

# Development of Technologies for Coastal Observing Systems and the Study of Benthic Boundary Layer Processes

---

## Program Solicitation

NSF 05-556



**National Science Foundation**  
Directorate for Geosciences  
Division of Ocean Sciences

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

May 18, 2005

## SUMMARY OF PROGRAM REQUIREMENTS

---

### General Information

---

#### Program Title:

Development of Technologies for Coastal Observing Systems and the Study of Benthic Boundary Layer Processes

#### Synopsis of Program:

The goal of this solicitation is to advance interactive observing technologies and understanding of the coastal benthic boundary layer (BBL - defined here as the portion of the water column and surface sediments impacted by the presence of the sediment-water interface). The coastal BBL is a defining characteristic of coastal ecosystems and yet is among the most understudied components of the coastal environment. In part, a more detailed understanding of the BBL has been hindered by the inability to directly observe BBL processes that occur at a wide range of temporal scales and may have characteristic controlling thresholds. Furthermore, the BBL is not observable via most remote sensing technologies, such as satellite- and aircraft-mounted sensor systems and shore-based HF radar arrays, which focus on the sea surface.

The strategy adopted here is that intellectual and applied technological advances proceed most effectively when they occur in concert. This solicitation therefore requires a particular focus on both the development of technologies and the conduct of research that will improve understanding of BBL processes. To accomplish this goal, one or more pilot/testbed study sites will be established. Successful proposals will demonstrate a plan that leads to advances in understanding of BBL processes through advances in sensors, instruments, platforms and power and/or communications technologies for use in coastal observing research. The development and enhancement of new and existing technologies are needed to investigate coastal processes at appropriate temporal and spatial scales. The scientific rationale for the focus on coastal benthic exchange dynamics has been outlined at a community workshop and in a subsequent report (Reimers et al. 2004) on benthic boundary layer processes organized by the NSF's Division of Ocean Sciences Coastal Ocean Processes (CoOP) Program.

#### Cognizant Program Officer(s):

- Alexandra Isern, Program Director, Directorate for Geosciences, Division of Ocean Sciences, 725 N, telephone: (703) 292-8583, fax: (703) 292-9085, email: [aisern@nsf.gov](mailto:aisern@nsf.gov)

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

- 47.050 --- Geosciences

## Eligibility Information

---

- **Organization Limit:** Proposals will be accepted from U.S. universities and colleges, U.S. non-profit, non-academic organizations, and for-profit organizations.
- **PI Eligibility Limit:** None Specified.
- **Limit on Number of Proposals:** None Specified.

## Award Information

---

- **Anticipated Type of Award:** Standard or Continuing Grant
- **Estimated Number of Awards:** 2 to 6
- **Anticipated Funding Amount:** \$5,500,000 over three years, beginning in FY 2005, subject to the availability of funds. The size of an award will depend on the research plan proposed. Successful proposals from this solicitation will be awarded for three years

## Proposal Preparation and Submission Instructions

---

### A. Proposal Preparation Instructions

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

### B. Budgetary Information

- **Cost Sharing Requirements:** Cost Sharing is not required.
- **Indirect Cost (F&A) Limitations:** Not Applicable.
- **Other Budgetary Limitations:** Not Applicable.

### C. Due Dates

- **Full Proposal Deadline Date(s)** (due by 5 p.m. proposer's local time):  
May 18, 2005

## Proposal Review Information

---

- **Merit Review Criteria:** National Science Board approved criteria apply.

## Award Administration Information

---

- **Award Conditions:** Standard NSF award conditions apply.
- **Reporting Requirements:** Standard NSF reporting requirements apply.

## TABLE OF CONTENTS

---

### Summary of Program Requirements

- I. [Introduction](#)
- II. [Program Description](#)
- III. [Eligibility Information](#)
- IV. [Award Information](#)
- V. [Proposal Preparation and Submission Instructions](#)
  - A. [Proposal Preparation Instructions](#)

- B. Budgetary Information
- C. Due Dates
- D. FastLane Requirements

VI. **Proposal Review Information**

- A. NSF Proposal Review Process
- B. Review Protocol and Associated Customer Service Standard

VII. **Award Administration Information**

- A. Notification of the Award
- B. Award Conditions
- C. Reporting Requirements

VIII. **Contacts for Additional Information**

IX. **Other Programs of Interest**

---

**I. INTRODUCTION**

Most emergent remote-sensing technologies, including satellite-mounted sensors and HF radar arrays, focus on the sea surface. However, interaction with the seafloor is a controlling characteristic of coastal environments, resulting in unique and intensified processes that define the coastal ecosystem. A comprehensive understanding of the coastal BBL will not come from existing remote sensing, nor from the study of isolated processes in this complex environment. Rather, the physics, geology, chemistry and biology must be interpreted holistically, in situ and over process-appropriate length and time scales.

A high priority within the Division of Ocean Sciences (OCE) at NSF is the development of technologies to support in situ observing systems to investigate ocean processes at appropriate temporal and spatial scales and to deploy these observatories at optimal locations to facilitate this research. This Program Solicitation, the first to be released in conjunction with OCE's Ocean Research Interactive Observatory Networks (ORION) Program, has as its primary goal the development of those technologies that will enable advances in the understanding of benthic boundary layer (BBL) processes. To accomplish this goal, the establishment of prototype or testbed coastal observing networks to advance coastal observing science is necessary. Successful proposals will demonstrate a plan that leads to advances in understanding of BBL processes and advances in sensors, instruments, platforms, power and/or communications technologies for use in coastal observing research. The ORION program was established by NSF to operate and manage existing and future ocean observing sites, some of which will be constructed by the MREFC Ocean Observatories Initiative (OOI). The ORION Program will coordinate the science driving the construction of this OOI research observatory network as well as the operation and maintenance of the infrastructure; development of instrumentation and mobile platforms and their incorporation into the observatory network; and planning, coordination, and implementation of educational and public outreach activities. Background information about the OOI and ORION Program is available at [www.orionprogram.org](http://www.orionprogram.org).

The focus on benthic boundary layer processes has been developed from input obtained at a CoOP Program workshop held in April of 2004. CoOP is an interdisciplinary program whose goal is to obtain a quantitative understanding of the processes that control the cross-shelf transport, transformation and fate of biological, geological and chemical materials on continental margins. There is a critical need to develop a comprehensive understanding of the dynamics of material exchange, transport and transformations within the BBL, defined here to comprise the bottom boundary layer of the water column and surface sediment layer. The dynamic complexity of the BBL system coupled with a paucity of appropriate technology have been critical obstacles to studies of the linkages between hydrological and meteorological forcing and the processes of particle and solute transformation, transport and exchange in the coastal BBL. Furthermore, technology development to advance our capability to observe BBL processes supports broader efforts to implement interactive, multiplatform ocean observing systems. This solicitation will facilitate the development of the interactive technology required. Background information about CoOP and electronic copies of the Coastal Benthic Exchange Dynamics (CBED) Workshop Report are available at <http://www.skio.peachnet.edu/coop>.

---

**II. PROGRAM DESCRIPTION**

Oceanography is at a pivotal crossroad. To significantly advance the understanding of ocean processes and ecosystems, expeditionary research must be augmented by real-time remote observations that can supply measurements on a wider range of space and time scales than achieved previously and can direct shipboard and other sampling activities to specific targets and features. Processes below the sea surface that are dynamic and spatially variable need no longer be judged unfathomable. This change of perspective is particularly important for benthic studies where many processes may have distinct thresholds and specific, episodic events may dominate mean transport and transformation. Studies of benthic

boundary layer dynamics and the development of sea floor observing technologies will best succeed when they proceed in concert.

Interactions with the seafloor play a determining role in coastal dynamics and ecosystems. For example, friction with the bottom controls internal wave and current-generated turbulence; solute exchange across the sediment-water interface impacts geochemical cycles, nutrient inputs and biological production; and sediment resuspension and bedload transport are important pathways for oceanic-shelf and estuarine-shelf material exchange. Because the latter is controlled by well-defined thresholds where rare, energetic events often dominate over more common conditions, a continuous observational presence is necessary for significant advancement. However, most of the emerging remote sensing technologies focus on the sea surface. To better advance understanding of coastal dynamics, the development of benthic sensing systems is required.

Coastal benthic exchange dynamics are linked to a variety of marine environmental issues of increasing ecological, economic and societal importance. Changes in climate, sea level, storm frequency, nutrient inputs, fishing effort, and utilization of shelf mineral resources are altering seafloor habitats and benthic feedbacks to essential marine food webs. Unfortunately, due to the responsiveness of seafloor processes to a wide variety of periodically varying external factors including solar irradiance, tides, and waves, there is at present a lack of quantitative data for measuring change and assessing the health of coastal environments worldwide. This lack of information is especially acute when scientists or resource managers are asked to predict short- and long-term benthic reactions to natural episodic (e.g., storm) disturbances and anthropogenic impacts (e.g., trawl or dredge fishing).

### Technological and Research Program Goals

The timing is ideal for a testbed research initiative focused on the linkages between external meteorological and hydrological forces and the processes of particle and solute transformation, transport, and exchange in the coastal ocean BBL. The seafloor is an integral component of coastal ecosystems, exerting considerable control over the biogeochemical and physical dynamics and biological communities that shape these environments. However, a comprehensive understanding of BBL processes cannot be approached with current remote sensing technologies.

The recommendations contained in the CBED report include research focusing on the importance of:

- *Physical Disturbance and Sediment Dynamics* in establishing, maintaining or altering benthic habitats,
- *Benthic-Pelagic Coupling* for understanding coastal biogeochemical cycles especially in regions of permeable sediments that may exhibit porewater advection and groundwater fluxes,
- *Benthic Biological Community Structure* as both a means to characterize habitats and a theme recognizing biological agents that affect material transport and transformation processes, and
- *Mechanistic Models* capable of describing mass transfers and transformations associated with physical and chemical gradients across the sediment-water interface, while also representing processes at disparate scales that can be coupled or nested to describe ecosystem-wide responses.

Furthermore, the CBED report recommends continued development and implementation of benthic observing technologies, especially those that provide non-intrusive estimates of solute and particulate transport and organism activity.

### Approach

No specific geographic location is recommended in this solicitation. Consequently, the successful proposals will justify their location or locations of choice by addressing relevant portions of the following guidelines in the context of their proposed study sites.

The approach adopted in this solicitation is that intellectual and applied technological advances are most successful when they occur in concert. Proposals should represent a balance between observing technology development and fundamental research and address, at a minimum, some portion of the following focus areas.

- **Projects should be interdisciplinary in order to quantify the dynamics of the BBL system and its response - in the widest sense - to various forms of both natural and anthropogenic disturbance.** Because dynamics will vary with shelf characteristics such as bathymetry, sediment grain size and permeability, studies could be distributed among contrasting coastal regions. Specific research examples include the need to further examine the relationships among flow fields, entrainment, and sediment biogeochemical processes in cohesive sediments, and porewater advection, filtration and particle mixing in coarse-grained sediments. Across diverse seafloor habitats, physical factors such as waves could be compared to macrofauna and meiofauna, groundwater flow, as well as mobile fishing gear, as agents causing porewater and particle transport.
- **Because each measurement technique is associated with a limited range of spatial and temporal measurement scales, a multiplatform holistic approach is recommended** in which ships, satellites, observatory moorings, autonomous vehicles, and/or other technologies are employed to optimize the range of space and time

scales observed. Continued development of BBL sensors and deployment platforms is recommended, especially for those techniques that permit non-intrusive determinations of organism activities and abundances, and seafloor solute and particulate exchange. There is a strategic need to integrate observatory and ship-based research strategies.

- **The fluxes of oxidants, nutrients, essential trace metals and organic matter that determine relative roles of the benthic and pelagic sub-systems could be studied at key horizons in the BBL, and in concert, to advance understanding of contrasting coastal ecosystems.** Studies of processes and biological community characteristics that determine benthic primary and secondary production and remineralization are encouraged.
- **The structure and function of BBL microbial communities catalyzing organic matter decomposition could be addressed,** ideally across gradients in sediment characteristics, organic matter loading, temperature, and other relevant environmental parameters. Continued development of molecular biological techniques for use in sediments is especially encouraged.
- **Experimental studies should be designed to improve our understanding of process dependence** on measurable system variables such as temperature, light, flow, particle concentration, wave height and ripple spacing, leading to reliable model parameterizations.
- **Comprehensive, interdisciplinary, mechanistic BBL models bridging the sediment-water interface are needed** for incorporation into full ecosystem models that include larger-scale dynamics and link coastal models to global carbon and nutrient models. These models should represent processes at disparate scales, in a manner that is standardized (i.e., with a uniform set of exchange variables and interpolators), distributed (i.e., consisting of independent modules communicating through a central server), and coupled (i.e., including multi-model feedback with standard interpolators).

Based on the recommendations from the NSF-CoOP CBED workshop report and the CoOP Scientific Steering Committee, proposals are being accepted for a coordinated study of coastal benthic exchange dynamics and the development of necessary technologies. This initiative anticipates supporting integrated, multi-investigator, interdisciplinary programs of modeling, process studies and technology development and implementation with the overall goal of improving our understanding of the linkages between external meteorological and hydrological forces and the processes of particle and solute transformation, transport and exchange in the coastal ocean BBL. Proposals from teams of investigators are encouraged, with clear identification of individual(s) having responsibility for program integration and synthesis. Proposed studies should be interdisciplinary and present a balanced and well-rationalized scientific plan for addressing the goals described in the CBED report.

Studies may be proposed by submission of several collaborative or individual proposals having some common objectives from different PIs, or by an omnibus proposal that contains various multi-disciplinary components. In either case, a common overview statement of research approach and objectives should be prepared. The CoOP Office (<http://www.skio.peachnet.edu/coop>) at the Skidaway Institute of Oceanography will facilitate the exchange of information among PIs wishing to develop proposals in response to this Solicitation. The CoOP website will provide occasional postings and other useful information.

The exact location(s) of study will be science-driven and determined by successful proposals. However, the study site(s) must be appropriate for the scientific objectives outlined in the CBED workshop and report. Site selection(s) should also consider potential cooperative research benefits from other NSF programs and other U.S. agencies.

### III. ELIGIBILITY INFORMATION

---

Proposals will be accepted from U.S. universities and colleges, U.S. non-profit, non-academic organizations, and for-profit organizations.

### IV. AWARD INFORMATION

---

NSF estimates supporting 2 to 6 standard or continuing grants from this competition. A total of approximately \$5.5 million is anticipated, pending the availability of funds, over three years beginning in FY 2005. The size of an award will depend on the research plan proposed. Successful proposals from this solicitation will be awarded for three years.

### V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

---

---

## A. Proposal Preparation Instructions

---

### Full Proposal Instructions:

Proposals submitted in response to this program announcement/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/cgi-bin/getpub?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](mailto:pubs@nsf.gov).

Proposers are reminded to identify the program announcement/solicitation number (05-556) in the program announcement/solicitation block on the proposal Cover Sheet. Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.

---

## B. Budgetary Information

---

### Cost Sharing:

Cost sharing is not required in proposals submitted under this Program Solicitation.

---

## C. Due Dates

---

Proposals must be submitted by the following date(s):

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

May 18, 2005

---

## D. FastLane Requirements

---

Proposers are required to prepare and submit all proposals for this announcement/solicitation through the FastLane system. Detailed instructions for proposal 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](mailto: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 announcement/solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this announcement/solicitation.

*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. Proposers are no longer required to provide a paper copy of the signed Proposal Cover Sheet to NSF. Further instructions regarding this process are available on the FastLane Website at: <http://www.fastlane.nsf.gov>

---

## VI. PROPOSAL REVIEW INFORMATION

---

### A. NSF Proposal Review Process

---

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.

The National Science Board approved revised criteria for evaluating proposals at its meeting on March 28, 1997 ([NSB 97-72](#)). All NSF proposals are evaluated through use of the two merit review criteria. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities.

On July 8, 2002, the NSF Director issued [Important Notice 127](#), Implementation of new Grant Proposal Guide Requirements Related to the Broader Impacts Criterion. This Important Notice reinforces the importance of addressing both criteria in the preparation and review of all proposals submitted to NSF. NSF continues to strengthen its internal processes to ensure that both of the merit review criteria are addressed when making funding decisions.

In an effort to increase compliance with these requirements, the January 2002 issuance of the GPG incorporated revised proposal preparation guidelines relating to the development of the Project Summary and Project Description. Chapter II of the GPG specifies that Principal Investigators (PIs) must address both merit review criteria in separate statements within the one-page Project Summary. This chapter also reiterates that broader impacts resulting from the proposed project must be addressed in the Project Description and described as an integral part of the narrative.

Effective October 1, 2002, NSF will return without review proposals that do not separately address both merit review criteria within the Project Summary. It is believed that these changes to NSF proposal preparation and processing guidelines will more clearly articulate the importance of broader impacts to NSF-funded projects.

The two National Science Board approved merit review criteria are listed below (see the [Grant Proposal Guide](#) Chapter III.A for further information). 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 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 the prior work.) To what extent does the proposed activity suggest and explore creative and original concepts? How well conceived and organized is the proposed activity? Is there sufficient access to resources?

**What are the broader impacts of the proposed activity?**

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

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

***Integration of Research and Education***

One of the principal strategies in support of NSF's goals is to foster integration of research and education through the programs, projects, and activities it supports at academic and research institutions. These institutions provide abundant opportunities where individuals may concurrently assume responsibilities as researchers, educators, and students and where all can engage in joint efforts that infuse education with the excitement of discovery and enrich research through the diversity of learning perspectives.

***Integrating Diversity into NSF Programs, Projects, and Activities***

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

**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/solicitation will be reviewed by Ad Hoc Review followed by 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.

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 Director. In addition, the proposer will receive an explanation of the decision to award or decline funding.

NSF is striving to be able to tell proposers whether their proposals have been declined or recommended for funding within six months. The time interval begins on the closing date of an announcement/solicitation, or the date of proposal receipt, whichever is later. 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 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 Division 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.A. 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 (NSF-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 agreement awards also are administered in accordance with NSF Cooperative Agreement Terms and Conditions (CA-1). Electronic mail notification is the preferred way to transmit NSF awards 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 Website at [http://www.nsf.gov/home/grants/grants\\_gac.htm](http://www.nsf.gov/home/grants/grants_gac.htm). Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from [pubs@nsf.gov](mailto:pubs@nsf.gov).

More comprehensive information on NSF Award Conditions is contained in the NSF *Grant Policy Manual* (GPM) Chapter II, available electronically on the NSF Website at <http://www.nsf.gov/cgi-bin/getpub?gpm>. The GPM is also for sale through the Superintendent of Documents, Government Printing Office (GPO), Washington, DC 20402. The telephone number at GPO for subscription information is (202) 512-1800. The GPM may be ordered through the GPO Website at <http://www.gpo.gov>.

---

### 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 the expiration of an award, the PI also is required to submit a final project report. Failure to provide final technical reports delays NSF review and processing of pending proposals for the PI and all Co-PIs. 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. This system 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. PIs will not be required to re-enter information previously provided, either with a proposal or in earlier updates using the electronic system.

---

## VIII. CONTACTS FOR ADDITIONAL INFORMATION

General inquiries regarding this program should be made to:

- Alexandra Isern, Program Director, Directorate for Geosciences, Division of Ocean Sciences, 725 N, telephone: (703) 292-8583, fax: (703) 292-9085, email: [aisern@nsf.gov](mailto:aisern@nsf.gov)

For questions related to the use of FastLane, contact:

- Kandace S. Binkley, Associate Program Director, Directorate for Geosciences, Division of Ocean Sciences, 725 N, telephone: (703) 292-8583, fax: (703) 292-9085, email: [kbinkley@nsf.gov](mailto:kbinkley@nsf.gov)

## IX. OTHER PROGRAMS OF INTEREST

---

The NSF *Guide to Programs* is a compilation of funding for research and education in science, mathematics, and engineering. The NSF *Guide to Programs* is available electronically at <http://www.nsf.gov/cgi-bin/getpub?gp>. General descriptions of NSF programs, research areas, and eligibility information for proposal submission are provided in each chapter.

Many NSF programs offer announcements or solicitations concerning specific proposal requirements. To obtain additional information about these requirements, contact the appropriate NSF program offices. Any changes in NSF's fiscal year programs occurring after press time for the *Guide to Programs* will be announced in the NSF *E-Bulletin*, which is updated daily on the NSF Website at <http://www.nsf.gov/home/ebulletin>, and in individual program announcements/solicitations. Subscribers can also sign up for NSF's *Custom News Service* (<http://www.nsf.gov/home/cns/start.htm>) to be notified of new funding opportunities that become available.

## ABOUT THE NATIONAL SCIENCE FOUNDATION

---

The National Science Foundation (NSF) funds research and education in most fields of science and engineering. Awardees 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, although some programs may have special requirements that limit eligibility.

*Facilitation Awards for Scientists and Engineers with Disabilities* (FASSED) 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 GPG Chapter II, Section D.2 for instructions regarding preparation of these types of proposals.

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](mailto: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; 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 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.

An agency may not conduct or sponsor, and a person is not required to respond to an information collection unless it displays a valid 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 this burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to: Suzanne Plimpton, Reports Clearance Officer, Division of Administrative Services, National Science Foundation, Arlington, VA 22230.

OMB control number: 3145-0058.

[Website Policies and Links](#) | [Privacy](#) | [FOIA](#) | [Help](#) | [Contact NSF](#) | [Contact Web Master](#) | [SiteMap](#)



The National Science Foundation, 4201 Wilson Boulevard, Arlington, Virginia 22230, USA  
Tel: (703) 292-5111, FIRS: (800) 877-8339 | TDD: (800) 281-8749

Last Updated:  
02/02/05  
[Text Only](#)