Archiving and Discovering of Data and Metadata Generated through Projects Funded by the NSF Arctic Sciences Section

PROGRAM SOLICITATION
NSF 15-543

National Science Foundation

Directorate for Geosciences
Division of Polar Programs

Letter of Intent Due Date(s) ***(required)*** (due by 5 p.m. proposer's local time)*:*

April 17, 2015

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

May 18, 2015

IMPORTANT INFORMATION AND REVISION NOTES

Any proposal submitted in response to this solicitation should be submitted in accordance with the revised NSF Proposal & Award Policies & Procedures Guide (PAPPG) (NSF 15-1), which is effective for proposals submitted, or due, on or after December 26, 2014. The PAPPG is consistent with, and, implements the new Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards (Uniform Guidance) (2 CFR § 200).

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Archiving and Discovering of Data and Metadata Generated through Projects Funded by the NSF Arctic Sciences Section

Synopsis of Program:

The National Science Foundation (NSF) invites investigators at U.S. organizations to submit proposals for a cooperative agreement for archival of data and access to data and metadata generated through projects funded by the NSF Arctic Sciences Section. Proposals should focus on providing data and metadata ingest services for NSF-funded data providers, data and metadata access services to scientists across disciplines and other Arctic stakeholders (including decision-makers), and data and metadata archival services to ensure that the data is accessible and discoverable in the future.

Cognizant Program Officer(s):

Please note that the following information is current at the time of publishing. See program website for any updates to the points of contact.

- Marco Tedesco, Polar Cyberinfrastructure Program Director, 755 S, telephone: (703) 292-7120, email: mtedesco@nsf.gov

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

- 47.050 --- Geosciences

Award Information

Anticipated Type of Award: Cooperative Agreement

Estimated Number of Awards: 1

subject to availability of funds

Anticipated Funding Amount: $1,200,000

Up to $1,200,000 per year, subject to availability of funds

Anticipated Duration of Award: 3 to 5 years.

Eligibility Information

Who May Submit Proposals:

Proposals may only be submitted by the following:

- Universities and Colleges - Universities and two- and four-year colleges (including community colleges) accredited in, and having a campus located in, the US acting on behalf of their faculty members. Such organizations also are referred to as academic institutions.
- Non-profit, non-academic organizations: Independent museums, observatories, research labs, professional societies and similar organizations in the U.S. associated with educational or research activities.
- For-profit organizations: U.S. commercial organizations, especially small businesses with strong capabilities in scientific or engineering research or education.
- Tribal governments, Alaska Native Corporations, and Alaska Native non-profit organizations

Who May Serve as PI:

There are no restrictions or limits.

Limit on Number of Proposals per Organization: 1

Each organization may submit no more than one proposal.

Limit on Number of Proposals per PI or Co-PI: 1

Individual PIs may be listed as PI, co-PI, or senior personnel on no more than one proposal submitted to this competition.

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- **Letters of Intent:** Submission of Letters of Intent is required. Please see the full text of this solicitation for further information.
- **Preliminary Proposal Submission:** Not required
- **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/publications/pub_summ.jsp?ods_key=grantsgovguide)

B. Budgetary Information

- **Cost Sharing Requirements:** Inclusion of voluntary committed cost sharing is prohibited.
- **Indirect Cost (F&A) Limitations:** Not Applicable
- **Other Budgetary Limitations:** Not Applicable

C. Due Dates

- **Letter of Intent Due Date(s) *(required)*** (due by 5 p.m. proposer's local time)***:***

  April 17, 2015

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

  May 18, 2015

Proposal Review Information Criteria

Merit Review Criteria: National Science Board approved criteria apply.

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 Division of Polar Programs, in compliance with NSF policy (see Grant Proposal Guide, http://www.nsf.gov/pubsys/ods/getpub.cfm?gpg), expects investigators to share with other researchers, the data and associated metadata, derived data products, samples, physical collections and other supported materials gathered or created in the course of funded research projects. In particular, the Arctic Sciences Section (ARC) of the Division of Polar Programs (PLR) has adopted a policy for data sharing that applies to all grantees that establishes the requirements criteria for the timely archiving of data in long-lived and publicly accessible archives. The goal is to support and facilitate full and open access to data, metadata and digital material from projects supported by ARC programs, including Arctic Social Sciences.

NSF has invested in cyberinfrastructure activities with the goal of promoting cutting-edge science through the collaboration of domain and computer scientists. Examples of such investments are the EarthCube program (http://www.nsf.gov/geo/earthcube/) and the Polar Cyberinfrastructure Program at the Division of Polar Programs. In particular, the Polar Cyberinfrastructure Program supports projects that will accelerate the pace and effectiveness of discovery, innovation and education across the polar disciplines and of advances that improve the capabilities and productivity in supporting cyberinfrastructure elements of computing, data management, information, networking, sensor and software technologies in polar research.

Over the past decade, NSF has supported projects providing service to ARC-funded investigators for the archiving, accessibility and discovery of data and metadata on long-lived and publicly accessible archives. The Cooperative Arctic Data and Information Service (CADIS; http://www.aoncadis.org/) supported data generated by projects funded by the Arctic Observing Network Program. The Advanced CADIS (ACADIS) system extended this service to all ARC-funded projects. The ACADIS provides assistance and tools needed to for ARC-funded projects to meet requirements for publishing data and associated metadata. ACADIS also provides service for the documentation of the datasets to guarantee preservation and to promote interdisciplinary reuse. This solicitation seeks to re-compete the service provided by the ACADIS system.

In this context, the NSF Polar Cyberinfrastructure Program is soliciting proposals for the archiving, accessibility and discovery of data and metadata generated by projects funded by the NSF Arctic Sciences Section.

II. PROGRAM DESCRIPTION

This solicitation invites the submission of proposals for the archival and access of data and metadata generated by projects funded by the NSF Arctic Sciences Section. Information about the current archive is available at: https://www.aoncadis.org/dashboard.html. It is anticipated that the selected project will:

- Provide services and tools to enable Principal Investigators to meet NSF requirements for publication of metadata, data, and documentation
- Document datasets to ensure preservation and broad, interdisciplinary reuse
- Archive datasets in accordance with international standards
- Enable broad discovery of NSF Arctic data through diverse national and international portals
- Provide support services and help-desk functions for data providers and users
- Conduct outreach to scientific and public user communities, to promote usage of the data
- Solicit and respond to user community input

Priority should be given to the cataloging of data for ongoing projects and for projects that expired within the past 5 years. Datasets generated from projects that expired more than 5 years ago will also be cataloged once the high priority data are ingested. Proposers should include the timeline for cataloging in the management plan.

Proposers are strongly encouraged to consider the use of cloud-based services. Both commercial companies and academic institutions developed efficient cloud-based services that provide long-lived and publicly accessible data and metadata. Cloud service could be considered, for example, for backup purposes, to increase data transfer capabilities for download purposes and to

benefit from available web services.

It is anticipated that the selected project will be funded as a cooperative agreement.

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

Estimated program budget, number of awards and average award size/duration are subject to the availability of funds. Pending availability of funds, $1,200,000 per year may be available for proposals to this solicitation. It is anticipated that one award will be selected with a duration between 3 and 5 years.

IV. ELIGIBILITY INFORMATION

Who May Submit Proposals:

Proposals may only be submitted by the following:

- Universities and Colleges - Universities and two- and four-year colleges (including community colleges) accredited in, and having a campus located in, the US acting on behalf of their faculty members. Such organizations also are referred to as academic institutions.
- Non-profit, non-academic organizations: Independent museums, observatories, research labs, professional societies and similar organizations in the U.S. associated with educational or research activities.
- For-profit organizations: U.S. commercial organizations, especially small businesses with strong capabilities in scientific or engineering research or education.
- Tribal governments, Alaska Native Corporations, and Alaska Native non-profit organizations

Who May Serve as PI:

There are no restrictions or limits.

Limit on Number of Proposals per Organization: 1

Each organization may submit no more than one proposal.

Limit on Number of Proposals per PI or Co-PI: 1

Individual PIs may be listed as PI, co-PI, or senior personnel on no more than one proposal submitted to this competition.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Letters of Intent *(required):*

- The Letter should include the institutions involved in the proposal and a summary of the project that includes a description of the broader impacts and intellectual merit and a summary of the technical aspects of the proposal.

Letter of Intent Preparation Instructions:

When submitting a Letter of Intent through FastLane in response to this Program Solicitation please note the conditions outlined below:

- Sponsored Projects Office (SPO) Submission is not required when submitting Letters of Intent
- Submission of multiple Letters of Intent is not allowed

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 nsfpubs@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/publications/pub_summ.jsp?ods_key=grantsgovguide). 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 nsfpubs@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.5 of the Grant Proposal Guide provides additional information on collaborative proposals.

See Chapter II.C.2 of the GPG for guidance on the required sections of a full research proposal submitted to NSF. Please note that the proposal preparation instructions provided in this program solicitation may deviate from the GPG instructions.

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

Moreover, proposals should include the following in the body of the proposal:

1. A Management/Curatorial Plan that describes the management structure and staffing needs of the project over the life of the Cooperative Agreement. This plan should also include a description of the curatorial services that will be provided and how they will be managed.
2. A Community Interaction and Advisory Plan describing how the team will interact with the user community to ensure that services meet the needs of the community. This plan should include formation of an advisory group for external oversight and input.
3. The proposal should clearly state how project requirements will be met and how performance will be evaluated. Project requirements should be translated into a system-level design and project plan, explaining coordination (if any) with existing projects. Proposals should include information about system architecture and the extent to which archival and discovery support is integrated.

In addition to the above, a Transition Plan must be included (if appropriate) as a Supplementary Document. This document must describe the timeline and costs required to relocate the current archive in order to begin operations by August 1, 2015. The current ACADIS archive will migrated to the cloud in advance of this award.

Additional required information in the section “Results from Prior Research”

Under the section of "Results from Prior Research," PIs must provide a URL indicating where data from that award are archived and available.

Principles for the Conduct of Research in the Arctic

Researchers should conform to the *Principles for the Conduct of Research in the Arctic*, approved by the U.S. Interagency Arctic Research Policy Committee (IARPC) in 1990 (http://www.nsf.gov/geo/plr/arctic/conduct.jsp). Proposers may also find the “Guidelines for Improved Cooperation between Northern Communities and Arctic Researchers” helpful (http://www.arcus.org/arctic-info/archive/17280).

Proposals Involving Human Subjects

Not applicable for this solicitation.

Proposals Involving Arctic Field Work and other Third Party Support

Not applicable for this solicitation.

Environmental Policy Considerations of Field Work

Not applicable for this solicitation.

Data Management

It is not anticipated that the project funded through this solicitation will generate data. However, the proposal must include a data management plan addressing how the proposed project will implement the archiving, accessing and discovery of data and metadata generated through projects funded by the NSF Arctic Section. The data management plan should define the metrics that will be used to quantify use and performance of the ACADIS system. These metrics should be identified in the body of the proposal as well. The proposal must also include a plan for ensuring preservation of all data at the end of the award.

B. Budgetary Information

Cost Sharing: Inclusion of voluntary committed cost sharing is prohibited.

C. Due Dates

- **Letter of Intent Due Date(s) *(required)*** (due by 5 p.m. proposer's local time)***:***

  April 17, 2015

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

  May 18, 2015

D. FastLane / Grants.gov Requirements

For Proposals Submitted Via FastLane:

To prepare and submit a proposal via FastLane, see detailed technical instructions 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.

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. Comprehensive information about using Grants.gov is available on the Grants.gov Applicant Resources webpage: http://www.grants.gov/web/grants/applicants.html. In addition, the NSF Grants.gov Application Guide (see link in Section V.A) provides instructions regarding the technical 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.

Proposers that submitted via FastLane are strongly encouraged to use FastLane to verify the status of their submission to NSF. For proposers that submitted via Grants.gov, until an application has been received and validated by NSF, the Authorized Organizational Representative may check the status of an application on Grants.gov. After proposers have received an e-mail notification from NSF, Research.gov should be used to check the status of an application.

VI. NSF PROPOSAL PROCESSING AND REVIEW PROCEDURES

Proposals received by NSF are assigned to the appropriate NSF program for acknowledgement and, if they meet NSF 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 either as *ad hoc* reviewers, panelists, or both, who are experts in the particular fields represented by the proposal. These reviewers are selected by Program Officers charged with 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. In addition, Program Officers may obtain comments from site visits before recommending final action on proposals. Senior NSF staff further review recommendations for awards. A flowchart that depicts the entire NSF proposal and award process (and associated timeline) is included in the GPG as Exhibit III-1.

A comprehensive description of the Foundation's merit review process is available on the NSF website at: http://nsf.gov/bfa/dias/policy/merit_review/.

Proposers should also be aware of core strategies that are essential to the fulfillment of NSF's mission, as articulated in *Investing in Science, Engineering, and Education for the Nation's Future: NSF Strategic Plan for 2014-2018*. These strategies are integrated in the program planning and implementation process, of which proposal review is one part. NSF's mission is particularly well-implemented through the integration of research and education and broadening participation in NSF programs, projects, and activities.

One of the strategic objectives in support of NSF's mission is to foster integration of research and education through the programs, projects, and activities it supports at academic and research institutions. These institutions must recruit, train, and prepare a diverse STEM workforce to advance the frontiers of science and participate in the U.S. technology-based economy. NSF's contribution to the national innovation ecosystem is to provide cutting-edge research under the guidance of the Nation's most creative scientists and engineers. NSF also supports development of a strong science, technology, engineering, and mathematics (STEM) workforce by investing in building the knowledge that informs improvements in STEM teaching and learning.

NSF's mission calls for the broadening of opportunities and expanding participation of groups, institutions, and geographic regions that are underrepresented in STEM disciplines, which 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.

A. Merit Review Principles and Criteria

The National Science Foundation strives to invest in a robust and diverse portfolio of projects that creates new knowledge and enables breakthroughs in understanding across all areas of science and engineering research and education. To identify which projects to support, NSF relies on a merit review process that incorporates consideration of both the technical aspects of a proposed project and its potential to contribute more broadly to advancing NSF's mission "to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense; and for other purposes." NSF makes every effort to conduct a fair, competitive, transparent merit review process for the selection of projects.

1. Merit Review Principles

These principles are to be given due diligence by PIs and organizations when preparing proposals and managing projects, by reviewers when reading and evaluating proposals, and by NSF program staff when determining whether or not to recommend proposals for funding and while overseeing awards. Given that NSF is the primary federal agency charged with nurturing and supporting excellence in basic research and education, the following three principles apply:

- All NSF projects should be of the highest quality and have the potential to advance, if not transform, the frontiers of knowledge.
- NSF projects, in the aggregate, should contribute more broadly to achieving societal goals. These "Broader Impacts" may be accomplished through the research itself, through activities that are directly related to specific research projects, or through activities that are supported by, but are complementary to, the project. The project activities may be based on previously established and/or innovative methods and approaches, but in either case must be well justified.
- Meaningful assessment and evaluation of NSF funded projects should be based on appropriate metrics, keeping in mind the likely correlation between the effect of broader impacts and the resources provided to implement projects. If the size of the activity is limited, evaluation of that activity in isolation is not likely to be meaningful. Thus, assessing the effectiveness of these activities may best be done at a higher, more aggregated, level than the individual project.

With respect to the third principle, even if assessment of Broader Impacts outcomes for particular projects is done at an aggregated level, PIs are expected to be accountable for carrying out the activities described in the funded project. Thus, individual projects should include clearly stated goals, specific descriptions of the activities that the PI intends to do, and a plan in place to document the outputs of those activities.

These three merit review principles provide the basis for the merit review criteria, as well as a context within which the users of the criteria can better understand their intent.

2. Merit Review Criteria

All NSF proposals are evaluated through use of the two National Science Board approved merit review criteria. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities.

The two merit review criteria are listed below. **Both** criteria are to be given **full consideration** during the review and decision-making processes; each criterion is necessary but neither, by itself, is sufficient. Therefore, proposers must fully address both criteria. (GPG Chapter II.C.2.d.i. contains additional information for use by proposers in development of the Project Description section of the proposal.) Reviewers are strongly encouraged to review the criteria, including GPG Chapter II.C.2.d.i., prior to the review of a proposal.

When evaluating NSF proposals, reviewers will be asked to consider what the proposers want to do, why they want to do it, how they plan to do it, how they will know if they succeed, and what benefits could accrue if the project is successful. These issues apply both to the technical aspects of the proposal and the way in which the project may make broader contributions. To that end, reviewers will be asked to evaluate all proposals against two criteria:

- **Intellectual Merit:** The Intellectual Merit criterion encompasses the potential to advance knowledge; and
- **Broader Impacts:** The Broader Impacts criterion encompasses the potential to benefit society and contribute to the achievement of specific, desired societal outcomes.

The following elements should be considered in the review for both criteria:

1. What is the potential for the proposed activity to
    a. Advance knowledge and understanding within its own field or across different fields (Intellectual Merit); and
    b. Benefit society or advance desired societal outcomes (Broader Impacts)?
2. To what extent do the proposed activities suggest and explore creative, original, or potentially transformative concepts?
3. Is the plan for carrying out the proposed activities well-reasoned, well-organized, and based on a sound rationale? Does the plan incorporate a mechanism to assess success?
4. How well qualified is the individual, team, or organization to conduct the proposed activities?
5. Are there adequate resources available to the PI (either at the home organization or through collaborations) to carry out the proposed activities?

Broader impacts may be accomplished through the research itself, through the activities that are directly related to specific research projects, or through activities that are supported by, but are complementary to, the project. NSF values the advancement of scientific knowledge and activities that contribute to achievement of societally relevant outcomes. Such outcomes include, but are not limited to: full participation of women, persons with disabilities, and underrepresented minorities in science, technology, engineering, and mathematics (STEM); improved STEM education and educator development at any level; increased public scientific literacy and public engagement with science and technology; improved well-being of individuals in society; development of a diverse, globally competitive STEM workforce; increased partnerships between academia, industry, and others; improved national security; increased economic competitiveness of the United States; and enhanced infrastructure for research and education.

Proposers are reminded that reviewers will also be asked to review the Data Management Plan and the Postdoctoral Researcher Mentoring Plan, as appropriate.

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 evaluate proposals using two National Science Board approved merit review criteria and, if applicable, additional program specific criteria. A summary rating and accompanying narrative will be completed and submitted by each reviewer. 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 strives to be able to tell applicants whether their proposals have been declined or recommended for funding within six months. Large or particularly complex proposals or proposals from new awardees may require additional review and processing time. The time interval begins on the deadline or target date, or receipt date, whichever is later. The interval ends when the Division Director acts upon the Program Officer's recommendation.

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. After an administrative review has occurred, Grants and Agreements Officers perform 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.

Once an award or declination decision has been made, Principal Investigators are provided feedback about their proposals. In all cases, reviews are treated as confidential documents. Verbatim copies of reviews, excluding the names of the reviewers or any reviewer-identifying information, 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.

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 notice, 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 notice; (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 notice. 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 nsfpubs@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

Not Applicable for this solicitation

Policy for Sharing Scientific Data

The Arctic Sciences Section (ARC) of the Division of Polar Programs (PLR) at the National Science Foundation (NSF) has adopted a policy for data sharing that will be applied to all grantees. This policy establishes the requirements criteria for the timely archiving of data in long-lived and publicly accessible archives and sets out special conditions applicable to ARC grants. The purpose of this policy is to facilitate full and open access to data, metadata and materials for polar research from projects supported by ARC.

The Division 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 and associated metadata, derived data products, samples, physical collections and other supported materials gathered or created in the course of the research project. Data sets from ARC-supported scientific research should be deposited in archives appropriate for the specific type of data collected.

Data archives of ARC-supported projects should include easily accessible information about the data holdings (metadata), including quality assessments, supporting ancillary information, and guidance for locating and obtaining the data. National and international data and metadata standards should be used for the collection, processing and communication of ARC-sponsored data sets. The use of graphics to present data or results does not qualify as sharing of scientific data or submission to an archive.

NSF realizes that on occasion there are data gathered of a particularly sensitive nature, such as the locations of archaeological sites or nest locations of endangered species. It is not the intention of this policy to reveal such information publicly. Discipline standards, indigenous community cultural rules, and state and federal regulations and laws should be followed for these types of data.

General Data Sharing Policy

For all ARC supported projects:

- Complete metadata must be submitted to a national data center or ARC-approved data center within two years of collection or before the end of the award, whichever comes first.
- All data and derived data products that are appropriate for submission to a national data center or PLR-approved data repository, must be submitted within two years of collection or before the end of the award, whichever comes first.

Responsibilities of Principal Investigators of Awards Funded by the Arctic Sciences Section

Coordinated programs (multi-investigator and/or multi-agency programs) may (in consultation with the ARC program managers and other funding agencies involved) establish data submission procedures that are more rigorous than those for typical single-investigator projects, as necessary to meet the coordinated mission objectives. Principal Investigators with ARC-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. Annual and final reports may not be approved if program managers determine that data sharing requirements have

not been met. This will prevent future funding increments, awards and most other NSF actions for the PI and his or her co-PIs until the requirement is satisfied and the report is approved.

Any questions concerning this policy should be directed to the cognizant program officer in the Arctic Sciences Section.

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 prior to the end of the current budget period. (Some programs or awards require submission of more frequent project reports). Within 90 days following expiration of a grant, the PI also is required to submit a final project report, and a project outcomes report for the general public.

Failure to provide the required annual or final project reports, or the project outcomes report, will delay NSF review and processing of any future funding increments as well as any pending proposals for all identified PIs and co-PIs on a given award. 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 Research.gov, for preparation and submission of annual and final project reports. Such reports provide information on accomplishments, project participants (individual and organizational), publications, and other specific products and impacts of the project. Submission of the report via Research.gov constitutes certification by the PI that the contents of the report are accurate and complete. The project outcomes report also must be prepared and submitted using Research.gov. This report serves as a brief summary, prepared specifically for the public, of the nature and outcomes of the project. This report will be posted on the NSF website exactly as it is submitted by the PI.

More comprehensive information on NSF Reporting Requirements 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.

Please see the instructions, Section VII. B. Award Conditions in this program solicitation for information about award conditions for data.

VIII. AGENCY CONTACTS

Please note that the program contact information is current at the time of publishing. See program website for any updates to the points of contact.

General inquiries regarding this program should be made to:

- Marco Tedesco, Polar Cyberinfrastructure Program Director, 755 S, telephone: (703) 292-7120, email: mtedesco@nsf.gov

For questions related to the use of FastLane, contact:

- FastLane Help Desk, telephone: 1-800-673-6188; e-mail: fastlane@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, "NSF Update" 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 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. "NSF Update" also is available on NSF's website at https://public.govdelivery.com/accounts/USNSF/subscriber/new?topic_id=USNSF_179.

Grants.gov provides an additional electronic capability to search for Federal government-wide grant opportunities. NSF funding opportunities may be accessed via this 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 55,000 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 Arctic 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: nsfpubs@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:

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Reports Clearance Officer
Office of the General Counsel
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