

# **NSF/USDOT Partnership for Exploratory Basic Research on Information and Communications Systems for Surface Transportation (ICSST)**

---

## **Program Solicitation**

**NSF 03-556**

**Replaces Document NSF 02-089**



## **National Science Foundation**

Directorate for Engineering

Division of Civil and Mechanical Systems

Division of Design, Manufacture, and Industrial Innovation

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

June 11, 2003

Note: this is a deadline, not a target date. Proposals received after this time will not be reviewed and will not be considered for funding.

## **SUMMARY OF PROGRAM REQUIREMENTS**

---

### **General Information**

---

**Program Title:**

NSF/USDOT Partnership for Exploratory Basic Research on Information and Communications Systems for Surface Transportation (ICSST)

**Synopsis of Program:**

The Directorate for Engineering of the National Science Foundation (NSF) announces the third year of this program jointly sponsored with the U.S. Department of Transportation (USDOT) for Exploratory Basic Research on Information and Communications Systems for Surface Transportation. The NSF/USDOT program offers a flexible vehicle for pursuing potentially high risk and high payoff research. Research topics must target innovative strategies for exploiting state-of-the-art information and information/communication technologies in surface transportation systems to meet the challenges and constraints associated with mobility. One aspect of this program is intended to foster innovative uses of technology in all modes of surface transportation in a spirit similar to Intelligent Transportation Systems. It is also meant to spur integrative, multidisciplinary research needed to understand and manage the complexity and vulnerability of surface transportation systems and their interactions with natural, social, and economic systems. Note significant changes in eligibility and funding from last year.

**Cognizant Program Officer(s):**

- Miriam Heller, Program Director, Directorate for Engineering, Division of Civil & Mechanical Systems, 545 S, telephone: (703) 292-8360, fax: (703) 292-9053, email: [mheller@nsf.gov](mailto:mheller@nsf.gov)
- Dennis Wenger, Program Director, Directorate for Engineering, Division of Civil & Mechanical Systems, 545 S, telephone: (703) 292-7014, fax: (703) 292-9053, email: [dwenger@nsf.gov](mailto:dwenger@nsf.gov)
- Ronald L. Rardin, Program Director, Directorate for Engineering, Division of Design, Manufacture, & Industrial Innovation, 550 S, telephone: (703) 292-7081, fax: (703)292-9056, email: [rrardin@nsf.gov](mailto:rrardin@nsf.gov)
- Paul J. Werbos, Program Director, Directorate for Engineering, Division of Electrical & Communications Systems, 675 S, telephone: (703) 292-8339, fax: (703) 292-9147, email: [pwerbos@nsf.gov](mailto:pwerbos@nsf.gov)
- Nicholas L. Clesceri, Program Director, Directorate for Engineering, Division of Bioengineering & Environmental Systems, 565 S, telephone: (703) 292-7940, fax: (703) 292-9098, email: [nclescer@nsf.gov](mailto:nclescer@nsf.gov)
- Richard Aspinall, Program Director, Directorate for Social, Behavioral & Economic Sciences, Division of Behavioral and Cognitive Sciences, 995 N, telephone: (703) 292-4995, fax: (703) 292-9068, email: [raspinal@nsf.gov](mailto:raspinal@nsf.gov)
- Lawrence E. Brandt, Program Manager, Directorate for Computer & Information Science & Engineering, Division of Experimental and Integrative Activities, 255 S, telephone: (703) 292-8980, fax: (703) 292-9030, email: [lbrandt@nsf.gov](mailto:lbrandt@nsf.gov)

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

- 47.041 --- Engineering

#### Eligibility Information

---

- **Organization Limit:** Proposals may be submitted by U.S. academic institutions eligible under the NSF [Grant Proposal Guide](#) in support of individual investigators or small groups. Synergistic partnerships with industries and related organizations are encouraged when appropriate; however, NSF awards will be made only to U.S. academic institutions.
- **PI Eligibility Limit:** None Specified.
- **Limit on Number of Proposals:** None Specified.

#### Award Information

---

- **Anticipated Type of Award:** Standard Grant
- **Estimated Number of Awards:** 7 to 12
- **Anticipated Funding Amount:** \$1,150,000 in FY2003 subject to availability of funds and the quality of the proposals.

#### Proposal Preparation and Submission Instructions

---

##### A. Proposal Preparation Instructions

- **Full Proposal Preparation Instructions:** This solicitation contains information that deviates from 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:** Other budgetary limitations apply. Please see the full text of this solicitation for further information.

### **C. Due Dates**

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

June 11, 2003

Note: this is a deadline, not a target date. Proposals received after this time will not be reviewed and will not be considered for funding.

### **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

---

The Directorate for Engineering of the National Science Foundation (NSF) and the U.S. Department of Transportation (USDOT) announce the third year of their joint research program for Exploratory Basic Research on Information and Communications Systems for Surface Transportation (ICSST). This program encourages researchers in the scientific and engineering disciplines as well as the social, behavioral, and economic sciences to pursue basic research ideas aimed at meeting long-term future needs for surface transportation. The goal of the NSF/USDOT partnership is to foster a basic research agenda aimed at discovering innovative ways for information and information/communication technologies to be integrated into surface transportation systems in order to meet the challenges and constraints related to congestion, safety, land use, energy, and environment. This program is intended to: 1) encourage innovation and innovative uses of technology in all modes of surface transportation aimed at mobility; 2) expand the knowledge base needed to manage the complexity and the vulnerability of surface transportation systems, e.g., by including interactions with other systems; and 3) offer opportunities to address technological as well as nontechnological influences by engaging "supporting" disciplines, such as computer science and engineering, natural and social sciences, operations research, systems engineering, and telecommunications.

To complement the substantial resources available for research aimed at incrementally improving today's surface transportation systems and related information technologies, this initiative specifically encourages high risk approaches.

This program will define opportunities and new directions for basic research in surface transportation. It will expand the research community in surface transportation to include broad disciplinary coverage and multidisciplinary teams.

## II. PROGRAM DESCRIPTION

---

### BACKGROUND

Surface transportation systems of the future will require radically different approaches if they are to meet the inexorably increasing challenges of traffic congestion, safety, an aging driver population, deteriorating roadway infrastructure, land use restrictions, dependence on nonrenewable fuels, and environmental degradation. These approaches must reflect, adapt to, and exploit advances in information and communications technologies, the changing regulatory climate (e.g., deregulation), longer term economic thinking, and a growing awareness of the role of human, social and cultural values in transportation decision-making.

Most applied research aimed at advancing information and communications technologies for surface transportation currently is conducted through the U.S. Department of Transportation's (USDOT) Intelligent Transportation Systems Joint Program Office as well as the Federal Highway Administration, Federal Transit Administration, and the state DOTs. USDOT is also developing agendas for new short and medium research initiatives with the Transportation Research Board, the Institute of Transportation Engineers, and the Intelligent Transportation Systems of America. These programs, however, focus on short-term change and mirror the 5-year planning horizon governing the Intermodal Surface Transportation and Equity Acts (ISTEA, 1991 and TEA-21, 1997) as well as the mission-orientation of the sponsoring agencies.

The National Science Foundation has been a source of basic research funding for transportation research. Without a dedicated program, transportation research has been sponsored by the Directorate for Engineering through the Divisions of Civil and Mechanical Systems (CMS), Design, Manufacture and Industrial Innovation (DMII), and Electrical and Communications Systems (ECS); by the Directorate for Computer and Information Systems Engineering (CISE); and by the Directorate for Social, Behavioral, and Economic Sciences (SBE).

The result of this parallel pursuit of basic and applied research was the subject of discussion at the NSF/USDOT workshop held at the University of Illinois at Chicago in October 2000, which explored long-term, basic research needs in surface transportation systems. The report from this workshop can be accessed at [http://www.utc.uic.edu/~mcneil/Workshop\\_report.pdf](http://www.utc.uic.edu/~mcneil/Workshop_report.pdf). This workshop served to coalesce current thinking in the field by researchers and practitioners from a wide array of disciplines. Proposers may want to consider the recommendations from this workshop in preparing their proposals for this solicitation. Additionally, proposers are directed toward the NSF Award Abstracts Database, <https://www.fastlane.nsf.gov/a6/A6AwardSearch.htm>, for information on previous years awards to ICSST.

## RESEARCH FOCUS

Advances in information and communications technologies have been radically changing the way Americans manufacture, provide business services, educate, recreate, and communicate. Equally radical changes in the transportation of people and goods should be anticipated. These changes may exacerbate or ameliorate the current trends in surface transportation toward growing congestion and associated declines in safety, dangerously increasing consumption of non-renewable fuels, and environmental quality.

Surface transportation systems for the purpose of this solicitation include any mode of mobile surface transportation, e.g., personal use vehicles, commercial vehicles, and public transit. Other modes, such as marine transport, and stationary built infrastructure should only be considered as ancillary areas, linked to focused research on mobile surface transportation as defined previously. *Proposals focused on the built environment will be returned without review.*

The objective of this NSF/USDOT Partnership is to support exploratory research that

- Targets the strategies for developing and deploying new information and communications technologies with the potential to advance surface transportation systems operations and offer substantial enhancements in capacity utilization, safety, resource use, or environmental impact.
- Expands and verifies our understanding of the impact of planning, engineering, and operations policies on surface transportation systems as well as on the constructed, natural, and social systems with which they interact.
- Seeks dramatic breakthroughs in fundamental concepts of surface transportation provision, including the introduction of new, technology-based ways to meet the functional demands for services, and including new modes and new paradigms of transportation.

To achieve these objectives, proposals are invited that follow *technical themes* focused on the use of information and communications technologies to support integrated surface transportation systems operation (e.g., innovative vehicular navigation systems with specialized computer-human interfaces; virtual reality systems for training, evaluation and analysis and operations); systems integration (e.g., centralized ground control systems, distributed travel management and optimization, real-time pricing, dynamic routing, management of unplanned or extreme events, coordinated mobile communication and road infrastructure systems, and new technologies to move goods in congested areas); and enhanced data and analysis tools (e.g., improved measurement/metrics/standards, data fusion and management, integrated sensing and collection, and advanced modeling and simulation).

Proposals are also sought that augment the technical themes with *nontechnical themes* to address institutional issues (e.g., information ownership and privacy), equity issues (e.g., the interplay between surface transportation systems, demographics, economics, cultural and social values), and finally impact assessment and analysis (particularly as related to emerging trends in e-commerce, deregulation of transit and highway systems, environmental constraints, and economic variability).

## EXPLORATORY RESEARCH

Proposed research must be exploratory in nature, relatively short in duration, and intended to test high risk/high payoff research ideas. Within the proposal, the investigator(s) must demonstrate state-of-the-art knowledge in the domain and differentiate the proposed work from current research in the area. Investigators are encouraged to consult the NSF Award Abstracts Database (<https://www.fastlane.nsf.gov/a6/A6AwardSearch.htm>) and TRB's Transportation Research Information Service (<http://199.79.179.82/sundev/search.cfm>) to avoid proposing duplicative work. *Proposals focused on research perceived to be duplicative of or incremental to on-going research in the domain will be returned without review.* Proposals must be hypothesis-driven, with clearly stated objectives. The research plan should clearly explain methodologies to be used to test the hypothesis, resources and scheduling. Experts as well as generalists will be included in the review of proposals so ideas must be clearly understandable by a range of levels of expertise.

## DISTINGUISHABLE RESEARCH EFFORTS

The limited funds and goals of the ICSST initiative make it essential that proposed research is based on new investigations that are distinguishable from ongoing efforts -- especially from research activities already sponsored by NSF, DOT, and other agencies. Promising ideas and topics that have not been fully explored are welcome from all qualified researchers. ICSST support should not be sought mainly to supplement research efforts that are already well established. The investigator(s) must describe how the proposed

research differs from current and related efforts.

### III. ELIGIBILITY INFORMATION

---

Proposals may be submitted by U.S. academic institutions eligible under the NSF [Grant Proposal Guide](#) in support of individual investigators or small groups. Synergistic partnerships with industries and related institutions are encouraged when appropriate; however, NSF awards will be made only to U.S. academic institutions. Only one proposal may be submitted by any researcher as either Principal Investigator or co-Principal Investigator. Collaborative proposals from researchers at two or more institutions planning to work jointly on proposed research are allowed.

### IV. AWARD INFORMATION

---

The program will support basic research for awards ranging from a maximum of \$100,000 for single investigator proposals and a maximum of \$150,000 for multiple investigator proposals. The award duration may not exceed 18 months. The awards target exploratory research, intended to test high risk/high payoff research ideas. The estimated program budget, number of awards and average award size/duration are subject to the availability of funds. NSF anticipates funds of approximately \$1.15 million in FY2003 subject to availability. USDOT is expected to contribute \$500,000 of these funds, and qualified USDOT personnel will participate in the review process.

### 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).

The program announcement/solicitation contains deviations from the standard Grant Proposal Guide (GPG) proposal preparation guidelines.

On the Cover Sheet (NSF Form 1207) prepared for FastLane submission, the proposal title must start with "**NSF/USDOT.**"

Proposers are reminded to identify the program announcement/solicitation number (03-556) 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.

##### Other Budgetary Limitations:

Other budgetary limitations apply. Award amounts are limited to a maximum of \$100,000 for single investigator proposals and \$150,000 for multiple investigator proposals. The award duration may not exceed 18 months.

### 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):

June 11, 2003

Note: this is a deadline, not a target date. Proposals received after this time will not be reviewed and will not be considered for funding.

### 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: <http://www.fastlane.nsf.gov/a1/newstan.htm>. For FastLane user support, call the FastLane Help Desk at 1-800-673-6188 or e-mail [fastlane@nsf.gov](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 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.

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 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.

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:

- Miriam Heller, Program Director, Directorate for Engineering, Division of Civil & Mechanical Systems, 545 S, telephone: (703) 292-8360, fax: (703) 292-9053, email: [mheller@nsf.gov](mailto:mheller@nsf.gov)
- Dennis Wenger, Program Director, Directorate for Engineering, Division of Civil & Mechanical Systems, 545 S, telephone: (703) 292-7014, fax: (703) 292-9053, email: [dwenger@nsf.gov](mailto:dwenger@nsf.gov)
- Ronald L. Rardin, Program Director, Directorate for Engineering, Division of Design, Manufacture, & Industrial Innovation, 550 S, telephone: (703) 292-7081, fax: (703) 292-9056, email: [rrardin@nsf.gov](mailto:rrardin@nsf.gov)
- Paul J. Werbos, Program Director, Directorate for Engineering, Division of Electrical & Communications Systems, 675 S, telephone: (703) 292-8339, fax: (703) 292-9147, email: [pwerbos@nsf.gov](mailto:pwerbos@nsf.gov)
- Nicholas L. Clesceri, Program Director, Directorate for Engineering, Division of Bioengineering & Environmental Systems, 565 S, telephone: (703) 292-7940, fax: (703) 292-9098, email: [nclescer@nsf.gov](mailto:nclescer@nsf.gov)
- Richard Aspinall, Program Director, Directorate for Social, Behavioral & Economic Sciences, Division of Behavioral and Cognitive Sciences, 995 N, telephone: (703) 292-4995, fax: (703) 292-9068, email: [raspinal@nsf.gov](mailto:raspinal@nsf.gov)
- Lawrence E. Brandt, Program Manager, Directorate for Computer & Information Science & Engineering, Division of Experimental and Integrative Activities, 255 S, telephone: (703) 292-8980, fax: (703) 292-9030, email: [lbrandt@nsf.gov](mailto:lbrandt@nsf.gov)

For questions related to the use of FastLane, contact:

- Kimberly J. Bryant, Division Director's Secretary, Directorate for Engineering, Division of Civil & Mechanical Systems, 545 S, telephone: (703) 292-7006, fax: (703) 292-9053, email: [kbryant@nsf.gov](mailto:kbryant@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 or (800) 281-8749
  
- **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.

[nsf.gov](http://nsf.gov)

[| About NSF](#) | [Funding](#) | [Publications](#) | [News & Media](#) | [Search](#) | [Site Map](#) | [Help](#)

---



**The National Science Foundation**

4201 Wilson Boulevard, Arlington, Virginia 22230, USA

Tel: 703-292-5111, FIRS: 800-877-8339 | TDD: 703-292-5090 or (800) 281-8749

[Policies](#)

[Contact NSF](#)

[Customize](#)