EARTH SYSTEM HISTORY (ESH)

Program Announcement

NSF 00-11

DEADLINE FOR PROPOSAL RECEIPT: ***FEBRUARY 14, 2000***
FEBRUARY 14, 2001

Directorate for Geosciences
Division of Atmospheric Sciences
Division of Earth Sciences
Division of Ocean Sciences
Office of Polar Programs

Office of Global Programs

The National Science Foundation promotes and advances scientific progress in the United States by competitively awarding grants 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 Web site at:

http://www.nsf.gov

Location: 4201 Wilson Blvd.
Arlington, VA 22230

For General Information (NSF Information Center): (703) 306-1234

TDD (for the hearing-impaired): (703) 306-0090

To Order Publications or Forms:

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

or telephone: (301) 947-2722

To Locate NSF Employees: (703) 306-1234

SUMMARY OF PROGRAM REQUIREMENTS

GENERAL INFORMATION

Program Name: Earth System History (ESH)

Short Description/Synopsis of Program: The goal of ESH is to encourage research to understand the natural variability of the Earth system through records preserved in geo-biologic archives and to contribute to a comprehensive understanding of climate change with annual to millennial resolution, including the forcing mechanisms, interactions and feedbacks among its components.

Cognizant Program Officer: Dr. Steven Colman, Program Officer, Room 775, Division of Atmospheric Sciences, National Science Foundation, 4201 Wilson Blvd., Arlington, VA, 22230, telephone 703.306.1527, e-mail: scolman@nsf.gov.

Applicable Catalog of Federal Domestic Assistance (CFDA) No.:

47.050 Geosciences
47.078 Office of Polar Programs
11.431 NOAA Global Change

ELIGIBILITY

• PI eligibility limitations: See NSF Grant Proposal Guide (GPG), NSF 00-2 (or later) for general eligibility requirements.

AWARD INFORMATION

• Type of award anticipated: Standard or Continuing Grant

• Number of annual awards anticipated: 30-50 new awards, with award size ranging from $20,000 - $1,000,000 per year. Typical award durations are expected to be two-three years, but may be up to five years for large, multi-investigator projects.

• Amount of funds available: Approximately $3 - $4 million is expected to be available each year for new awards.

• Anticipated date of awards: July of 2000 and 2001

PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

Proposal Preparation Instructions

• Letter of Intent requirements: None

• Preproposal requirements: None

• Proposal preparation instructions: Standard NSF GPG (NSF 00-2, or later) instructions

• Supplemental proposal preparation instructions: The proposal should include a description of the anticipated data and information products, quality control and documentation in proposal Section I. All

proposals should include a statement in "Results from Prior Research" indicating the disposition of data products generated by the most recently completed Federally-funded research project. If the PI has received an award from the NOAA Paleoclimatology Program within the last five years, a report on that award should be included *in addition to* the Results from Prior NSF Research. The NSF-UNOLS Ship Time Request Form must accompany all proposals requesting ship time (available on Web page: http://www.geo.nsf.gov/oce/sreqform.html). This form should be appended as a PDF file as part of Section H, Facilities, Equipment and Other Resources.

Each proposal must include a section explicitly describing how the proposed work will contribute to one or more of the nine areas of special emphasis. Proposals without such a statement may be returned without review.

• Deviations from standard (GPG) proposal preparation instructions: None other than above.

Budgetary Information

• Cost-sharing/matching requirements: Not required and will not be a factor in the review process.

• Indirect cost (F&A) limitations: None

• Other budgetary limitations: None

FastLane Requirements

• Use of FastLane required.

• FastLane Point of contact: Kandace Binkley, Room 725, Division of Ocean Sciences, National Science Foundation, 4201 Wilson Blvd., Arlington, VA 22230, telephone 703.306.1582, e-mail: ocefl@nsf.gov.

Deadline Dates

• 5:00 PM, local time, February 14, 2000 and 2001

PROPOSAL REVIEW INFORMATION

• Merit Review Criteria: Standard National Science Board-approved criteria. See Merit Review Criteria, p. 9

• Priority will be given to proposals that reviewers indicate have the most relevance to one or more of the nine areas described under “Areas of Special Emphasis.”

AWARD ADMINISTRATION INFORMATION

• Grant Award Conditions: GC-1 or FDP III

• Special grant conditions anticipated: Field logistics and support may require special handling.

• Special reporting requirements anticipated: None

Earth System History

Research Opportunity
Related to the NSF Global Change Research Program

FY 2000 and 2001

INTRODUCTION

Earth System History (ESH) is a research initiative of the U.S. Global Change Research Program (USGCRP). It includes coordinated paleoscience programs supported by the National Science Foundation (NSF) Divisions of Atmospheric Sciences (ATM), Earth Sciences (EAR) and Ocean Sciences (OCE) and the Office of Polar Programs (OPP), and the National Oceanic and Atmospheric Administration (NOAA) Office of Global Programs.

As the paleoscience component of the USGCRP, the emphasis of ESH is upon the Earth's paleoenvironmental system. In this context, the term "Earth system" refers to critical elements of the coupled atmosphere-biosphere-cryosphere-hydrosphere and terrestrial system. ESH proposals need not focus purely upon climate per se, but it should be clear how the project will contribute to understanding climate related processes and Earth system response.

The goal of ESH research is to understand the natural variability of the Earth system through records preserved in geo-biologic archives and to contribute to a comprehensive understanding of climate change with annual to millennial resolution, including the forcing mechanisms, interactions and feedbacks among its components.

The importance of the ESH Program as an element of the USGCRP stems from its unique capabilities to: (1) document the past temporal and spatial variability of the Earth system on timescales longer than the instrumental record; (2) assess the rates of change associated with this variability; (3) determine the sensitivity of the earth system to variations in key forcing factors, such as greenhouse gases, volcanism, orbital forcing, and solar irradiance; (4) examine the response of the Earth system to a variety of climatic perturbations, (5) evaluate the simulations of numerical models under conditions very different from those of the present day. These attributes represent the criteria by which ESH investigations can be viewed as contributions to the USGCRP.

ESH represents a U.S. contribution to Past Global Changes (PAGES), a core project of the International Geosphere - Biosphere Programme (IGBP) and to Climate Variability and Predictability (CLIVAR), a core project of the World Climate Research Program (WCRP). ESH proposals are encouraged to address, but are not limited to, PAGES and PAGES-CLIVAR objectives. ESH is coordinated with paleoscience efforts in the National Science Foundation, National Oceanic and Atmospheric Administration, U.S. Geological Survey, and other Federal agencies.

PROGRAM DESCRIPTION

Assessment of future climate changes and their effects requires understanding the full range of the Earth's variability and how the interlinked systems of ice, ocean, atmosphere, continents and biosphere respond to changing climate conditions. Integrated responses of the Earth system to climatic perturbations are preserved in natural archives of many types including: tree-rings, ice cores, corals, ancient soil deposits and marine, lake and terrestrial sediments. These records provide the data needed to understand the natural

behavior of the Earth system and will provide the temporal perspective for evaluating more recent human-induced impacts.

The paleoclimate and geologic record includes information on: (1) natural temporal and spatial variability, (2) periods of extreme climate and episodes of rapid climate and ecological change, (3) major changes in ocean and atmospheric circulation and composition, and (4) regional effects of climate fluctuations. These features present intellectual, observational, and analytical challenges that must be met in order to understand changes in climate that occur on societal time scales.

AREAS OF SPECIAL EMPHASIS

The ESH Program invites proposals addressing the following areas of special emphasis. Depending on the scope of the project, proposals may be from individual investigators or from teams of investigators to work on crosscutting scientific issues involving multiproxy or interdisciplinary efforts. Linkage with programs at the international level is encouraged, but not required.

1. **Paleoclimate Variability at Annual-Decadal Resolution**: Proposals should address the collection and analysis of high-resolution time series to advance the study of patterns, processes, and causes of interannual to century-scale climatic and environmental variability. Priorities within this area of emphasis are to define the full range of natural environmental and climatic variability, to understand how this variability is affected by changes in external forcing, and to focus on societally-relevant climate variability. Examples of paleoclimate variability research include investigations of a) ENSO atmosphere-ocean interaction and extratropical linkages, b) Tropical/North Atlantic variability, including interactions between tropical processes and regional drought, the North Atlantic Oscillation, and thermohaline circulation, c) Asian/African monsoon dynamics and linkages with ENSO and extratropical variability, d) Shallow meridional ocean circulation and other processes that link tropical and extratropical climate variability, and e) North American drought and flood dynamics. Proposals should fit one of the two PAGES/CLIVAR temporal streams. Stream I: to reconstruct the detailed history of climatic and environmental change for the entire globe for the period since 2000 B.P., with temporal resolution that is at least subdecadal, and ideally annual or seasonal. Stream II: to reconstruct histories of climatic and environmental change with annual to decadal temporal resolution for intervals within the last two glacial cycles, in order to improve our understanding of the natural processes that involve global climatic changes.

2. **Rapid Climate Change**: Proposals should address the use of paleoclimate records to document the frequency, temporal resolution, and spatial extent of past rapid climate changes, particularly those that have occurred during interglacial warm periods such as the Holocene. The use of paleoclimate data in combination with modern climate dynamics, meteorology, and climate modeling is highly encouraged. The priorities within this area of emphasis are a) to understand the mechanisms and forcings associated with rapid climate changes, as well as the feedbacks that reinforce or counteract such changes; and b) to characterize and quantify the response of the various components of the Earth system to rapid changes in climate. Proposals may address rapid changes in the Earth's climate system that have occurred over multiple time scales, ranging from smaller scale regional regime shifts to large global-scale reorganizations of the climate system. Examples of more recent (past 2,000 years) rapid changes include the mid-1970s ENSO regime shift in the Pacific basin, changes in amount and spatial distribution of rainfall associated with the African-Asian monsoon system, and hydrologic regime shifts in North America. Examples of events occurring on longer time scales include both glacial (e.g., Heinrich events, Dansgaard-Oeschger cycles) and interglacial (e.g., 8 kyr cooling event during the Holocene) periods. A higher priority will be placed on studies of rapid climate changes that have occurred during interglacial periods. On the longest time scales, rapid changes such as those of the middle Pliocene increase in northern hemisphere glaciation, and the warming event across the Paleocene/Eocene boundary would be appropriate.

3. **Extreme Warm Conditions**: Proposals should address such issues as (a) improved characterization of intervals with climates warmer than those of the present, (b) conceptual models to explain the origin and/or

termination of warm states, and (c) the feedbacks that maintain global climate during a warm phase. Examples of such intervals include, but are not limited to: the early Holocene, MIS Stage 5e, MIS Stage 11, the Middle Pliocene, the Middle Miocene, and the late Paleocene/early Eocene. A higher priority will be placed on younger intervals, because they are closer to matching present-day boundary conditions and therefore more relevant to understanding future climate change. However, proposals for older intervals will be accepted if they make a clear case for validating or testing of model predictions, or establishing how different parts of the Earth system interact under conditions of extreme warmth.

4. **Spatial Patterns and Continuous Records of Climate Change**. Proposals should address large-scale spatial aspects of climate change, particularly tropical-extratropical linkages and interhemispheric comparisons revealed in continuous marine and terrestrial records. Understanding spatial patterns of past climate changes, the degree of synchroneity or phasing between different areas, and the relation between low latitude and high latitude regions are critical aspects of paleoclimate studies and are necessary to test and improve climate models. Proposals related to international efforts such as those of PAGES (the PANASH project, Pole-Equator-Pole (PEP) transects, IMAGES, and continental drilling for paleoclimate records) are encouraged. Efforts in other areas, such as data-poor locations or locations that form links between PEP transects, and which contribute to a spatial network of paleoclimatic sites capable of addressing regional variability, are also encouraged. Various time scales are relevant, but those with annual resolution for the past 2,000 years and those with century to millenial scale resolution for the last few glacial cycles are especially encouraged.

5. **Arctic Paleoclimate Studies**. The sensitivity of the Arctic to climate change and the fundamental importance of the cryosphere as an influence on the climate system mandate special attention to Arctic paleoclimate research. Close collaboration between the ESH Program and both the Arctic System Science (ARCSS) and Arctic Natural Science (ANS) Programs within the Office of Polar Programs (OPP) at NSF has resulted in a detailed science-and-implementation plan (*PARCS, 1999--Paleoenvironmental Arctic Sciences: The Arctic Paleosciences in the Context of Global Change Research*). The ESH program encourages proposals that address the paleoclimatic issues identified in the PARCS document.

6. **Modeling of Past Change**: Proposals should focus on the use of Earth system models to investigate the patterns, processes, and causes of past climatic and environmental change. An evaluation of Earth system model simulations of past change using paleoclimatic and paleoenvironmental data is an important step in assessing the ability of these models to simulate realistic future change. Studies should focus on using models to assess the sensitivity of the Earth system to hypothesized forcing, and to evaluate the simulated responses using paleoclimate data. Proposals can include the development or improvement of an Earth system model addressing a specific paleoclimate question, but must incorporate rigorous comparisons with paleoclimate/paleoenvironmental data and the testing of paleoclimate hypotheses. Paleoclimate modeling proposals should be closely integrated with one of the other five ESH areas of emphasis to ensure that the predictive Earth system models being used provide realistic simulations of climate variability, abrupt change, climate extremes, or regional change.

For all areas of emphasis, priority will be given to proposals that seek to use the record of past conditions to understand the dynamics of climate/Earth system processes or to integrate local/regional reponses into the large-scale climate system. Proposals confined to descriptive reconstructions of local or regional conditions, without consideration of how those conditions result from or contribute to large-scale processes, will receive a lower priority. In general, the emphasis should be upon understanding mechanisms, processes, and linkages between different elements of the earth/ocean/atmosphere system.

In addition to the areas of emphasis above, proposals will be considered in the following areas:

7. Quantification and development of biotic, physical, and geochemical proxy indicators for past Earth system processes;

8. Improvement of geochronological techniques relevant to ESH goals; and

9. Innovative development and application of statistical techniques that combine and simultaneously analyze various types of paleoclimate data to address regionally specific climate questions.

Each proposal must include a section explicitly describing how the proposed work will contribute to one or more of these nine areas. Proposals without such a statement may be returned without review.

Data Management: Each proposal must adhere to the USGCRP data management policy (http://www.gcdis.usgcrp.gov/policies/dmwg/dmwg-gcp.html) and the policies applying to recipients of Federal funding in the geosciences. Unless otherwise specified in the proposal, the PI/PD will be responsible for ensuring that all data generated by the funded project will be documented and submitted to the World Data Center for Paleoclimatology at the National Geophysical Data Center in Boulder, CO (guidelines for data submission available at http://www.ngdc.noaa.gov/paleo/contrib.html).

The proposal should include a description of the anticipated data and information products, quality control and documentation, as well as any anticipated costs for these activities. A supplemental section entitled "Data and Information Availability" may be added to the proposal (proposal Section I) and is not counted in the Project Description page limitation. Details on this supplemental documentation are included in the NSF Grant Proposal Guide (NSF 00-2, or later). All proposals should include a statement in "Results from Prior Research" indicating the disposition of data products generated by the most recently completed Federally funded research project.

ELIGIBILITY

Depending on the scope of the project, proposals may be from individual investigators or from teams of investigators to work on crosscutting scientific issues involving multiproxy or interdisciplinary efforts. Linkage with programs at the international level is encouraged, but not required.

AWARD INFORMATION

Under this announcement, NSF solicits proposals for any funding amount up to $1.0 million per year for up to five years, and expects to make grants over a wide range of award sizes and durations. Depending on availability of funds, it is expected that approximately $3 - $4 million will be available each year for new awards. Awards may be made as standard or continuing grants.

PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions.
Proposals submitted in response to this program announcement should be prepared and submitted in accordance with the general guidelines contained in the *Grant Proposal Guide* (GPG), NSF 00-2 (or later). The complete text of the GPG (including electronic forms) is available electronically on the NSF Web site at: <http://www.nsf.gov/>. Paper copies of the GPG may be obtained from the NSF Publications Clearinghouse, telephone 301.947.2722 or by e-mail from pubs@nsf.gov.

Proposers are reminded to identify the program announcement number (NSF 00-11) in the program announcement/solicitation block on the NSF Form 1207, "*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.

If the PI (or any co-PI identified on the proposal) has received NSF funding in the past five years, information on the prior award is required. If the proposer has received more than one prior award (excluding amendments), the proposer should report on the award most closely related to the proposal. If a PI or co-PI has received an award from the NOAA Paleoclimatology Program within the last 5 years, information on that prior award is also required. See the GPG for further instructions concerning this section.

Studies requiring a multi-institutional effort may be proposed by submission of several separate, but closely collaborative, proposals having common overall objectives or by a single omnibus proposal containing disciplinary components. In the latter case, only one institution should submit the proposal, which should include signed cover pages, budgets, curricula vitae, etc. for all investigators and institutions involved. Omnibus proposals may exceed the 15-page limit only if written permission is obtained from the appropriate NSF Assistant Director, Office Head or other designee. A copy of this permission must be included with the proposal in accordance with directions in the NSF Grant Proposal Guide (NSF 00-2, or later).

B. Budgetary Information.

Cost Sharing Requirements: No cost sharing is required for proposals submitted in response to this announcement.

C. Proposal Due Dates.

All proposals **MUST** be submitted by 5:00 PM local time, February 14. Copies of the signed proposal cover sheet (NSF Form 1207) must be postmarked (or provide a legible proof of mailing date assigned by the carrier) within five working days following the electronic submission of the proposal and forwarded to the following address:

National Science Foundation
DIS-FastLane Cover Sheet
4201 Wilson Blvd.
Arlington, VA 22230

A proposal may not be processed until the complete proposal (including signed Cover Sheet) has been received by NSF.

D. FastLane Requirements.

Proposers are required to prepare and submit proposals using the NSF FastLane system. Detailed instructions for proposal preparation and submission via FastLane are available at https://www.fastlane.nsf.gov/a1/newstan.htm.

Submission of Signed Cover Sheets. The signed paper copy of the proposal Cover Sheet (NSF Form 1207) should be forwarded to NSF within five working days following proposal submission in accordance with FastLane proposal preparation and submission instructions referenced above.

PROPOSAL REVIEW INFORMATION

A. Merit Review Criteria.

Reviews of proposals submitted to NSF are solicited from peers with expertise in the substantive area of the proposed research or education project. These reviewers are selected by program officers charged with the oversight of the review process. NSF invites the proposer to suggest, at the time of submission, the names of appropriate or inappropriate reviewers. Care is taken to ensure that reviewers have no conflicts with the proposer. Special efforts are made to recruit reviewers from non-academic institutions, minority serving institutions or adjacent disciplines to that principally addressed in the proposal.

Proposals will be reviewed against the following general merit review criteria established by the National Science Board. Following each criterion are potential considerations that the reviewer may employ in the evaluation. These are suggestions and not all will apply to any given proposal. Each reviewer will be asked to address only those that are relevant to the proposal and for which he/she is qualified to make judgments.

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 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?

PIs should address the following elements in their proposal to provide reviewers with the information necessary to respond fully to both NSF merit review criteria. NSF staff will give these factors careful consideration 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 learner 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 -- are 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.

B. Review Protocol and Associated Customer Service Standard.

All proposals are carefully reviewed by at least three other persons outside NSF who are experts in the particular field represented by the proposal. Proposals submitted in response to this announcement will be reviewed by both mail and panel review.

Reviewers will be asked to formulate a recommendation to either support or decline each proposal. A program officer assigned to manage the proposal's review will consider the advice of reviewers and will formulate a recommendation. In most cases, proposers will be contacted by the program officer after his or her recommendation to award or decline funding has been approved by his or her supervisor, the division director. This informal notification is not a guarantee of an eventual award. NSF will be able to tell applicants whether their proposals have been declined or recommended for funding within six months for 95 percent of proposals. The time interval begins on the proposal deadline or target date or from the date of receipt, if deadlines or target dates are not used by the program. The interval ends when the division director accepts the program officer's recommendation.

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 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 an 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 Officer does so at its own risk.

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 Division administering the program. Verbatim copies of reviews, not including the identity of the reviewer, will be provided automatically to the Principal Investigator.

B. Grant Award Conditions.

An NSF grant consists of: (1) the award letter, which includes any special provisions applicable to the grant 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 grant conditions, such as Grant General Conditions (NSF GC-1)* or Federal Demonstration Partnership (FDP) Terms and Conditions* and (5) any NSF brochure, program guide, announcement or other NSF issuance that may be incorporated by reference in the award letter. Electronic mail notification is the preferred way to transmit NSF grants to organizations that have electronic mail capabilities and have requested such notification from the Division of Grants and Agreements.

* These documents may be accessed electronically on NSF's Web site at: <http://www.nsf.gov/>. Paper copies may be obtained from the NSF Publications Clearinghouse, telephone 301-947-2722 or by e-mail from pubs@nsf.gov.

More comprehensive information on NSF Award Conditions is contained in the NSF *Grant Policy Manual* (GPM) Chapter II, (NSF 95-26) available electronically on the NSF Web site. The GPM is also available in paper copy by subscription from the Superintendent of Documents, Government Printing Office,

Washington, DC 20402. The GPM may be ordered through the GPO Web site at: <http://www.gpo.gov>. The telephone number at GPO for subscription information is (202) 512-1800.

C. Reporting Requirements.

For all multi-year grants (including both standard and continuing grants), the PI must submit an annual project report to the cognizant Program Officer at least 90 days before the end of the current budget period.

Within 90 days after expiration of a grant, the PI also is required to submit a final project report. Approximately 30 days before expiration, NSF will send a notice to remind the PI of the requirement to file the final project report. Failure to provide final technical reports delays NSF review and processing of pending proposals for that PI. PIs should examine the formats of the required reports in advance to assure availability of required data.

NSF has implemented a new electronic reporting system, available through FastLane, which permits electronic submission and updating of project reports, including information on: project participants (individual and organizational); activities and findings; publications; and other specific products and contributions. Reports will continue to be required annually and after the expiration of the grant, but PIs will not need to re-enter information previously provided, either with the proposal or in earlier updates using the electronic system.

Effective October 1, 1999, PIs are required to use the new reporting system for submission of annual and final project reports.

D. New Awardee Information.

If the submitting organization has never received an NSF award, it is recommended that the organization's appropriate administrative officials become familiar with the policies and procedures in the NSF *Grant Policy Manual* which are applicable to most NSF awards. The "Prospective New Awardee Guide" (NSF 99-78) includes information on: Administration and Management Information; Accounting System Requirements and Auditing Information; and Payments to Organizations with Awards. This information will assist an organization in preparing documents that NSF requires to conduct administrative and financial reviews of an organization. The guide also serves as a means of highlighting the accountability requirements associated with Federal awards. This document is available electronically on NSF's Web site at: <http://www.nsf.gov.cgi-bin/getpub/nsf9978>.

CONTACTS FOR ADDITIONAL INFORMATION

Inquiries concerning the ESH program may be directed to:

Dr. Steven Colman, Program Officer
Room 775, Division of Atmospheric Sciences
National Science Foundation
4201 Wilson Blvd.
Arlington, VA, 22230
Telephone 703.306.1527,
e-mail: scolman@nsf.gov.

Ms. Heather Benway
Office of Global Programs
National Oceanic and Atmospheric Administration
1100 Wayne Ave., Suite 1210
Silver Spring, MD 20910

Telephone 301.427.2089 x 113
e-mail: benway@ogp.noaa.gov

For questions related to use of FastLane, contact Kandace Binkely, 703-306-1580, e-mail kbinkley@nsf.gov.

OTHER PROGRAMS OF INTEREST

The NSF Guide to Programs is a compilation of funding for research and education in science, mathematics, and engineering. General descriptions of NSF programs, research areas, and eligibility information for proposal submission are provided in each chapter. Many NSF programs offer announcements concerning specific proposal requirements. To obtain additional information about these requirements, contact the appropriate NSF program offices listed in Appendix A of the GPG. Any changes in NSF's fiscal year programs occurring after press time for the Guide to Programs will be announced in the NSF Bulletin, available monthly (except July and August), and in individual program announcements. The Bulletin is available electronically via the NSF Web Site at http://www.nsf.gov. The direct URL for recent issues of the Bulletin is http://www.nsf.gov/od/lpa/news/publicat/bulletin/bulletin.htm Subscribers can also sign up for NSF's Custom News Service to find out what funding opportunities are available.

ABOUT THE NATIONAL SCIENCE FOUNDATION

The National Science Foundation (NSF) funds research and education in most fields of science and engineering. Grantees are wholly responsible for conducting their project activities and preparing the results for publication. Thus, the Foundation does not assume responsibility for such findings or their interpretation.

NSF welcomes proposals from all qualified scientists, engineers and educators. The Foundation strongly encourages women, minorities, and persons with disabilities to compete fully in its programs. In accordance with federal statutes, regulations, and NSF policies, no person on grounds of race, color, age, sex, national origin, or disability shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving financial assistance from NSF (unless otherwise specified in the eligibility requirements for a particular program).

Facilitation Awards for Scientists and Engineers with Disabilities (FASED) provide funding for special assistance or equipment to enable persons with disabilities (investigators and other staff, including student research assistants) to work on NSF-supported projects. See the program announcement or contact the program coordinator at (703) 306-1636.

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 regarding NSF programs, employment, or general information. TDD may be accessed at (703) 306-0090 or through FIRS on 1-800-877-8339.

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; 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 review process; to applicant 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 needing information as part of the review process or in order to coordinate programs; 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," 63 Federal Register 267 (January 5, 1998), and NSF-51, "Reviewer/Proposal File and Associated Records," 63 Federal Register 268 (January 5, 1998). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

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 this burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to: Suzanne H. Plimpton, Reports Clearance Officer; Division of Administrative Services; National Science Foundation; Arlington, VA 22230.

YEAR 2000 REMINDER

In accordance with Important Notice No. 120 dated June 27, 1997, Subject: Year 2000 Computer Problem, NSF awardees are reminded of their responsibility to take appropriate actions to ensure that the NSF activity being supported is not adversely affected by the Year 2000 problem. Potentially affected items include: computer systems, databases, and equipment. The National Science Foundation should be notified if an awardee concludes that the Year 2000 will have a significant impact on its ability to carry out an NSF funded activity. Information concerning Year 2000 activities can be found on the NSF web site at http://www.nsf.gov/oirm/y2k/start.htm .

The National Science Foundation is committed to making all of the information we publish easy to understand. If you have a suggestion about how to improve the clarity of this document or other NSF-published materials, please contact us at plainlanguage@nsf.gov.

CFDA # 47.050 Geosciences
47.078 Office of Polar Programs
11.431 NOAA Global Change Research
OMB# 3145-0058
NSF 00-11 (replaces NSF 97-161)
(Electronic Dissemination Only)