# Biomedical Engineering, Research to Aid Persons with Disabilities, and Biophotonics Programs

# **Program Solicitation**

NSF 06-566

# Replaces Document(s): NSF 03-560



#### **National Science Foundation**

Directorate for Engineering
Division of Bioengineering & Environmental Systems

#### Submission Window Date(s):

August 15, 2006 - September 15, 2006

August 15 - September 15, Annually Thereafter

Proposals will be accepted annually between August 15 and September 15. There are no deadlines for Undergraduate Design Project proposals.

February 01, 2007 - March 01, 2007

Proposals will be accepted annually between February 1 and March 1. There are no deadlines for Undergraduate Design Project proposals.

February 1 - March 1, Annually Thereafter

Proposals will be accepted annually between February 1 and March 1. There are no deadlines for Undergraduate Design Project proposals.

#### **SUMMARY OF PROGRAM REQUIREMENTS**

# **General Information**

#### **Program Title:**

Biomedical Engineering, Research to Aid Persons with Disabilities, and Biophotonics Programs

#### Synopsis of Program:

The BME/RAPD programs encompass (a) the Biomedical Engineering program (BME) and (b) the Research to Aid Persons with Disabilities program (RAPD). The Biophotonics area is part of BME but is broken out separately because of its rapid growth in size and scope. Biomedical Engineering supports research that, often with diagnosis or treatment-related goals, applies engineering principles to problems in biology and

medicine while advancing the engineering knowledge base. Integration of engineering expertise with life science principles is an essential requirement for advances in this field. The RAPD program supports the development of technologies for new and improved devices or software for persons with disabilities. Current areas of particular interest in BME/RAPD are biomedical photonics; novel tissue characterization schemes; new cellular and tissue engineering concepts; the innovative integration of multi-disciplinary technologies for new imaging and biosensing systems; and, Point-of-Care technologies related to chronic illness, persons with disabilities, and the aging. Support is provided through submission of proposals as well as through special initiatives.

#### Cognizant Program Officer(s):

- Gilbert Devey, Program Director, 565 S, telephone; (703) 292-7943, fax; (703) 292-9098, email; gdevey@nsf.gov
- Leon Esterowitz, Program Director, 565 S, telephone: (703) 292-7942, fax: (703) 292-9098, email: lesterow@nsf.
   gov
- Semahat S Demir, Program Director, 565 S, telephone: (703) 292-7950, fax: (703) 292-9098, email: sdemir@nsf.
- Leon Esterowitz, telephone: (703) 292-7942, email: lesterow@nsf.gov

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

• 47.041 --- Engineering

#### **Award Information:**

Anticipated Type of Award: Standard Grant or Continuing Grant

Estimated Number of Awards: 35

**Anticipated Funding Amount:** \$3,000,000 It is expected that \$3 million will be available annually for this competition, subject to the availability of funds; \$80,000 to \$110,000 per research award annually for BME/RAPD; up to \$200,000 annually for Biophotonics, and \$2,000 to \$25,000 per design project award annually.

#### **Eligibility Information**

# Organization Limit:

None Specified

#### PI Limit:

None Specified

#### Limit on Number of Proposals per Organization:

None Specified

#### Limit on Number of Proposals per PI:

None Specified

# **Proposal Preparation and Submission Instructions**

#### A. Proposal Preparation Instructions

- Letters of Intent: Not Applicable
- Full proposals submitted via FastLane:
  - Grant Proposal Guide (GPG) Guidelines apply
- Full proposals submitted via Grants.gov:
  - NSF Grants.gov Application Guide: A Guide for the Preparation and Submission of NSF Applications via Grants.gov Guidelines apply (Note: The NSF Grants.gov Application Guide is available on the Grants.gov website and on the NSF website at: <a href="http://www.nsf.gov/bfa/dias/policy/docs/grantsgovguide.pdf">http://www.nsf.gov/bfa/dias/policy/docs/grantsgovguide.pdf</a>) To obtain copies of the Application Guide and Application Forms Package: click on the Apply tab on the Grants.gov website, then click on the Apply Step 1: Download a Grant Application Package and Application Instructions link and enter the funding opportunity number, (the program solicitation number without the NSF prefix) and press the Download Package button.

# **B. Budgetary Information**

- Cost Sharing Requirements: Cost Sharing is not required by NSF.
- Indirect Cost (F&A) Limitations: Not Applicable
- Other Budgetary Limitations: Other budgetary limitations apply. Please see the full text of this announcement for further information.

#### C. Due Dates

Submission Window Date(s):

August 15, 2006 - September 15, 2006

August 15 - September 15, Annually Thereafter

Proposals will be accepted annually between August 15 and September 15. There are no deadlines for Undergraduate Design Project proposals.

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#### **Proposal Review Information Criteria**

Merit Review Criteria: National Science Board approved criteria apply.

#### **Award Administration Information**

**Award Conditions:** Additional award conditions apply. Please see the full text of this announcement for further information.

**Reporting Requirements:** Additional reporting requirements apply. Please see the full text of this announcement for further information.

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#### I. INTRODUCTION

The mission of the BME/RAPD is to provide opportunities to develop novel ideas into projects that integrate engineering and life science principles in solving biomedical problems to serve humanity. The program focuses on high impact transforming technologies for deriving information from cells, tissues, organs, and organ systems, extraction of useful information from complex biomedical signals, new approaches to the design of structures and materials for eventual medical use, and new methods of controlling living systems. BME/RAPD is also directed toward the characterization, restoration, and/or substitution of normal functions in humans. Emphasis is placed on significant advancement of fundamental engineering knowledge and not on incremental improvements. Undergraduate engineering design projects are also supported, especially those that provide prototype "custom-designed" devices or software for persons with mental and/or physical disabilities. The BME/RAPD programs do not support clinical studies but initial evaluation in a clinical setting is encouraged. Continued growth of the field depends on the availability of highly skilled individuals needed for the next generation work force. Principal Investigators (Pls) of research projects are expected to include a strong educational component in their proposed work plan. The education of undergraduate engineering students is enhanced through Undergraduate Design Projects' awards supported by the BME/RAPD program. Pls are encouraged to apply for supplemental funding under the Research Experience for Undergraduates (REU) Program (NSF 00-107).

#### II. PROGRAM DESCRIPTION

PROPOSAL CATEGORIES

A. Investigator-initiated Research Proposals:

Research in bioengineering, with diagnosis or treatment-related goals, that applies engineering principals to problems in biology and medicine while advancing engineering knowledge is eligible for support. Bioengineering research to aid persons with disabilities also is eligible. Applicants are required to include in the project description the engineering principles to be applied and the advances anticipated in engineering knowledge as an outcome of the work. Since the field is characterized by its strong multi-disciplinary nature, priority will be given to projects that are dependent on fundamental knowledge of both engineering and the life sciences. An appropriate balance between theory and experiment is encouraged. The BME/RAPD Programs support group and GOALI (NSF 98-142) awards. The areas of interest include models and tools for understanding and control of biological systems; fundamental improvements in deriving information from cells, tissues, organs, and organ systems; new approaches to the design of structures and materials for eventual medical use; and, new methods of reducing health care costs through new technologies. BME/RAPD also supports research directed toward the characterization, restoration, and substitution of normal functions in humans. Emphasis is on the advancement of fundamental engineering knowledge that leads to the development of new technologies or to the novel application of existing technologies. Areas of research interest include:

- Biophotonics
- · Biomedical sensing and imaging systems
- Cellular and tissue engineering with a focus on functional aspects of tissue engineering
- Biomedical implants
- Research to aid persons with disabilities
- Point-of-Care Technologies

#### B. Undergraduate Design Projects.

Proposals requesting support for undergraduate student engineers or engineering technology students to provide prototype "custom designed" devices and software to aid persons with disabilities are welcome. The primary goal of this thrust is to provide a meaningful design experience for the engineering student that will directly aid a specific disabled individual. The expectation is that this "real world" experience will give engineering students a sense of purpose and pride, help engineering schools serve the community, attract new students into engineering, and raise student interest in graduate education. In addition to the guidelines contained in the NSF Grant Proposal Guide, the following requirements apply to the proposals requesting support for Undergraduate Design Projects:

- Project costs may include: equipment, materials, parts and machining time. Other allowable costs include up to 1/2 month's PI summer salary support for preparation of the annual report of student projects, or 1/4 time graduate assistant. The budget may include additional support for a domestic trip to a scientific meeting for the PI and a selected student (e.g., to enter the project into a student paper competition), and/or summer support of undergraduate students directly involved in the project; these additional costs should not exceed 30% of project costs.
- The proposal must include a short description of ten possible design projects. These projects should be suitable for an undergraduate student, or a small team of students, to complete in about one year. The proposal should include a letter of support from an appropriate administrator of an institution providing care or education for the disabled. The letter should certify that the institution and the university will work cooperatively on the design projects.
- The proposal should include a statement that the PI will provide, by July 1 of each grant year, an annual report that will include a description of the successfully completed design projects during the previous academic year. The intention is to combine individual reports, with appropriate editorial comments, into a book for general distribution. The purpose of the book will be to document accomplishments and to provide guidance in teaching engineering design. The desired format of the report is described in section VII. C. AWARD ADMINISTRATION INFORMATION.

It is expected that each grantee will implement a high percentage of projects. It is also expected that the projects will contain appropriate levels of quantitative engineering analysis. Continued funding for years beyond an initial year of support will be based on the quality of projects, how well the design experience of the students is integrated with the rest of their academic program, the number of successfully implemented projects, and the availability of funds.

#### III. AWARD INFORMATION

It is expected that \$3 million will be available annually for this competition, subject to the availability of funds.

- A. Research Awards: Typically 3 years. Mix of standard and continuing. \$80,000 to \$110,000 total budget (including indirect cost) per research award annually for BME/RAPD; up to \$200,000 total budget (including indirect cost) annually for Biophotonics.
- B. Undergraduate Design Projects: Typically 5 years. Continuing. \$2,000 to \$25,000 per design project award annually.

Special report provision (see VII. AWARD ADMINISTRATION INFORMATION. C. Reporting Requirements).

#### IV. ELIGIBILITY INFORMATION

The categories of proposers identified in the Grant Proposal Guide are eligible to submit proposals under this program solicitation.

#### **Organization Limit:**

None Specified

PI Limit:

None Specified

#### Limit on Number of Proposals per Organization:

None Specified

# Limit on Number of Proposals per PI:

None Specified

#### V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

# A. Proposal Preparation Instructions

**Full Proposal Instructions:** Proposers may opt to submit proposals in response to this Program Solicitation via Grants.gov or via the NSF FastLane system.

- Full proposals submitted via FastLane: Proposals submitted in response to this program solicitation should be prepared and submitted in accordance with the general guidelines contained in the NSF Grant Proposal Guide (GPG). The complete text of the GPG is available electronically on the NSF website at: <a href="http://www.nsf.gov/publications/pub\_summ.jsp?ods\_key=gpg">http://www.nsf.gov/publications/pub\_summ.jsp?ods\_key=gpg</a>. Paper copies of the GPG may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from <a href="mailto:pubs@nsf.gov">pubs@nsf.gov</a>. Proposers are reminded to identify this program solicitation number in the program solicitation block on the NSF Cover Sheet For Proposal to the National Science Foundation. Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.
- Full proposals submitted via Grants.gov: Proposals submitted in response to this program solicitation via Grants.gov should be prepared and submitted in accordance with the NSF Grants.gov Application Guide: A Guide for the Preparation and Submission of NSF Applications via Grants.gov. The complete text of the NSF Grants.gov Application Guide is available on the Grants.gov website and on the NSF website at: (http://www.nsf.gov/bfa/dias/policy/docs/grantsgovguide.pdf). To obtain copies of the Application Guide and Application Forms Package, click on the Apply tab on the Grants.gov site, then click on the Apply Step 1: Download a Grant Application Package and Application Instructions link and enter the funding opportunity number, (the program solicitation number without the NSF prefix) and press the Download Package button. Paper copies of the Grants.gov Application Guide also may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from pubs@nsf.gov.

In determining which method to utilize in the electronic preparation and submission of the proposal, please note the following:

A. Collaborative Proposals. All collaborative proposals must be submitted via the NSF FastLane system. This includes collaborative proposals submitted:

- by one organization (and which include one or more subawards); or
- as separate submissions from multiple organizations. Proposers are advised that collaborative
  proposals submitted in response to this Program Solicitation via Grants.gov will be requested to be
  withdrawn and proposers will need to resubmit these proposals via FastLane. (Chapter II, Section
  D.3 of the Grant Proposal Guide provides additional information on collaborative proposals.)
- B. All Other Types of Proposals That Contain Subawards. All other types of proposals that contain one or more subawards also must be submitted via the NSF FastLane system.

# **B. Budgetary Information**

Cost Sharing: Cost sharing is not required by NSF in proposals submitted under this Program Solicitation.

Other Budgetary Limitations: See Section IV. Award Information B. Undergraduate Design Projects.

#### C. Due Dates

# Submission Window Date(s):

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# D. FastLane/Grants.gov Requirements

#### • For Proposals Submitted Via FastLane:

Detailed technical 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. The FastLane Help Desk answers general technical questions related to the use of the FastLane system. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this 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/

#### • For Proposals Submitted Via Grants.gov:

Before using Grants.gov for the first time, each organization must register to create an institutional profile.

Once registered, the applicant's organization can then apply for any federal grant on the Grants.gov website. The Grants.gov's Grant Community User Guide is a comprehensive reference document that provides technical information about Grants.gov. Proposers can download the User Guide as a Microsoft Word document or as a PDF document. The Grants.gov User Guide is available at: <a href="http://www.grants.gov/">http://www.grants.gov/</a> CustomerSupport. In addition, the NSF Grants.gov Application Guide provides additional technical guidance regarding preparation of proposals via Grants.gov. For Grants.gov user support, contact the Grants.gov Contact Center at 1-800-518-4726 or by email: <a href="mailto:support@grants.gov">support@grants.gov</a>. The Grants.gov Contact Center answers general technical questions related to the use of Grants.gov. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this solicitation.

**Submitting the Proposal:** Once all documents have been completed, the Authorized Organizational Representative (AOR) must submit the application to Grants.gov and verify the desired funding opportunity and agency to which the application is submitted. The AOR must then sign and submit the application to Grants.gov. The completed application will be transferred to the NSF FastLane system for further processing.

#### VI. NSF PROPOSAL PROCESSING AND REVIEW PROCEDURES

Proposals received by NSF are assigned to the appropriate NSF program and, if they meet NSF proposal preparation requirements, for review. All proposals are carefully reviewed by a scientist, engineer, or educator serving as an NSF Program Officer, and usually by three to ten other persons outside NSF who are experts in the particular fields represented by the proposal. These reviewers are selected by Program Officers charged with the oversight of the review process. Proposers are invited to suggest names of persons they believe are especially well qualified to review the proposal and/or persons they would prefer not review the proposal. These suggestions may serve as one source in the reviewer selection process at the Program Officer's discretion. Submission of such names, however, is optional. Care is taken to ensure that reviewers have no conflicts with the proposer.

#### A. NSF Merit Review Criteria

All NSF proposals are evaluated through use of the two National Science Board (NSB)-approved merit review criteria: intellectual merit and the broader impacts of the proposed effort. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities.

The two NSB-approved merit review criteria are listed below. The criteria include considerations that help define them. These considerations are suggestions and not all will apply to any given proposal. While proposers must address both merit review criteria, reviewers will be asked to address only those considerations that are relevant to the proposal being considered and for which the reviewer is qualified to make judgements.

#### What is the intellectual merit of the proposed activity?

How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields? How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, the reviewer will comment on the quality of the prior work.) To what extent does the proposed activity suggest and explore creative 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 and Selection Process**

Proposals submitted in response to this program solicitation will be reviewed by Adhoc Review or Panel Review.

Reviewers will be asked to formulate a recommendation to either support or decline each proposal. The Program Officer assigned to manage the proposal's review will consider the advice of reviewers and will formulate a recommendation.

After scientific, technical and programmatic review and consideration of appropriate factors, the NSF Program Officer recommends to the cognizant Division Director whether the proposal should be declined or recommended for award. NSF is striving to be able to tell applicants whether their proposals have been declined or recommended for funding within six months. The time interval begins on the date of receipt. The interval ends when the Division Director accepts the Program Officer's recommendation.

A summary rating and accompanying narrative will be completed and submitted by each reviewer. In all cases, reviews are treated as confidential documents. Verbatim copies of reviews, excluding the names of the reviewers, are sent to the Principal Investigator/Project Director by the Program Officer. In addition, the proposer will receive an explanation of the decision to award or decline funding.

In all cases, after programmatic approval has been obtained, the proposals recommended for funding will be forwarded to the Division of Grants and Agreements for review of business, financial, and policy implications and the processing and issuance of a grant or other agreement. Proposers are cautioned that only a Grants and Agreements Officer may make commitments, obligations or awards on behalf of NSF or authorize the expenditure of funds. No commitment on the part of NSF should be inferred from technical or budgetary discussions with a NSF Program Officer. A Principal Investigator or organization that makes financial or personnel commitments in the absence of a grant or cooperative agreement signed by the NSF Grants and Agreements Officer does so at their own risk.

# VII. AWARD ADMINISTRATION INFORMATION

#### A. Notification of the Award

Notification of the award is made to *the submitting organization* by a Grants Officer in the Division of Grants and Agreements. Organizations whose proposals are declined will be advised as promptly as possible by the cognizant NSF Program 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. Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from pubs@nsf.gov.

More comprehensive information on NSF Award Conditions 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:** For Undergraduate Design Projects a report is due by July 1 of each grant year as described under Reporting Requirements below. This is in addition to the annual project reports.

#### C. Reporting Requirements

For all multi-year grants (including both standard and continuing grants), the Principal Investigator must submit an annual project report to the cognizant Program Officer at least 90 days before the end of the current budget period. (Some programs or awards require more frequent project reports). Within 90 days after expiration of a grant, the PI also is required to submit a final project report.

Failure to provide the required annual or final project reports will delay NSF review and processing of any future funding increments as well as any pending proposals for that PI. PIs should examine the formats of the required reports in advance to assure availability of required data.

Pls are required to use NSF's electronic project-reporting system, available through FastLane, for preparation and submission of annual and final project reports. Such reports provide information on activities and findings, project participants (individual and organizational) publications; and, other specific products and contributions. Pls will not be required to re-enter information previously provided, either with a proposal or in earlier updates using the electronic system. Submission of the report via FastLane constitutes certification by the PI that the contents of the report are accurate and complete.

Additional Requirements for Undergraduate Design Projects' awards: In addition to the project report requirements of FDP IV, NSF ASR, Article 8 or GC-1, Article 15, the PI will provide by July 1st of each grant year, a two page report for each implemented project which includes the following:

#### Page 1

A photograph of the prototype device. Describe, in layman's terms, the device and its impact upon the individual who received the device.

#### Page 2

A technical description and the approximate cost of the device.

It is NSF's intention to compile the reports from all the grant recipients into a yearly report for general distribution. NSF expects that each grantee will actually implement a very high percentage of projects. Continued funding for years beyond the initial support of the grant will be based on the number and quality of the implemented devices in the previous years and the availability of funds.

Awardees will be notified to whom and where the special reports should be submitted.

For all awards:

#### VIII. AGENCY CONTACTS

General inquiries regarding this program should be made to:

- Gilbert Devey, Program Director, 565 S, telephone: (703) 292-7943, fax: (703) 292-9098, email: gdevey@nsf.gov
- Leon Esterowitz, Program Director, 565 S, telephone: (703) 292-7942, fax: (703) 292-9098, email: lesterow@nsf.
   gov
- Semahat S Demir, Program Director, 565 S, telephone: (703) 292-7950, fax: (703) 292-9098, email: sdemir@nsf.

qov

Leon Esterowitz, telephone: (703) 292-7942, email: lesterow@nsf.gov

For questions related to the use of FastLane, contact:

- FastLane Help Desk, telephone: 1-800-673-6188; e-mail: fastlane@nsf.gov.
- Marcia Rawlings, 565 S, telephone: (703) 292-7956, fax: (703) 292-9098, email: mrawling@nsf.gov

For guestions relating to Grants.gov contact:

 Grants.gov Contact Center: If the Authorized Organizational Representatives (AOR) has not received a confirmation message from Grants.gov within 48 hours of submission of application, please contact via telephone: 1-800-518-4726; e-mail: support@grants.gov.

#### IX. OTHER INFORMATION

The NSF Website provides the most comprehensive source of information on NSF Directorates (including contact information), programs and funding opportunities. Use of this Website by potential proposers is strongly encouraged. In addition, MyNSF (formerly the Custom News Service)is an information-delivery system designed to keep potential proposers and other interested parties apprised of new NSF funding opportunities and publications, important changes in proposal and award policies and procedures, and upcoming NSF Regional Grants Conferences. Subscribers are informed through e-mail or the user's Web browser each time new publications are issued that match their identified interests. MyNSF also is available on NSF's Website at <a href="http://www.nsf.gov/mynsf/">http://www.nsf.gov/mynsf/</a>.

Grants.gov provides an additional electronic capability to search for Federal government-wide grant opportunities. NSF funding opportunities may be accessed via this new mechanism. Further information on Grants.gov may be obtained at <a href="http://www.grants.gov">http://www.grants.gov</a>.

#### ABOUT THE NATIONAL SCIENCE FOUNDATION

The National Science Foundation (NSF) is an independent Federal agency created by the National Science Foundation Act of 1950, as amended (42 USC 1861-75). The Act states the purpose of the NSF is "to promote the progress of science; [and] to advance the national health, prosperity, and welfare by supporting research and education in all fields of science and engineering."

NSF funds research and education in most fields of science and engineering. It does this through grants and cooperative agreements to more than 2,000 colleges, universities, K-12 school systems, businesses, informal science organizations and other research organizations throughout the US. The Foundation accounts for about one-fourth of Federal support to academic institutions for basic research.

NSF receives approximately 40,000 proposals each year for research, education and training projects, of which approximately 11,000 are funded. In addition, the Foundation receives several thousand applications for graduate and postdoctoral fellowships. The agency operates no laboratories itself but does support National Research Centers, user facilities, certain oceanographic vessels and Antarctic research stations. The Foundation also supports cooperative research between universities and industry, US participation in international scientific and engineering efforts, and educational activities at every academic level.

Facilitation Awards for Scientists and Engineers with Disabilities provide funding for special assistance or equipment to enable persons with disabilities to work on NSF-supported projects. See Grant Proposal Guide Chapter II, Section D.2 for instructions regarding preparation of these types of proposals.

The National Science Foundation has Telephonic Device for the Deaf (TDD) and Federal Information Relay Service (FIRS)

capabilities that enable individuals with hearing impairments to communicate with the Foundation about NSF programs, employment or general information. TDD may be accessed at (703) 292-5090 and (800) 281-8749, FIRS at (800) 877-8339.

The National Science Foundation Information Center may be reached at (703) 292-5111.

The National Science Foundation promotes and advances scientific progress in the United States by competitively awarding grants and cooperative agreements for research and education in the sciences, mathematics, and engineering.

To get the latest information about program deadlines, to download copies of NSF publications, and to access abstracts of awards, visit the NSF Website at http://www.nsf.gov

• Location: 4201 Wilson Blvd. Arlington, VA 22230

• For General Information (703) 292-5111

(NSF Information Center):

• TDD (for the hearing-impaired): (703) 292-5090

• To Order Publications or Forms:

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

or telephone: (703) 292-7827

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#### PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

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