# Synthesis of Arctic System Science

**Program Solicitation**
**NSF 06-523**

***Replaces Document(s):***
**NSF 05-525**

**National Science Foundation**

Office of Polar Programs
Division of Arctic Sciences

**Full Proposal Deadline(s)** (due by 5 p.m. proposer's local time):

March 24, 2006

## SUMMARY OF PROGRAM REQUIREMENTS

### General Information

**Program Title:**

Synthesis of Arctic System Science

**Synopsis of Program:**

This solicitation is for research that synthesizes our understanding of the arctic system. The arctic system is a set of interconnected and interacting physical, biological, and human components and processes in the northern region influenced by the existence of perennial ice (sea ice, ice sheets, glaciers, permafrost, etc.). Research efforts supported will build on and integrate the wealth of existing data and knowledge to advance our understanding of the behavior of the arctic system or key subsets of the system and to understand the role it plays in the global system and society.

**Cognizant Program Officer(s):**

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

**Estimated Number of Awards:** 5 to 10

**Anticipated Funding Amount:** $7,000,000 total, combined from FY 2006 and FY 2007 for awards up to three years, pending availability of funds

## Eligibility Information

**Organization Limit:**

None Specified

**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
- **Full Proposal Preparation Instructions:** This solicitation contains information that supplements the standard Grant Proposal Guide (GPG) proposal preparation guidelines. Please see the full text of this solicitation for further information

**B. Budgetary Information**

- **Cost Sharing Requirements:** Cost Sharing is not required by NSF.
- **Indirect Cost (F&A) Limitations:** Not Applicable
- **Other Budgetary Limitations:** Other budgetary limitations apply. Please see the full text of this solicitation for further information.

**C. Due Dates**

- **Full Proposal Deadline(s)** (due by 5 p.m. proposer's local time):

  March 24, 2006

## 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.

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## I. INTRODUCTION

The Arctic System and the Arctic System Science (ARCSS) Program

The Arctic is a complex system consisting of physical, biological, and social components that interact across a wide range of temporal and spatial scales. Sea ice, ice sheets, and permafrost are among the key features that distinguish the Arctic from lower latitude systems. The arctic system behaves in ways that are not fully understood and has demonstrated the capacity for rapid, amplified, and unpredictable change with global implications. Because of the Arctic s pivotal role in the Earths climate, it is critical perhaps urgent that we understand this system in light of abundant evidence that a set of linked and pervasive changes are underway. What do these changes mean for the future of both the Arctic and the Earth? Answering this question is the overarching goal of the NSF Arctic System Science (ARCSS) Program. To achieve this goal, ARCSS research focuses on understanding the fundamental characteristics, dynamics, and controlling principles of the arctic system through integration and synthesis of knowledge from past and ongoing studies.

Specifically, ARCSS-supported research seeks to:

- Identify the most sensitive and critical components and interactions driving arctic system behavior.
- Integrate and synthesize modeling results, observations, process understanding, paleo-environmental data, and human dimensions knowledge.
- Strengthen interactions between arctic research communities and the broader Earth system science community in order to ensure that the Arctic is accurately represented in earth system models.
- Enhance two-way communication with stakeholders, decision-makers, and the public to increase the impact of

ARCSS research.

During the past 15 years the ARCSS Program has supported research that primarily focused on individual components of the arctic system such as the land (LAII) and ocean components (OAII), and more recently on interactions among several components, for instance through investigations of the freshwater cycle. Targeted initiatives have addressed the heat budget of sea ice (SHEBA), physical and biogeochemical processes on the ocean shelf-basin margin (SBI), and the Russian (RAISE) and Alaskan (SNACS) coastal zones. There have also been concerted efforts to understand the modern state of the Arctic in light of paleo-conditions (GISP, PALE, PARCS), and the relationship between arctic environmental changes and people (HARC). These programs have contributed enormously to our understanding of the Arctic. Further information about ARCSS research projects is at http://www.arcus.org/ARCSS/. Additional information about many currently funded ARCSS projects is available on the VECO Polar Resources website at: http://www.vecopolar.com/ (click on GIS Maps/Reports ).

The next step in advancing toward an integrated understanding of the system is to focus explicitly on questions that link multiple system components and processes across a range of temporal and spatial scales. Moreover, an abundance of data has been generated by ARCSS Program research, much of which has not been fully utilized (see http://www.ncdc.noaa.gov/paleo/parcs/parcsdata.php, http://www.joss.ucar.edu/projects.html, http://nsidc.org/data/arcss.html ). To begin to address this, ARCSS issued a solicitation in 2005 for proposals on synthesis. This solicitation seeks additional proposals to undertake this synthesis and complement the research underway under awards that were made in 2005. This call for proposals is timely because the pace of arctic change has accelerated; an integrated system understanding is now essential to establish a scientific basis for predicting environmental change and most importantly for supporting decision-making processes in society and formulating policy options.

## II. PROGRAM DESCRIPTION

Proposals are sought that discover, clarify, and improve our understanding of linkages, interactions, and feedbacks among two or more components of the arctic system. Strong proposals focused on arctic synthesis will meet all of the following criteria (addressed explicitly in the proposal):

- *Incorporate elements from the existing arctic data, information, and models.* Proposed investigations should build upon past research efforts by using data sets, model output, knowledge of processes, and other available information. New data collection or dataset development efforts may be considered only if a key knowledge gap can be clearly identified, and the efforts demonstrated to be absolutely indispensable to the synthesis activity that is being proposed.
- *Focus on interdisciplinary, cross-cutting questions that will lead to a better understanding of how the system components function and interact.* Cross-cutting questions should complement (not duplicate) those being addressed by current synthesis projects (http://www.arcus.org/ARCSS/synthesis.html) and might focus on such themes as: unique aspects of arctic radiative forcing and extreme seasonality; causes of spatial and temporal variability in system components; interaction of physical, biological, and social factors on dampening or amplifying arctic change; human versus natural perturbations to the system; or adaptation, management and policy issues. Investigations might, for example, explore processes and interactions that are responsible for, or driven by, phenomena such as sea ice thinning, land surface changes, alterations in ocean productivity, permafrost degradation, changing modes of energy transfer from lower-latitudes, damage to infrastructure, effects of arctic warming on human communities, economic development, or economic transitions. Proposals that explore the linkages between the Arctic and the global system are also welcome. Proposals that approach system-level science in novel and unique ways are encouraged.
- *Demonstrate clear relevance to the entire arctic system, and if appropriate, relevance to the role of the arctic system in the broader Earth system.* By their nature, synthesis studies may address a suite of time (including paleo) and space scales (from regional up to pan-Arctic), however the highest priority will be placed on studies that focus on the system at a pan-arctic scale. Investigations need not have a pan-Arctic geographic scope, but must demonstrate the relevance of site-specific research to the entire arctic system and provide an explicit plan for how findings will be applied or integrated across temporal and spatial scales. Topics that link multiple spatial and/or temporal scales are encouraged.
- *Include specific plans for deposition of data and products resulting from the project into the ARCSS data and information system before the end of the project.* The plan should include the preparation of metadata documentation for the data, identification of which repository or repositories will receive the data, and how the data will contribute to the larger arctic system synthesis. Project data management plans should also articulate clearly how they will promote integration and synthesis with existing and future ARCSS projects. Dataset development will only be funded if it is explicitly part of a well defined synthesis activity.

It is a major goal of this program solicitation to foster the development of a number of complementary and interacting arctic system science synthesis projects. All proposed efforts should articulate how they will complement and improve upon the overall constellation of current synthesis projects

Mechanisms for Synthesis

Projects could approach synthesis through any mechanism deemed appropriate given the focus and scope of proposed research. These methods or mechanisms could include integrated analyses, community workshops, applied/decision-support tools, conceptual, numerical or spatial models, or others as applicable. The existing ARCSS web pages (http://www.arcus.org/ARCSS/synthesis.html) describe a number of synthesis mechanisms that are currently used within ARCSS, but new proposed approaches are encouraged as well.

Coordination of Synthesis Efforts Among Projects

It is essential that the individual projects funded through this solicitation work with each other as well as with other ARCSS projects as part of the ARCSS-wide synthesis effort (http://www.arcus.org/ARCSS/synthesis.html). Investigators from successful projects will be expected to participate in multiple coordinated, synthesis-focused activities, with the goal of encouraging system synthesis at the highest levels and promoting the interdisciplinary dialog essential to answering the central ARCSS question. Travel expenses necessary for these activities will be funded separately through the ARCSS program office and need not be included in the proposal budget.

More Information on ARCSS Synthesis

This solicitation is part of an ongoing effort in the ARCSS Program to synthesize results. The need for synthesis has increased over time as the pace of arctic change has accelerated and the analysis and integration activities that began with the start of the program in 1989 provide a compelling foundation for this major synthesis effort. Information regarding these efforts is available on the ARCUS website at: http://www.arcus.org/ARCSS/. Creative new approaches and themes are encouraged; the material on the website is for guidance and information only.

## III. AWARD INFORMATION

Estimated program budget, number of awards and average award size/duration are subject to the availability of funds. Pending the availability of funds, the Office of Polar Programs expects to make 5-10 awards with an anticipated funding amount of $7,000,000 total, combined from FY 2006 and FY 2007 for awards up to three years will be available for this program.

## IV. ELIGIBILITY INFORMATION

The categories of proposers eligible to submit proposals to the National Science Foundation are identified in the Grant Proposal Guide, Chapter I, Section E.

**Organization Limit:**

None Specified

**PI Limit:**

None Specified

**Limit on Number of Proposals per Organization:**

None Specified

**Limit on Number of Proposals per PI:**

None Specified

## V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

### A. Proposal Preparation Instructions

**Full Proposal Instructions:** Proposals submitted in response to this program solicitation should be prepared and submitted in accordance with the guidelines specified 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-PUBS (7827) or by e-mail from pubs@nsf.gov.

The following instructions supplement the GPG guidelines.

Each proposal must include a data management plan that conforms to the Arctic System Science (ARCSS) Program data management policy. For a copy of the policy refer to the ARCSS Data Coordination Center (located at the National Snow and Ice Data Center, web site: http://arcss.colorado.edu/arcss/protocol/protocol.html). Proposals without a data management plan that incorporates the ARCSS data policy will be returned without review.

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 are listed at http://www.nsf.gov/od/opp/arctic/conduct.jsp.

Arctic Research Support and Logistics

It is not anticipated that synthesis proposals will require logistics support, but in the rare event that they might, the following information is provided.

The Arctic Research Support and Logistics (RSL) program supports field components of research funded by the Arctic Sciences Section. Support includes, but is not limited to, providing transportation, food and shelter while conducting field work, user and day-rate fees at field camps, salaries of staff hired specifically for field work, activities such as travel to coordinate projects with permitting agencies and Native peoples. More detailed information is available on the RSL web site (http://www.nsf.gov/od/opp/arctic/res_log_sup.jsp).

Access to logistical support from the RSL program is through the regular proposal process. All fieldwork should be described in the proposal. We strongly recommend preparing a brief outline of the field plan within the proposal body, including a schedule and describing the associated costs in the budget explanation. Costs for field support should not be included in the budget if they are to be provided through a support organization, e.g. the Arctic logistics contractor VECO Polar Resources (VPR; http://vecopolar.com) or the Barrow Arctic Science Consortium (BASC; http://www.sfos.uaf.edu/basc/); however, these activities must be noted in the budget justification.

Proposers are reminded to identify the program solicitation number (Populated with NSF Number at Clearance) 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.

### B. Budgetary Information

**Cost Sharing:** Cost sharing is not required by NSF in proposals submitted to the National Science Foundation.

**Other Budgetary Limitations:**

Proposals should be for a maximum duration of three years.

Investigators from successful projects will be expected to participate in one or more coordinated, synthesis-focused activities, with the goal of encouraging system synthesis at the highest levels and promoting the interdisciplinary dialog essential to answering the central ARCSS question and as a contribution to IPY. Travel expenses necessary for these activities will be funded separately through the ARCSS program office and need not be included in the proposal budget.

**Budget Preparation Instructions:**

It is not anticipated that synthesis proposals will require logistics support, but in the rare event that they might, the following information is provided.

A brief section in the proposal and budget justification should outline any field plan and associated costs (see Full Proposal Instructions, "Arctic Research Support and Logistics").

Researchers intending to use a vessel from UNOLS or the USCG should follow the UNOLS procedure (http://www.unols.org).

## C. Due Dates

- **Full Proposal Deadline(s)** (due by 5 p.m. proposer's local time):

  March 24, 2006

## D. FastLane Requirements

Proposers are required to prepare and submit all proposals for this program solicitation through use of the NSF FastLane system. Detailed instructions regarding the technical aspects of proposal preparation and submission via FastLane are available at: http://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.

# VI. NSF PROPOSAL PROCESSING AND REVIEW PROCEDURES

Proposals received by NSF are assigned to the appropriate NSF program and, if they meet NSF proposal preparation requirements, for review. 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 with the proposer.

## 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 and original 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?

NSF staff 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:**

Each proposal must include a data management plan that conforms to the Arctic System Science (ARCSS) Program data management policy. For a copy of the policy refer to the ARCSS Data Coordination Center (located at the National Snow and Ice Data Center, web site: http://arcss.colorado.edu/arcss/protocol/protocol.html). Proposals without a data management plan that incorporates the ARCSS data policy will be returned without review.

In addition to external peer review, proposals will be evaluated both for their contribution to a systems level understanding of the functioning of the whole Arctic and for their potential synergy with other submitted proposals that create an integrated synthesis effort contributing directly to the goals of ARCSS.

## 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 date of receipt. 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 Federal Demonstration Partnership (FDP) 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/general_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:**

Investigators from successful projects will be expected to participate in one or more coordinated, synthesis-focused activities, with the goal of encouraging system synthesis at the highest levels and promoting the interdisciplinary dialog essential to answering the central ARCSS question and as a formal contribution to IPY.

### 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.

Annual reports must include information about the status of data management activities. Noncompliance with the ARCSS data management policy could be used as grounds for suspension or cancellation of funding commitments. Final reports may not be approved until data deposition requirements are satisfied.

## VIII. AGENCY CONTACTS

General inquiries regarding this program should be made to:

- Neil R. Swanberg, Arctic System Science Program Director, 755 S, telephone: (703) 292-8029, email: nswanber@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, 740 S, telephone: (703) 292-7430, fax: (703) 292-9082, email: lizzard@nsf.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** (NSF Information Center)**:** (703) 292-5111
- **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
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