Paleo Perspectives on Climate Change (P2C2)

Program Solicitation
NSF 08-505

National Science Foundation

Directorate for Geosciences
Division of Atmospheric Sciences
Division of Earth Sciences
Division of Ocean Sciences

Office of Polar Programs

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

February 04, 2008

October 15, 2008

October 15, 2009

REVISION NOTES

In furtherance of the President's Management Agenda, NSF has identified programs that will offer proposers the option to utilize Grants.gov to prepare and submit proposals, or will require that proposers utilize Grants.gov to prepare and submit proposals. Grants.gov provides a single Government-wide portal for finding and applying for Federal grants online.

In response to this program solicitation, proposers may opt to submit proposals via Grants.gov or via the NSF FastLane system. 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.

The P2C2 competition is a continuation of the previous Earth System History (ESH) competition.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Paleo Perspectives on Climate Change (P2C2)

Synopsis of Program:

The goal of research funded under the interdisciplinary P2C2 solicitation is to utilize key geological,

chemical, and biological records of climate system variability to provide insights into the mechanisms and rate of change that characterized Earth's past climate variability, the sensitivity of Earth's climate system to changes in forcing, and the response of key components of the Earth system to these changes. Important scientific objectives of P2C2 are to: 1) provide comprehensive paleoclimate data sets that can serve as model test data sets analogous to instrumental observations; and 2) enable transformative syntheses of paleoclimate data and modeling outcomes to understand the response of the longer-term and higher magnitude variability of the climate system that is observed in the geological record.

Cognizant Program Officer(s):

- David J. Verardo, Program Director, Division of Atmospheric Sciences, 775 S, telephone: (703) 292-8527, fax: (703) 292-9022, email: dverardo@nsf.gov
- Howard J. Spero, Program Director, Division of Ocean Sciences, 725 N, telephone: (703) 292-8581, fax: (703) 292-9085, email: hspero@nsf.gov
- Paul E. Filmer, Program Director, Division of Earth Sciences, 785 S, telephone: (703) 292-7858, fax: (703) 292-9025, email: pfilmer@nsf.gov
- Thomas P. Wagner, Program Director, Office of Polar Programs, telephone: (703) 292-4746, email: twagner@nsf.gov

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

- 47.050 --- Geosciences
- 47.078 --- Office of Polar Programs

Award Information

Anticipated Type of Award: Standard Grant or Continuing Grant

Estimated Number of Awards: 35 - Approximately 35 new awards per year with an average award size of $110,000 per year. Typical award duration is expected to be three to four years.

Anticipated Funding Amount: $11,000,000 per year 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 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 Deadline(s)** (due by 5 p.m. proposer's local time):

  February 04, 2008

  October 15, 2008

  October 15, 2009

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: Standard NSF award conditions apply

Reporting Requirements: Standard NSF reporting requirements apply

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I. INTRODUCTION

The Paleo Perspectives on Climate Change (P2C2) competition is a coordinated paleoclimate science initiative that is funded by the National Science Foundation (NSF) Divisions of Atmospheric Sciences (ATM), Earth Sciences (EAR), and Ocean Sciences (OCE) in the Geosciences (GEO) Directorate, and the NSF Office of Polar Programs (OPP). The annual P2C2 competition supports the scientific objectives of the US Climate Change Science Program (CCSP) by fostering interdisciplinary research and synthesis of climate data.

The importance of P2C2 research, as an element of the CCSP, stems from its unique capability, on timescales longer than the instrumental record, to: 1) document the past temporal and spatial variability of Earth's climate system; 2) evaluate the rates of change associated with this variability; 3) determine the sensitivity of the Earth's climate system to variations in climate-forcing factors; and 4) provide a test environment for simulation predictions from numerical models.

Proposals to the P2C2 competition must clearly state how the proposed projects will contribute to achieving these goals and how the research is relevant to the P2C2 areas of Research Interest.

Support for Antarctic field work will not be considered in the P2C2 competition.

II. PROGRAM DESCRIPTION

Rapidly increasing atmospheric greenhouse gases will alter the climate system in ways that have not been seen on Earth in many millions of years. While much can be learned about the climate system using existing historical observations and current climate models, the record is far too short to study and observe its full response on multi-decadal to millenial time scales. For that, data from the geological record are required.

The goal of research funded under the P2C2 solicitation is to utilize key geological, chemical, and biological records of climate system variability to provide insights into the mechanisms and rate of change that characterized Earth's past climate variability, the sensitivity of Earth's climate system to changes in forcing, and the response of key components of the Earth system to these changes. The paleoclimate research questions contained in P2C2 are designed to reduce uncertainties in future climate trajectory predictions by focusing on three specific and overlapping lines of inquiry related to the Strategic Plan for the U.S. Climate Change Science Program (CCSP).

Important scientific objectives of P2C2 are to: 1) provide comprehensive paleoclimate data sets that can serve as model test data sets analogous to instrumental observations; and 2) enable syntheses of paleoclimate data and modeling outcomes to understand the response of the longer-term and higher magnitude variability of the climate system that is observed in the geological record.

These are new challenges to the paleoclimate community because these goals require the development of climate targets with sufficiently large signal to noise ratios, and well-constrained boundary and initial conditions of ocean-atmosphere-terrestrial-cryosphere interaction, to accurately determine internal and external forcing. The role of initial conditions addresses the increasing recognition that not all climate states will yield the same response of the Earth’s system components, and that history (that essentially accumulates the initial conditions to any and all starting points) may be significant. The goals also require paleoclimate reconstructions with chronologies sufficiently constrained to be able to quantify short-term changes in climate with well-resolved spatial distributions.

Areas of Research Interest

1. ***What were the regional responses of coupled climate systems like ENSO, the monsoons, NAM, and the MOC during past climate changes? (CCSP Strategic Research Questions 4.2, 4.3, 4.4)***

   The regional expression of climate change, and in particular hydrological variability, extreme events, and possible abrupt transitions, are likely to have the greatest impact on human populations and pose the most serious societal challenges in the future. Dynamical modes of climate variability, such as El Nino/Southern Oscillation (ENSO), the Northern Annular Mode (NAM), and the meridional overturning circulation (MOC), have large-scale influences and strong regional impacts around the globe. Previous paleoclimatic reconstructions have highlighted that regional climate varied significantly in the past, with large regional differences in the hydrological cycle being particularly noteworthy. Changes in the response of these modes of variability are likely to be among the primary mechanisms by which global-scale radiative forcing is converted into regional-scale climate impacts.

   Contributions are particularly sought to improve understanding in the large-scale hydrological variability of tropical and extra-tropical regions and to developing spatial-temporal networks needed to understand variability in ENSO, monsoons, Inter Tropical Convergence Zone (ITCZ) position, and regional hydrologic variability (e.g., droughts and floods) in North America and the tropics.

   Priority will be given to proposals that synthesize existing data and justify the collection of new data to address relevant questions such as:

   a. How have regional climates, including temperature, precipitation-evaporation, climate modes (e.g., ENSO, NAM, monsoons) and extreme climate events (e.g., droughts, floods, tropical storms), varied and interacted on seasonal to longer timescales?

   b. What forced this observed variability in the geological record, and how realistically can the full-range of regional climate variability be simulated with current climate models?

2. ***How does the geological record inform us about past climate sensitivity and the impact of past abrupt changes in climate under a variety of different boundary conditions, past climate states, or during periods of large and rapid changes in forcing? (CCSP Strategic Research Questions 4.1, 4.2, 4.3, 4.4)***

   Data and models support the idea that Earth's climate system does not always respond linearly to external forcing and, even in the apparent absence of forcing, is capable of abrupt transitions between climate states. The CCSP strategic plan identified assessing the likelihood of future abrupt climate change as a key question (CCSP Strategic Plan Question 4.3), and identifies the need for improved paleoclimate data sets and rigorous paleoclimate modeling studies in order to identify the causes and mechanisms of past abrupt climate change.

   Key scientific needs include understanding the relationship between abrupt climate change and (1) ocean circulation, particularly related to deep water formation; (2) sea-ice transport and processes, particularly where they interact with deep water formation; (3) land-ice behavior; (4) modes of atmospheric variability and how they are altered by changes in mean climate conditions; (5) the hydrological cycle, including storage, runoff and permafrost changes; and 6) feedback processes that control the interactions between the global carbon, biotic, and hydrologic systems and their impact on other aspects of the climate system across a broad spectrum of atmospheric carbon dioxide levels evident in the geologic record.

   Priority will be given to proposals that synthesize existing data and justify the collection of new data to address relevant questions such as:

   a. How do feedbacks in the Earth system (i.e., water vapor, land and sea ice, land surfaces, vegetation, dust, greenhouse gases) act to amplify a primary radiative forcing?

   b. What are the non-linearities in the climate system and can they limit the ability to use past climates as analogs for future climate changes?

   c. What caused abrupt changes in water availability in the past?

   d. How have the oceans responded chemically and biologically to higher or lower pH (e.g., ocean acidification due to varying carbon dioxide levels including those significantly different than pre-

industrial levels)?

3. ***How sensitive was ice (i.e., sheets, caps, mountain glaciers) and sea level to rapid changes in climate especially during past warm climates? (CCSP Strategic Research Questions 4.1, 4.3)***

   Future sea level rise has enormous consequences for society, but just how much of Greenland and Antarctica will melt and how quickly is poorly understood. There exists some possibility for rapid disintegration of the Greenland and Antarctic ice sheets and a consequent rapid rise in global sea-level. Evaluation of the likelihood and warning signs of such an event will require significant improvements in our understanding of the potential rate of dynamic change in the cryosphere as evidenced by the geologic record.

   The ability to predict future melting is hampered by an insufficient theoretical understanding of ice sheet behavior (i.e., subglacial and englacial hydrology, ice shelf buttressing, sliding dynamics, and cracking). In addition, the observational record of ice sheet behavior is both sparse and short relative to the timescales at which ice sheets will adjust to climate change. A focused paleoclimate component is necessary to spur insight and test theories to improve the scientific understanding of the potential for abrupt changes in ice sheet dynamics.

   Priority will be given to proposals that synthesize existing data and justify the collection of new data to address relevant questions such as:

   a. What was the state of the cryosphere and sea level during the warm periods of the last 5 million years encompassing the Pliocene, Pleistocene, and Holocene?

   b. What was the rate of change in sea ice distribution and land ice in the past and what were the dominant controls on the rates of change?

   c. What were the climatic impacts of ice dynamics, such as melting, during periods of past climatic variability?

III. AWARD INFORMATION

It is anticipated that approximately 35 new awards per year with an average award size of $110,000 per year will be made. Typical award duration is expected to be three to four years. Approximately $9 million is expected to be available in FY 2009 and in FY 2010 for new awards, pending availability of funds.

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 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.

B. Budgetary Information

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

C. Due Dates

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

  February 04, 2008

  October 15, 2008

  October 15, 2009

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 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, 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 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:

Proposals to the P2C2 competition must clearly state how the proposed projects will contribute to achieving these goals and how the research is relevant to the P2C2 areas of Research Interest.

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.

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.

VIII. AGENCY CONTACTS

General inquiries regarding this program should be made to:

- David J. Verardo, Program Director, Division of Atmospheric Sciences, 775 S, telephone: (703) 292-8527, fax: (703) 292-9022, email: dverardo@nsf.gov
- Howard J. Spero, Program Director, Division of Ocean Sciences, 725 N, telephone: (703) 292-8581, fax: (703) 292-9085, email: hspero@nsf.gov
- Paul E. Filmer, Program Director, Division of Earth Sciences, 785 S, telephone: (703) 292-7858, fax: (703) 292-9025, email: pfilmer@nsf.gov
- Thomas P. Wagner, Program Director, Office of Polar Programs, telephone: (703) 292-4746, email: twagner@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, 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.

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