

# Terascale Extensions

---

## Program Solicitation

NSF 03-553



### National Science Foundation

Directorate for Computer and Information Science and Engineering  
Division of Advanced Computational Infrastructure and Research

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

June 09, 2003

## SUMMARY OF PROGRAM REQUIREMENTS

---

### General Information

---

**Program Title:**

Terascale Extensions

**Synopsis of Program:**

NSF is supporting construction of the Extensible Terascale Facility (ETF), a scalable, distributed, heterogeneous grid computing-communication-information system. Scheduled for commissioning in the fall of 2004, the ETF will provide for the seamless integration of high end computing platforms, large archival science and engineering data resources, cutting-edge visualization facilities, and research-enabling instruments and sensors. In the resulting state-of-the-art digital knowledge environment, researchers and educators will collaborate, create and promulgate new science and engineering knowledge across distance, time and fields of expertise.

The ETF is being implemented through a series of coordinated NSF investments that began in FY 2000 with the Terascale Computing System(TCS) and continued in FY 2001 with support of the Distributed Terascale Facility (DTF). In FY 2002, TCS and DTF resources were integrated via an extensible, high-speed optical backbone, thereby creating the Extensible Terascale Facility. Under the NSF ETF activity, current partners include Argonne National Laboratory, the Center for Advanced Computing Research (CACR) at the California Institute of Technology, the National Center for Supercomputing Applications (NCSA) at the University of Illinois at Urbana Champaign, the Pittsburgh Supercomputing Center (PSC) and the San Diego Supercomputing Center (SDSC).

In this announcement, NSF is seeking proposals from organizations wishing to join the current partners in realizing the ETF. New partner organizations will share their existing science and engineering computing-communication-information resources with users via high bandwidth network connections to the ETF. Resources provided for

sharing must clearly contribute to the ETF vision and must provide added scientific value to the national ETF user community. Examples of such resources include, but are not limited to, large shared data repositories or digital libraries, science and/or engineering research instruments, computational resources, and sensor networks that are engaged in collecting, archiving, and analyzing large quantities of experimental data.

Awards made will fund the high-speed networking connection of resources provided for sharing by new ETF partner organizations. Funding will **not** be provided for the creation and/or enhancement of resources to be connected to ETF.

#### **Cognizant Program Officer(s):**

- Richard Hilderbrandt, Program Director, Directorate for Computer & Information Science & Engineering, Division of Advanced Computational Infrastructure and Research, 1122 D, telephone: (703) 292-8963, fax: (703) 292-9060, email: [rhilderb@nsf.gov](mailto:rhilderb@nsf.gov)
- Richard S. Hirsh, Division Director (Acting), Directorate for Computer & Information Science & Engineering, Division of Advanced Computational Infrastructure and Research, 1122 S, telephone: (703) 292-8970, fax: (703) 292-9060, email: [rhirsh@nsf.gov](mailto:rhirsh@nsf.gov)
- Mari W. Maeda, Program Director, Directorate for Computer & Information Science & Engineering, Division of Advanced Networking Infrastructure and Research, 1175 N, telephone: (703) 292-8949, fax: (703) 292-9010, email: [mmaeda@nsf.gov](mailto:mmaeda@nsf.gov)

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

- 47.070 --- Computer and Information Science and Engineering

#### **Eligibility Information**

---

- **Organization Limit:**

Not-for-profit U.S. research and education organizations, including Federally Funded Research and Development Centers (FFRDCs), are eligible to propose.

- **PI Eligibility Limit:** No individual may be Principal Investigator (PI) or Co-PI on more than one proposal.
- **Limit on Number of Proposals:** None Specified.

#### **Award Information**

---

- **Anticipated Type of Award:** Cooperative Agreement
- **Estimated Number of Awards:** 3 to 4
- **Anticipated Funding Amount:** \$10,000,000 in FY 2003 subject to availability of funds

#### **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):  
June 09, 2003

#### **Proposal Review Information**

---

- **Merit Review Criteria:** National Science Board approved criteria. Additional merit review considerations apply. Please see the full text of this solicitation for further information.

#### **Award Administration Information**

---

- **Award Conditions:** Additional award conditions apply. Please see the full text of this solicitation for further information.
- **Reporting Requirements:** Additional reporting requirements apply. Please see the full text of this solicitation for further information.

#### **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

---

NSF is committed to exploiting the potential of computing, communication and information technologies to revolutionize the conduct of science and engineering research and education. As described in the recently-released report of the NSF [Advisory Committee for Cyberinfrastructure](#), this revolution promises discoveries currently unrealizable, a greatly enhanced understanding of the universe in which we live, and technological innovation in areas of great consequence to society. Through ubiquitous, persistent communication networks, scientists and engineers throughout the nation will have instantaneous access to a range of state-of-the-art computing-communication-information resources such as computational engines, data repositories, digital libraries, sensors and field-specific instruments. Moreover, software-based resources and services such as grid, collaboration, data management, visualization and simulation tools will result in the creation of unique, shared digital knowledge environments in which researchers and educators collaborate, create and promulgate new knowledge across distance, time and fields of expertise.

## II. PROGRAM DESCRIPTION

---

NSF is supporting construction of the Extensible Terascale Facility (ETF) as one of the first demonstrations of a state-of-the-art, widely-shared, grid-enabled, computing-communication-information system. The ETF architecture permits the seamless integration of computing platforms, large archival science and engineering data resources, visualization facilities, and research-enabling instruments and sensors. ETF architectural details are described in [The TERAGRID: a Primer](#).

The ETF is being implemented through a series of coordinated NSF investments that began in FY 2000 with the Terascale Computing System (TCS) and continued in FY 2001 with support of the Distributed Terascale Facility (DTF). In FY 2002, TCS and DTF resources were integrated via an extensible, high-speed optical backbone, thereby creating the Extensible Terascale Facility. Under the NSF ETF activity, current partners include Argonne National Laboratory, the Center for Advanced Computing Research (CACR) at the California Institute of Technology, the National Center for Supercomputing Applications (NCSA) at the University of Illinois at Urbana Champaign, the Pittsburgh Supercomputing Center (PSC) and the San Diego Supercomputing Center (SDSC).

The ETF currently comprises the following computing-communication-information resources and services:

- compute engines: over 20 teraflops of computing capacity at PSC, SDSC and NCSA;
- storage: almost 1 petabyte of managed disk storage at NCSA and SDSC;
- remote rendering and visualization: provided by a 180-node visualization cluster at Argonne National Laboratory;
- data collection and analysis: centered around a data server at CACR; and
- a high-speed optical backbone: a 40 Gbit/s backbone runs between Chicago and Los Angeles. Large extensible hubs located in Chicago and Los Angeles connect to ETF resources at five partner sites (Argonne National Lab, CACR, NCSA, PSC and SDSC) over 30 Gb/sec connections so that the bandwidth between any two sites is at least 30 Gb/sec.

In this announcement, NSF is soliciting proposals from organizations seeking to become partners in the ETF. Proposing organizations must commit to share a portion of their existing science and/or engineering computing-communication-information resources with ETF users to enhance the utility of ETF. In return, the ETF will provide researchers and educators currently utilizing new partner resources with high bandwidth connectivity to and seamless integration with a wide range of ETF computational, data and visualization resources, including those described above.

New ETF partners might contribute existing:

- archival scientific and/or engineering data repositories which, when made broadly available, promise breakthroughs at the science and engineering frontier;
- digital libraries, where the digital content contained therein promises unique contributions to discovery, learning and innovation;
- computational resources or existing wide-area, grid-enabled computational facilities that further enhance the computational capacity and/or heterogeneity of ETF;
- large distributed sensor networks, unique research instruments and/or large-scale research facilities that will provide experimental and/or computed data of significant interest to a community of scientists and engineers; and/or
- other significant computing-communication-information resources and services that enhance the utility of ETF and contribute

to realization of a state-of-the-art, heterogeneous digital knowledge environment.

Through funding available in FY 2003, the awardee resources to be shared will be integrated with existing ETF resources. NSF funding will support the acquisition of equipment and associated expenses for establishing high bandwidth connections between the resources to be shared and the ETF backbone, as well as associated personnel costs for integration in conformance with the ETF architecture. It is important to note that funding will **not** be provided for the creation and/or enhancement of the resources to be connected to ETF.

The ETF will be commissioned in the fall of 2004. NSF will request proposals for five years of maintenance and operations of all ETF resources during FY 2004. All ETF partners are expected to participate in ETF for a minimum of five years following ETF commissioning.

### III. ELIGIBILITY INFORMATION

---

Not-for-profit U.S. research and education organizations, including Federally Funded Research and Development Centers (FFRDCs), are eligible to propose. No individual may be Principal Investigator (PI) or Co-PI on more than one proposal. Eligible organizations may submit or participate in only one proposal.

### IV. AWARD INFORMATION

---

It is anticipated that \$10,000,000 will be available for this activity in FY 2003, and subject to availability of funds 3 to 4 awards will be made. Awards will be made as two- or three-year cooperative agreements between NSF and the proposing organization. Awards will provide funding for the capitalization of connection of the resource(s) to and integration of the resource(s) with the ETF for the period of the cooperative agreement. Subject to availability of funds, maintenance and operations support for ETF resources will be provided through separate award instruments as indicated.

### 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).

Proposals submitted in response to this solicitation must include the following information in the 15 page project description:

- **The Scientific Opportunity:** Provide detailed information on the nature of the resource(s) to be connected to the ETF and the extent to which this resource will be shared with ETF users. Describe how the shared resource(s) will enhance or complement the resources currently available within the ETF. Describe how integration of the resource(s) into the ETF will provide the science and/or engineering research and education community with a unique opportunity to promote discovery, learning and innovation.
- **Connecting to and Integrating with ETF:** Provide detailed plans that describe how the resource(s) to be shared will be connected to and integrated with current ETF resources. ETF connections will require: 1) equipment to connect to one of the two ETF hub routers located in Chicago and Los Angeles; 2) a high bandwidth connection consisting of single or multiple 10 Gb/s links from either of the two ETF hubs to the resource site; and 3) border routers located at the resource site to connect the resource local area network to ETF. Connections can be made either by purchasing dedicated fiber or by negotiating a

multiple year lease through a commercial service provider. ETF partner site connections must be compatible at all levels with the existing ETF architecture and grid-enabled operating environment. Provide technical specifications of the networking hardware requested, a timetable for the implementation, and a justification for any FTEs that will be required.

- **Maintenance and Operations Plan:** Describe how the current resource(s) is(are) maintained and operated. Provide evidence that you have sufficient local area network and grid-enabled computing expertise to manage and operate the ETF-shared resource(s). Since NSF anticipates that ETF partners will participate in ETF for a minimum of 5 years following ETF commissioning, provide a five-year estimate of the maintenance and operations support necessary to maintain the ETF connection and to maintain and operate the portion of the resource(s) allocated for sharing on ETF.

All proposers are urged to thoroughly study and understand the implications and compatibility requirements set forth in the document [The TeraGrid: A Primer](#). Proposers are urged to consult with NSF staff to insure they fully understand the compatibility requirements of a grid-enabled data and computing environment.

Proposers are reminded to identify the program announcement/solicitation number (03-553) 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.

### **Budget Preparation Instructions:**

The proposal budget should include all of the equipment and associated personnel costs necessary to connect the proposed resource(s) to one of the two ETF hubs located in Chicago or Los Angeles. It is recommended that connections be multiples of 10 Gb/s wavelengths, and that the bandwidth be justified in terms of the enhancement that the resource(s) would provide. The budget should include the necessary interfaces located at the hub router, the local border routers located at the resource(s) site, additional networking equipment needed at the local site, and any arrangements necessary for fiber connections between the local site and the hub such as purchase of dark fiber or a multi-year lease through a service provider. It should also include personnel costs necessary to integrate the resource(s), as explained in the previous section. A detailed budget justification should be provided that includes vendor quotes for all requested items. The budget justification section has no page limit.

## **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 09, 2003

## **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.

### **Additional Review Criteria**

As part of their consideration of the intellectual merit and broader impacts of the proposed projects, reviewers will be directed to address the following issues in their reviews.

- To what extent will the resource(s) to be connected enhance or complement the resources currently available within the ETF for the benefit of the science and engineering research and education community?
- What are the anticipated benefits to the organization proposing to share existing resource(s) on the ETF?
- Does the proposing organization have the demonstrated networking and grid expertise to implement and maintain the proposed connection to the ETF?
- Does the proposal contain a well-reasoned work plan and timeline for implementation of the proposed connection and integration?
- Is the five-year maintenance and operation plan consistent with the scientific value-added the resource(s) will bring to ETF users?

### **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 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>.

#### Special Award Conditions:

All awards made through this solicitation will require negotiated cooperative agreements between the NSF and the awardee organization, stipulating funding levels, project timelines including milestones and objectives, organizational responsibilities, resource sharing commitments, and reporting requirements.

### 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.

For the duration (two or three years) of the awards made in response to this solicitation, the awardee organization will be required to provide NSF with semi-annual progress reports on progress made toward meeting the milestones and objectives set forth in the cooperative agreements.

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:

- Richard Hilderbrandt, Program Director, Directorate for Computer & Information Science & Engineering, Division of Advanced Computational Infrastructure and Research, 1122 D, telephone: (703) 292-8963, fax: (703) 292-9060, email: [rhilderb@nsf.gov](mailto:rhilderb@nsf.gov)
- Richard S. Hirsh, Division Director (Acting), Directorate for Computer & Information Science & Engineering, Division of Advanced Computational Infrastructure and Research, 1122 S, telephone: (703) 292-8970, fax: (703) 292-9060, email: [rhirsh@nsf.gov](mailto:rhirsh@nsf.gov)
- Mari W. Maeda, Program Director, Directorate for Computer & Information Science & Engineering, Division of Advanced Networking Infrastructure and Research, 1175 N, telephone: (703) 292-8949, fax: (703) 292-9010, email: [mmaeda@nsf.gov](mailto:mmaeda@nsf.gov)

For questions related to the use of FastLane, contact:

- Sharon Glivens, Program & Technology Specialist, Directorate for Computer & Information Science & Engineering, Division of Computer-Communications Research, 1145 S, telephone: (703) 292-8910, fax: (703) 292-9059, email: [sglivens@nsf.gov](mailto:sglivens@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.

### Related Programs:

- Terascale Computing System ([Get funding opportunity document](#))
- Distributed Terascale Facility (DTF) ([Get funding opportunity document](#))

## 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 (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 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.



**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](#)