to this OPP solicitation and talk to the ASSP program director about funding limits, which vary from those in DBCS.

Projects involving research with human subjects must ensure that subjects are protected from research risks in conformance with the relevant federal policy known as the Common Rule (Federal Policy for the Protection of Human Subjects, 45 CFR 690). Advice is available at http://www.nsf.gov/bfa/dias/policy/hsfaqs.jsp#top.

Researchers proposing work that may affect cultural or historic properties, or whose work involves tribal lands, must cooperate with the agency in complying with the consultation requirements of section 106 of the National Historic Preservation Act. Researchers are encouraged to contact OPP for more information about cultural or historic impact considerations of their proposed field work. For additional information on cultural or historic preservation issues, see the Advisory Council on Historic Preservation's web site at http:// www.achp.gov/work106.html.

The Arctic Social Sciences Program considers joint review and funding within OPP, with other NSF programs, other agencies and international efforts when appropriate. Researchers interested in linguistics are encouraged to examine the announcement of opportunity on Documenting Endangered Languages (http://www.nsf.gov/funding/ pgm_summ.jsp?pims_id=12816) released to support projects to develop and advance knowledge concerning endangered languages.

C. **Arctic System Science (ARCSS) Program**

Proposals to ARCSS must strive to advance our knowledge of the arctic system as a whole. Most successful ARCSS proposals focus on the relationships amongst the components of the arctic system rather than on the pieces themselves. Detailed studies at the subcomponent level are probably best submitted to other, more disciplinary programs.

The research supported under ARCSS is mostly interdisciplinary, although that does not mean that every project funded must encompass several disciplines. The program supports most of its research through special targeted solicitations, but ARCSS does support a small number of proposals received through this general program solicitation. Generally proposals to this solicitation should put forth new ideas for field, laboratory, or modeling efforts that would not fit well under more organized banners and that are smaller in scope than one might find in a specialized solicitation. ARCSS also supports efforts that synthesize our knowledge of how the arctic system works. With the exception of proposals that were specifically encouraged by NSF to resubmit as filling an essential gap in a particular ARCSS effort, this program solicitation should not be viewed as a mechanism to re-submit proposals that were declined in a special solicitation.

The current goal of the program is to answer the following question:

- What do changes in the arctic system imply for the future?

Defining an ARCSS Proposal

Both ANS and ARCSS strive to understand the arctic environment, and there is not a sharp boundary between the kinds of research the two programs support. This is by design, as such a boundary could lead to an undesirable gap in the kind of research the Arctic Division would support, however, it can make it difficult to determine whether a given proposal belongs in the ANS or ARCSS program. A guideline is that if a proposal is focused mostly on some piece of the arctic system, then it is probably not a good fit to ARCSS, unless the understanding to be achieved about that piece is demonstrably essential to system-level understanding.

A proposal suitable for competition in the ARCSS program will normally be expected to:

- have a direct connection to and be essential to success of the ARCSS effort,
- determine or investigate the important relations amongst components of the arctic system,
- help explain the range of states for the arctic system, or
- contribute significantly to our understanding of the structure and function of the arctic system through synthesis and further study.

Usually the Division of Arctic Sciences strives to make this as simple for the investigator as possible by reviewing proposals for ANS and ARCSS jointly and asking panelists to consider program fit as a merit criterion, with the intent that if a proposal is submitted to ARCSS but does not fit well it will be considered in ANS and vice versa.

To be successful, a proposal to the ARCSS program should have several or all of the above characteristics. Moreover ARCSS proposals MUST define explicitly and in detail how they contribute to broad system understanding. It is not sufficient to state that one meets ARCSS goals, one must demonstrate how one does so. Failure to do so will likely result in the return of a proposal without review. The degree to which a proposal contributes to system understanding will be one of the key factors in judging its intellectual merit.

D. **Arctic Observing Network**

Proposals contributing to the Arctic Observing Network will be accepted in response to this solicitation beginning with the 15 October 2009 target date.

The Arctic Observing Network (AON) is NSF s contribution to a pan-Arctic, science-driven,

observing system that will enable the SEARCH program. NSF will listen closely to the advice provided by the community through the SEARCH Science Steering Committee and the SEARCH Observing, Understanding, and Responding panels when developing priorities for its investments in AON. AON will provide data necessary for understanding and responding to the ongoing changes in the arctic system. The AON program focuses on observations, the deployment and operation of observing systems, and data and information management. It is anticipated that AON ultimately will provide long-term observations of the Arctic useful to a broad segment of the arctic community. Proposals for the deployment of parts of such an observing system are solicited by this program, as well as proposals to link these systems into a smoothly functioning network. Proposals involving community-based observing and local and traditional knowledge are encouraged. Proposals treating data and information management and policy are also appropriate to AON. It is expected that the data recovered from AON will be made freely and openly available to the research community quickly. The continued support of such systems will be justified, at least in part, by the value of these data to the broader science community.

Proposals for the development of sensors and measurement systems critical to AON are also supported by the program.

Proposals for data analysis, data synthesis, and modeling that lead to understanding will not be considered by the program.

ADDITIONAL OPPORTUNITIES

Other NSF Funding Opportunities

See Section IX on Other Programs of Interest and consult the NSF online program guide to browse for funding opportunities (http://www.nsf.gov/funding/browse_all_funding.jsp).

III. AWARD INFORMATION

Pending availability of funds, $16,000,000 may be available for proposals to this solicitation. This does not include logistics support that may be provided through the Arctic Research Support and Logistics program. NSF estimates 40 awards per year as standard or continuing grants, or cooperative agreements. The number of awards and average award size and duration are subject to the availability of funds.

IV. ELIGIBILITY INFORMATION

Organization Limit:

Proposals may only be submitted by the following:

- U.S. Organizations

PI Limit:

None Specified

Limit on Number of Proposals per Organization:

None Specified

Limit on Number of Proposals per PI:

None Specified

Additional Eligibility Info:

Only U.S. organizations are eligible to submit proposals under this solicitation. There is no limit on PI eligibility, and there is no limit on the number of proposals that may be submitted.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Full Proposal Preparation Instructions: Proposers may opt to submit proposals in response to this Program Solicitation via Grants.gov or via the NSF FastLane system.

- Full proposals submitted via FastLane: Proposals submitted in response to this program solicitation should be prepared and submitted in accordance with the general guidelines contained in the NSF Grant Proposal Guide (GPG). The complete text of the GPG is available electronically on the NSF website at: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg. Paper copies of the GPG may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from pubs@nsf.gov. Proposers are reminded to identify this program solicitation number in the program solicitation block on the NSF Cover Sheet For Proposal to the National Science Foundation. Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.

- Full proposals submitted via Grants.gov: Proposals submitted in response to this program solicitation via Grants.gov should be prepared and submitted in accordance with the NSF Grants.gov Application Guide: A Guide for the Preparation and Submission of NSF Applications via Grants.gov. The complete text of the NSF Grants.gov Application Guide is available on the Grants.gov website and on the NSF website at: (http://www.nsf.gov/bfa/dias/policy/docs/grantsgovguide.pdf). To obtain copies of the Application Guide and Application Forms Package, click on the Apply tab on the Grants.gov site, then click on the Apply Step 1: Download a Grant Application Package and Application Instructions link and enter the funding opportunity number, (the program solicitation number without the NSF prefix) and press the Download Package button. Paper copies of the Grants.gov Application Guide also may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from pubs@nsf.gov.

In determining which method to utilize in the electronic preparation and submission of the proposal, please note the following:

Collaborative Proposals. All collaborative proposals submitted as separate submissions from multiple organizations must be submitted via the NSF FastLane system. Chapter II, Section D.3 of the Grant Proposal Guide provides additional information on collaborative proposals.

Proposals may be returned without review for failing to comply with the Grant Proposal Guide, this solicitation and the instructions that supplement the GPG (if submitted via FastLane) or the NSF Grants.gov Application Guide (if submitted via Grants.gov).

Please note:

- Proposals that are re-submissions must be substantially changed from the original,
-
  Proposals must comply with specifications for minimum font size and maximum lines and characters per centimeter,
-
  Biosketches must follow formatting rules, in particular, do not include more than 10 publications,
-
  For efficiency of processing, please arrange entries alphabetically by last name in lists such as collaborators, students, advisors, other affiliations, and suggested reviewers.

Principles for the Conduct of Research in the Arctic

Researchers should conform to the *Principles for the Conduct of Research in the Arctic*, prepared by the Social Science Task Force of the U.S. Interagency Arctic Research Policy Committee (IARPC) and approved by IARPC in 1990. These principles apply to all researchers and are listed at http://www.nsf.gov/od/opp/arctic/conduct.jsp. Proposers may also find the Guidelines for Improved Cooperation between Northern Communities and Arctic Researchers helpful (http://www.arcus.org/

Proposals Involving Human Subjects

The NSF Grant Proposal Guide (http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg) provides procedural information for projects with human subjects in the section Projects Involving Human Subjects. Investigators must ensure that human subjects are protected from research risks in conformance with the relevant federal policy known as the Common Rule (*Federal Policy for the Protection of Human Subjects*, 45 CFR 690). Additional information is available at http://www.nsf.gov/bfa/dias/policy/guidance.jsp. Letters of permission or approval, such as those from Native organizations or communities in which the work will take place, should be included in the Supplementary Documents section of proposal.

Proposals Involving Arctic Field Work

The Arctic Research Support and Logistics (RSL) program was created to enhance access and safety in the Arctic and interactions with arctic communities. Proposers should understand that rising fuel and other costs may well render some field-based research proposals unsupportable. A process has been established for assisting proposers in developing a complete cost estimate for complicated projects. If NSF determines that the cost estimate submitted with the proposal requires more detail, the proposer will be contacted. Investigators are encouraged to propose effective and efficient use of logistics resources to reach research goals and cooperate with communities near field research sites. Support from the RSL program is available to projects funded by the Arctic Sciences Division, pending availability of funds. The program endeavors to leverage support to projects funded by other divisions at NSF or other federal agencies also pending availability of funds. More information is available on the RSL program web site (http://www.nsf.gov/od/opp/arctic/res_log_sup.jsp).

The Foundation and researchers to whom it makes awards are obliged to conform to the various acts governing activities affecting the environment and cultural or historic properties. Researchers should be aware of these acts and adhere to their requirements. Further information concerning environmental issues is provided below under the heading 'Environmental Policy Considerations of Fieldwork'.

Requesting Support

The Arctic Sciences Division does not require the use of logistics forms for arctic fieldwork. However, for proper review of the proposed work and to initiate logistics planning, the anticipated fieldwork should be described in the proposal in sufficient detail to enable reviewers to appreciate the scope of logistics requirements. Proposals are encouraged to include a section in the Project Description outlining the planned fieldwork, schedule, locations, required services and platforms, maps and related information.

If a third-party is arranging logistics (a logistics contractor or provider receiving funds directly from NSF), logistics costs should not be included in the proposal budget request. Instead, a description of the support required and cost if known should be included in the budget justification to allow the logistics provider and reviewers to assess the scope, cost and feasibility and initiate planning. Contact all third-party logistics providers prior to proposal submission to let them know what you are planning. If time allows, these providers should provide a letter to include in the supplementary documents section that describes the scope of logistics support required and estimates the cost.

Timing of Requests

Proposals requesting support for field work from the Arctic Division science or logistics programs should be submitted a year or more in advance of the field season to allow for logistics planning and budgeting. For example, proposals submitted in November 2008 should not plan to go to the field in summer of 2009, but rather in 2010. Third-party logistics providers may be able to accommodate shorter planning times but should be consulted prior to proposal submission to verify feasibility and availability of funds to support the request.

Arctic Community Interactions

The RSL program was created, in part, to enhance access, safety and interactions with arctic communities. Accordingly investigators are encouraged to propose effective and efficient use of logistics resources to achieve research goals and to cooperate with communities near field research sites. The RSL program may be able to provide travel support for researchers to visit communities for outreach before, during, and after their projects. In addition, the RSL program may be able to support travel and per diem for community participants from local communities who wish to act as a liaison between the research project and their community by participating in the research project. These visits are anticipated to be limited to a few days and do not include additional funds for salaries or stipends. Please contact the RSL program managers for information about these opportunities.

Logistics Providers and Field Stations

The RSL program works with several organizations to meet the needs of arctic field research. NSF s prime arctic logistics contractor is CH2M Hill Polar Services (CPS; http://www.polar.ch2m.com), formerly known as VECO Polar Resources. CPS can provide advanced planning for projects, regardless of whether they ultimately provide the logistics services. CPS supports projects throughout the Arctic, including Greenland, Russia, Canada, Svalbard, Alaska and the Arctic Ocean. They are helpful in proposal preparation and can provide logistics scope letters to establish the feasibility and estimated cost of proposed logistics. They do not charge proposers for this service. Investigators are encouraged to contact CPS to develop a preliminary plan and to provide project support if appropriate. The RSL program will work with CPS, the investigator and funding program manager to determine if requests are supportable.

Barrow, Alaska
Researchers proposing to work near Barrow, Alaska are required to contact the Barrow Arctic Science Consortium (BASC) prior to submission of a proposal. Please use the online logistics help form available on their website (http://www.sfos.uaf.edu/basc/). BASC funding is through a cooperative agreement with the RSL program. Support requested from BASC must be approved by NSF through the cooperative agreement mechanism, thus BASC cannot make commitments, but can scope out the type and cost of support requested and provide it if approved by the RSL program or paid for directly by the user.

Greenland
Principal investigators contemplating work in Greenland should obtain the Danish Polar Center application form for research in Greenland. Application forms are available at http://www.dpc.dk/sw6492.aspl. A copy of the application should be included in the Supplementary Documents section of the proposal.

Toolik Field Station, Alaska
Researchers proposing to work at Toolik Field Station are required to contact the station prior to submission of a proposal to ensure the project can be accommodated, see (http://www.uaf.edu/toolik/). Please use their online reservations forms to request use of the facilities. Toolik is funded by a cooperative agreement between the Institute of Arctic Biology at the University of Alaska Fairbanks and the RSL program. The RSL program will work with the investigator, funding program manager, Toolik and CH2M Hill to determine if requests can be supported.

UNOLS, USCG, and other Vessel Requests

Researchers intending to use a vessel from the University-National Oceanographic Laboratory System (UNOLS) or the U.S. Coast Guard (USCG) vessels *Healy* or *Polar Sea* should follow the UNOLS procedure (http://www.unols.org). If requesting use of a non-UNOLS or USCG vessel, please include a letter from the vessel operator with an estimate of the costs, supportability, and approximate schedule of the work in the proposal supplementary documents. The RSL program will work with the vessel operator and the investigator to determine if the request is supportable.

Additional Logistics Services

Drilling Services

For ice core and other drilling services, please select your preferred provider and request an estimate to include in your proposal. Ice Core Drilling Services (ICDS) has provided drilling support to arctic projects. For drilling services through ICDS or any other provider, please contact them during the proposal stage for an estimate of costs and include this estimate and a letter from ICDS in the supplementary documents of your proposal (http://www.ssec.wisc.edu/icds/). The RSL program will work with the investigator, funding program manger, and their selected drilling provider to determine if the request can be supported.

GPS and Ground-based LiDAR

UNAVCO (http://www.unavco.org) is a non-profit organization funded by a cooperative agreement with NSF s Earth Sciences Division to support and promote Earth science by advancing high-precision geodetic and strain techniques such as the Global Positioning System (GPS). UNAVCO provides state-of-the-art GPS equipment and field engineering support for projects, by installing, operating and maintaining continuous GPS networks globally, undertaking new technology development and evaluating commercially available products for research applications, and by archiving GPS data and data products for future applications. UNAVCO maintains Differential GPS stations, has developed a ground-based LiDAR capability and provides other services to arctic researchers. Investigators should contact Bjorn Johns at UNAVCO (bjorn@unavco.org or 303-381-7470) for a proposal letter and budget estimate to include in the supplementary documents section of the proposal. NSF will work with the investigator and UNAVCO to determine if the request can be supported.

National Centerfor Airborne Laser Mapping (NCALM)

NCALM is supported through a cooperative agreement with NSF s Earth Sciences Division to provide laser mapping services to projects. If you need such services, please contact NCALM about your project needs and include a letter with an estimate

of costs from NCALM in the supplementary documents of your proposal (http://www.ncalm.org/). NSF will work with the investigator and NCALM to determine if the request can be supported.

Environmental Policy Considerations of Fieldwork

Federal agencies must comply with the National Environmental Policy Act (NEPA). Most NSF awards support individual scientific research projects and are not considered major Federal actions significantly affecting the quality of the human environment . Projects involving construction, drilling or major disturbance to the local environment may require an assessment of environmental impacts.

In addition to NEPA, all federal agencies are regulated under acts such as the Endangered Species Act, the Marine Mammal Protection Act, and the National Historic Preservation Act. Researchers proposing work that may affect cultural or historic properties, or whose work involves tribal lands must cooperate with the agency in complying with the consultation requirements of section 106 of the National Historic Preservation Act. For additional information on cultural or historic preservation issues, see the Advisory Council on Historic Preservation's web site at http://www.achp.gov/work106.html.

Researchers proposing projects with fieldwork involving perturbation of the environment, excavation of archaeological sites, use of underwater seismic air guns, drilling, construction, or other activity that may be considered a major Federal action should contact the Environmental Officer of the Office of Polar Programs, Dr. Polly Penhale (ppenhale@nsf.gov) for guidance on environmental consultations, permitting, and NSF s obligations under existing environmental laws.

Identify this Solicitation Number on the Proposal Cover Sheet.

B. Budgetary Information

Cost Sharing: Cost sharing is not required under this solicitation.

C. Due Dates

- **Full Proposal Target Date(s):**

    November 18, 2008

    October 15, 2009

    October 15, Annually Thereafter

All programs covered under this solicitation will have a single, annual competition. Proposers must contact the cognizant program director for approval, prior to the Target Date, when intending to submit a proposal after the Target Date. This is essential for orderly review of all submissions. Late proposals may miss a particular panel review but may still be reviewed ad hoc if received after the target date, provided the proposer has prior approval from the program director. Failure to obtain prior approval of the cognizant program director for late submissions may result in the proposal being returned without review.

D. FastLane/Grants.gov Requirements

- **For Proposals Submitted Via FastLane:**

    Detailed technical instructions regarding the technical aspects of preparation and submission via FastLane are available at: https://www.fastlane.nsf.gov/a1/newstan.htm. For FastLane user support, call the FastLane Help Desk at 1-800-673-6188 or e-mail fastlane@nsf.gov. The FastLane Help Desk answers general technical questions related to the use of the FastLane system. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this funding opportunity.

    Submission of Electronically Signed Cover Sheets. The Authorized Organizational Representative (AOR) must electronically sign the proposal Cover Sheet to submit the required proposal certifications (see Chapter II, Section C of the Grant Proposal Guide for a listing of the certifications). The AOR must provide the required electronic certifications within five working days following the electronic submission of the proposal. Further instructions regarding this process are available on the FastLane Website at: https://www.fastlane.nsf.gov/fastlane.jsp.

- **For Proposals Submitted Via Grants.gov:**

Before using Grants.gov for the first time, each organization must register to create an institutional profile. Once registered, the applicant's organization can then apply for any federal grant on the Grants.gov website. The Grants.gov's Grant Community User Guide is a comprehensive reference document that provides technical information about Grants.gov. Proposers can download the User Guide as a Microsoft Word document or as a PDF document. The Grants.gov User Guide is available at: http://www.grants.gov/CustomerSupport. In addition, the NSF Grants.gov Application Guide provides additional technical guidance regarding preparation of proposals via Grants.gov. For Grants.gov user support, contact the Grants.gov Contact Center at 1-800-518-4726 or by email: support@grants.gov. The Grants.gov Contact Center answers general technical questions related to the use of Grants.gov. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this solicitation.

Submitting the Proposal: Once all documents have been completed, the Authorized Organizational Representative (AOR) must submit the application to Grants.gov and verify the desired funding opportunity and agency to which the application is submitted. The AOR must then sign and submit the application to Grants.gov. The completed application will be transferred to the NSF FastLane system for further processing.

VI. NSF PROPOSAL PROCESSING AND REVIEW PROCEDURES

Proposals received by NSF are assigned to the appropriate NSF program where they will be reviewed if they meet NSF proposal preparation requirements. All proposals are carefully reviewed by a scientist, engineer, or educator serving as an NSF Program Officer, and usually by three to ten other persons outside NSF who are experts in the particular fields represented by the proposal. These reviewers are selected by Program Officers charged with the oversight of the review process. Proposers are invited to suggest names of persons they believe are especially well qualified to review the proposal and/or persons they would prefer not review the proposal. These suggestions may serve as one source in the reviewer selection process at the Program Officer's discretion. Submission of such names, however, is optional. Care is taken to ensure that reviewers have no conflicts of interest with the proposal.

A. NSF Merit Review Criteria

All NSF proposals are evaluated through use of the two National Science Board (NSB)-approved merit review criteria: intellectual merit and the broader impacts of the proposed effort. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities.

The two NSB-approved merit review criteria are listed below. The criteria include considerations that help define them. These considerations are suggestions and not all will apply to any given proposal. While proposers must address both merit review criteria, reviewers will be asked to address only those considerations that are relevant to the proposal being considered and for which the reviewer is qualified to make judgements.

What is the intellectual merit of the proposed activity?
How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields? How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, the reviewer will comment on the quality of the prior work.) To what extent does the proposed activity suggest and explore creative, original, or potentially transformative concepts? How well conceived and organized is the proposed activity? Is there sufficient access to resources?

What are the broader impacts of the proposed activity?
How well does the activity advance discovery and understanding while promoting teaching, training, and learning? How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)? To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks, and partnerships? Will the results be disseminated broadly to enhance scientific and technological understanding? What may be the benefits of the proposed activity to society?

Examples illustrating activities likely to demonstrate broader impacts are available electronically on the NSF website at: http://www.nsf.gov/pubs/gpg/broaderimpacts.pdf.

NSF staff also will give careful consideration to the following in making funding decisions:

Integration of Research and Education
One of the principal strategies in support of NSF's goals is to foster integration of research and education through the programs, projects, and activities it supports at academic and research institutions. These

institutions provide abundant opportunities where individuals may concurrently assume responsibilities as researchers, educators, and students and where all can engage in joint efforts that infuse education with the excitement of discovery and enrich research through the diversity of learning perspectives.

Integrating Diversity into NSF Programs, Projects, and Activities
Broadening opportunities and enabling the participation of all citizens -- women and men, underrepresented minorities, and persons with disabilities -- is essential to the health and vitality of science and engineering. NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports.

Additional Review Criteria:

Projects requesting support for post-doctoral associates must include a detailed mentoring plan for the associate.

B. Review and Selection Process

Proposals submitted in response to this program solicitation will be reviewed by Ad hoc Review and/or Panel Review.

Reviewers will be asked to formulate a recommendation to either support or decline each proposal. The Program Officer assigned to manage the proposal's review will consider the advice of reviewers and will formulate a recommendation.

After scientific, technical and programmatic review and consideration of appropriate factors, the NSF Program Officer recommends to the cognizant Division Director whether the proposal should be declined or recommended for award. NSF is striving to be able to tell applicants whether their proposals have been declined or recommended for funding within six months. The time interval begins on the deadline or target date, or receipt date, whichever is later. The interval ends when the Division Director accepts the Program Officer's recommendation.

A summary rating and accompanying narrative will be completed and submitted by each reviewer. In all cases, reviews are treated as confidential documents. Verbatim copies of reviews, excluding the names of the reviewers, are sent to the Principal Investigator/Project Director by the Program Officer. In addition, the proposer will receive an explanation of the decision to award or decline funding.

In all cases, after programmatic approval has been obtained, the proposals recommended for funding will be forwarded to the Division of Grants and Agreements for review of business, financial, and policy implications and the processing and issuance of a grant or other agreement. Proposers are cautioned that only a Grants and Agreements Officer may make commitments, obligations or awards on behalf of NSF or authorize the expenditure of funds. No commitment on the part of NSF should be inferred from technical or budgetary discussions with a NSF Program Officer. A Principal Investigator or organization that makes financial or personnel commitments in the absence of a grant or cooperative agreement signed by the NSF Grants and Agreements Officer does so at their own risk.

VII. AWARD ADMINISTRATION INFORMATION

A. Notification of the Award

Notification of the award is made to *the submitting organization* by a Grants Officer in the Division of Grants and Agreements. Organizations whose proposals are declined will be advised as promptly as possible by the cognizant NSF Program administering the program. Verbatim copies of reviews, not including the identity of the reviewer, will be provided automatically to the Principal Investigator. (See Section VI.B. for additional information on the review process.)

B. Award Conditions

An NSF award consists of: (1) the award letter, which includes any special provisions applicable to the award and any numbered amendments thereto; (2) the budget, which indicates the amounts, by categories of expense, on which NSF has based its support (or otherwise communicates any specific approvals or disapprovals of proposed expenditures); (3) the proposal referenced in the award letter; (4) the applicable award conditions, such as Grant General Conditions (GC-1); * or Research Terms and Conditions * and (5) any announcement or other NSF issuance that may be incorporated by reference in the award letter. Cooperative agreements also are administered in accordance with NSF Cooperative Agreement Financial and Administrative Terms and Conditions (CA-FATC) and the applicable Programmatic Terms and Conditions. NSF awards are electronically signed by an NSF Grants and Agreements Officer and transmitted electronically to the organization via e-mail.

*These documents may be accessed electronically on NSF's Website at http://www.nsf.gov/awards/managing/award_conditions.jsp?org=NSF.

Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from pubs@nsf.gov.

More comprehensive information on NSF Award Conditions and other important information on the administration of NSF awards is contained in the NSF *Award & Administration Guide* (AAG) Chapter II, available electronically on the NSF Website at
http://www.nsf.gov/publications/pub_summ.jsp?ods_key=aag

Special Award Conditions:

Principles for the Conduct of Research in the Arctic: Principal Investigators are expected to follow the *Principles for the Conduct of Research in the Arctic*, prepared by the Social Science Task Force of the U.S. Interagency Arctic Research Policy Committee (IARPC) and approved by IARPC in 1990. These principles are listed at http://www.nsf.gov/od/opp/arctic/conduct.jsp. Investigators may find useful the Guidelines for Improved Cooperation between Arctic Researchers and Northern Communities (http://www.arcus.org/guidelines).

Guidelines for Scientific Data (OPP 9-91)

This statement provides guidelines from the Office of Polar Programs (OPP) at the National Science Foundation (NSF) and sets out special conditions applicable to OPP grants to implement the Foundation's Sharing Policy by assuring timely submission of OPP-award data to national data centers and other OPP-specified repositories for secondary use by the scientific community. The Office of Polar Programs, in conformance with NSF policy (see Grant Proposal Guide, http://www.nsf.gov/pubsys/ods/getpub.cfm?gpg), expects investigators to share with other researchers, at no more than incremental cost and within a reasonable time, the data, derived data products, samples, physical collections and other supported materials gathered or created in the course of the research project. The purpose of this policy is to facilitate full and open access to data and materials for polar research from projects supported by OPP.

General Guidelines

For all OPP supported projects:

- All data and derived data products collected under OPP-awards, which are appropriate for submission to a national data center or OPP-specified data repository (OPP-approved web site), should be promptly submitted within a reasonable amount of time, as described below, in responsibilities of Principal Investigators of OPP-Awards.
- OPP considers the documentation of data sets, known as metadata, as vital to the exchange of information on polar research and to a data set's accessibility and longevity for reuse.
- Data archives of OPP-supported projects should include easily accessible information about the data holdings, including quality assessments, supporting ancillary information, and guidance for locating and obtaining the data.
- National and international standards should be used to the greatest extent possible for the collection, processing and communication of OPP-sponsored data sets.

Special Note for Arctic Social Sciences Awards

The Arctic Social Sciences Program supports the full range of social science disciplines and adheres to the Data Sharing Policy developed by NSF's Directorate for Social Behavioral and Economic Research (SBE). The nature of the data, the way they are collected, analyzed, and stored, and the pace at which this occurs, vary widely. Different storage facilities and access requirements exist for different types of social science data, e.g., archaeological data, specimens from physical anthropology, large-scale survey data, oral interviews, and field records. Where appropriate and possible, grantees from all social science fields will develop and submit specific plans to share materials collected with NSF support. These plans should cover how and where these materials will be stored, at reasonable cost, and how access will be provided to other researchers, at their cost. Many complexities arise across the range of data collection supported by the Arctic Social Sciences Program. Therefore, such unusual circumstances and any necessary modifications or exemptions to the general policy of data sharing should be described in the OPP-awardees sharing plans.

Responsibilities of Principal Investigators of OPP-Funded Awards

Principal investigators should make their data available to all reasonable requests and where applicable the principal investigators should submit the data collected to designated data centers as soon as possible, but no later than two (2) years after the data are collected. Data sets from Arctic Observing Network projects are expected to be made publicly available immediately upon collection.

Principal investigators working in coordinated programs (multi-investigator and/or multi-agency programs) may (in consultation with the OPP program managers and other funding agencies involved) establish more stringent data submission procedures to meet the needs of these larger coordinated programs. Principal Investigators with OPP-funded awards should comply with data policies established for these coordinated programs and submit their data as required to the appropriate repository stipulated by the coordinated program office.

Compliance with the data guidelines will be considered in the program managers overall evaluation of a Principal Investigator's prior support record.

Conditions for OPP Awards

Principal Investigators of OPP-funded awards are REQUIRED to submit to appropriate electronic data directories, a description of their data (i.e., metadata) resulting from OPP-funded research in the form of a Directory Interchange Format (DIF) entry. Submission of the DIF may be at any time during the tenure of the grant. At the time of submission of the Final Report to NSF, a copy of the DIF must be sent to the cognizant program officer in OPP. Failure to provide final technical reports delays NSF review and processing of pending proposals for that Principal Investigator. Principal Investigators should examine the formats of the required reports in advance to assure availability of required data. Sample DIFs can be found on the Global Change Master Directory web page at http://gcmd.gsfc.nasa.gov.

Data sets from OPP supported arctic scientific research should go to the appropriate data center for the specific type of data collected. Any questions concerning this policy should be directed to the cognizant program officer in the Office of Polar Programs.

C. Reporting Requirements

For all multi-year grants (including both standard and continuing grants), the Principal Investigator must submit an annual project report to the cognizant Program Officer at least 90 days before the end of the current budget period. (Some programs or awards require more frequent project reports). Within 90 days after expiration of a grant, the PI also is required to submit a final project report.

Failure to provide the required annual or final project reports will delay NSF review and processing of any future funding increments as well as any pending proposals for that PI. PIs should examine the formats of the required reports in advance to assure availability of required data.

PIs are required to use NSF's electronic project-reporting system, available through FastLane, for preparation and submission of annual and final project reports. Such reports provide information on activities and findings, project participants (individual and organizational) publications; and, other specific products and contributions. PIs will not be required to re-enter information previously provided, either with a proposal or in earlier updates using the electronic system. Submission of the report via FastLane constitutes certification by the PI that the contents of the report are accurate and complete.

Please see the OPP Guidelines for Scientific Data (OPP 9-91) (http://www.nsf.gov/publications/pub_summ.jsp?ods_key=opp991) described in Section VII. B. Award Conditions in this program solicitation for information about award conditions for data.

VIII. AGENCY CONTACTS

General inquiries regarding this program should be made to:

- Renee D. Crain, Arctic Research and Education Assistant Program Director, 755 S, telephone: (703) 292-4482, fax: (703) 292-9082, email: rcrain@nsf.gov

- Patrick Haggerty, Arctic Research Support and Logistics Program Director, 755 S, telephone: (703) 292-8577, fax: (703) 292-9082, email: phaggert@nsf.gov

- Martin Jeffries, 740 S, telephone: (703) 292-8029, email: mjeffrie@nsf.gov

- Anna Kerttula de Echave, Arctic Social Sciences Program Director, 740 S, telephone: (703) 292-7432, fax: (703)292-9082, email: akerttul@nsf.gov

- Brendan P. Kelly, Arctic Natural Sciences Program Manager, 755, telephone: (703) 292-7434, email: bkelly@nsf.gov

- Neil R. Swanberg, Arctic System Science Program Director, 755 S, telephone: (703) 292-8029, email: nswanber@nsf.gov

- William J. Wiseman, Arctic Natural Sciences Program Director, 740 S, telephone: (703) 292-4750, fax: (703) 292-9082, email: wwiseman@nsf.gov

For questions related to the use of FastLane, contact:

- FastLane Help Desk, telephone: 1-800-673-6188; e-mail: fastlane@nsf.gov.

- Linda Izzard, Program Coordination Specialist, 755, telephone: (703) 292-7430, fax: (703) 292-9082, email: lizzard@nsf.gov

For questions relating to Grants.gov contact:

- Grants.gov Contact Center: If the Authorized Organizational Representatives (AOR) has not received a confirmation message from Grants.gov within 48 hours of submission of application, please contact via telephone: 1-800-518-4726; e-mail: support@grants.gov.

IX. OTHER INFORMATION

The NSF Website provides the most comprehensive source of information on NSF Directorates (including contact information), programs and funding opportunities. Use of this Website by potential proposers is strongly encouraged. In addition, MyNSF (formerly the Custom News Service) is an information-delivery system designed to keep potential proposers and other interested parties apprised of new NSF funding opportunities and publications, important changes in proposal and award policies and procedures, and upcoming NSF Regional Grants Conferences. Subscribers are informed through e-mail or the user's Web browser each time new publications are issued that match their identified interests. MyNSF also is available on NSF's Website at http://www.nsf.gov/mynsf/.

Grants.gov provides an additional electronic capability to search for Federal government-wide grant opportunities. NSF funding opportunities may be accessed via this new mechanism. Further information on Grants.gov may be obtained at http://www.grants.gov.

ABOUT THE NATIONAL SCIENCE FOUNDATION

The National Science Foundation (NSF) is an independent Federal agency created by the National Science Foundation Act of 1950, as amended (42 USC 1861-75). The Act states the purpose of the NSF is "to promote the progress of science; [and] to advance the national health, prosperity, and welfare by supporting research and education in all fields of science and engineering."

NSF funds research and education in most fields of science and engineering. It does this through grants and cooperative agreements to more than 2,000 colleges, universities, K-12 school systems, businesses, informal science organizations and other research organizations throughout the US. The Foundation accounts for about one-fourth of Federal support to academic institutions for basic research.

NSF receives approximately 40,000 proposals each year for research, education and training projects, of which approximately 11,000 are funded. In addition, the Foundation receives several thousand applications for graduate and postdoctoral fellowships. The agency operates no laboratories itself but does support National Research Centers, user facilities, certain oceanographic vessels and Antarctic research stations. The Foundation also supports cooperative research between universities and industry, US participation in international scientific and engineering efforts, and educational activities at every academic level.

Facilitation Awards for Scientists and Engineers with Disabilities provide funding for special assistance or equipment to enable persons with disabilities to work on NSF-supported projects. See Grant Proposal Guide Chapter II, Section D.2 for instructions regarding preparation of these types of proposals.

The National Science Foundation has Telephonic Device for the Deaf (TDD) and Federal Information Relay Service (FIRS) capabilities that enable individuals with hearing impairments to communicate with the Foundation about NSF programs, employment or general information. TDD may be accessed at (703) 292-5090 and (800) 281-8749, FIRS at (800) 877-8339.

The National Science Foundation Information Center may be reached at (703) 292-5111.

The National Science Foundation promotes and advances scientific progress in the United States by competitively awarding grants and cooperative agreements for research and education in the sciences, mathematics, and engineering.

To get the latest information about program deadlines, to download copies of NSF publications, and to access abstracts of awards, visit the NSF Website at http://www.nsf.gov

- **Location:**   4201 Wilson Blvd. Arlington, VA 22230

- **For General Information**   (703) 292-5111
  (NSF Information Center)**:**

- **TDD (for the hearing-impaired):**   (703) 292-5090

- **To Order Publications or Forms:**

        Send an e-mail to: pubs@nsf.gov

        or telephone: (703) 292-7827

- **To Locate NSF Employees:**   (703) 292-5111

PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

The information requested on proposal forms and project reports is solicited under the authority of the National Science Foundation Act of 1950, as amended. The information on proposal forms will be used in connection with the selection of qualified proposals; and project reports submitted by awardees will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the proposal review process; to proposer institutions/grantees to provide or obtain data regarding the proposal review process, award decisions, or the administration of awards; to government contractors, experts, volunteers and researchers and educators as necessary to complete assigned work; to other government agencies or other entities needing information regarding applicants or nominees as part of a joint application review process, or in order to coordinate programs or policy; and to another Federal agency, court, or party in a court or Federal administrative proceeding if the government is a party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See Systems of Records, NSF-50, "Principal Investigator/Proposal File and Associated Records," 69 Federal Register 26410 (May 12, 2004), and NSF-51, "Reviewer/Proposal File and Associated Records, " 69 Federal Register 26410 (May 12, 2004). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

An agency may not conduct or sponsor, and a person is not required to respond to, an information collection unless it displays a valid Office of Management and Budget (OMB) control number. The OMB control number for this collection is 3145-0058. Public reporting burden for this collection of information is estimated to average 120 hours per response, including the time for reviewing instructions. Send comments regarding the burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to:

Suzanne H. Plimpton
Reports Clearance Officer
Division of Administrative Services
National Science Foundation
Arlington, VA 22230