

NIH-NSF Bioengineering and Bioinformatics Summer Institutes Program (BBSI)

**A Joint Program for Multidisciplinary Research Training
and Education**

[Program Solicitation](#)

NSF-02-109

NATIONAL SCIENCE FOUNDATION

DIRECTORATE FOR ENGINEERING
DIRECTORATE FOR BIOLOGICAL SCIENCES
DIRECTORATE FOR COMPUTER AND INFORMATION SCIENCE AND
ENGINEERING
DIRECTORATE FOR EDUCATION AND HUMAN RESOURCES
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NATIONAL INSTITUTES OF HEALTH

NATIONAL INSTITUTE OF BIOMEDICAL IMAGING AND BIOENGINEERING
NATIONAL HUMAN GENOME RESEARCH INSTITUTE

LETTER OF INTENT DUE DATE(S) (*optional*): May 26, 2002

FULL PROPOSAL DEADLINE(S): June 27, 2002





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- **Location:** 4201 Wilson Blvd. Arlington, VA 22230
- **For General Information (NSF Information Center):** (703) 292-5111
- **TDD (for the hearing-impaired):** (703) 292-5090
- **To Order Publications or Forms:**
Send an e-mail to: pubs@nsf.gov
or telephone: (301) 947-2722
- **To Locate NSF Employees:** (703) 292-5111

SUMMARY OF PROGRAM REQUIREMENTS

GENERAL INFORMATION

Program Title: NIH-NSF Bioengineering and Bioinformatics Summer Institutes Program (BBSI)

Synopsis of Program:

The National Science Foundation (NSF) and the National Institutes of Health (NIH) have identified bioengineering and bioinformatics as essential underpinning fields in the 21st century. The agencies are collaborating on an important high profile effort to meet the anticipated bioengineering and bioinformatics human resource needs.

The purpose of this high value program is to provide students majoring in the biological sciences, computer sciences, engineering, mathematics, and physical sciences with well planned interdisciplinary bioengineering or bioinformatics research and education experiences in very active 'Summer Institutes', thereby increasing the number of young people considering careers in bioengineering and bioinformatics at the graduate level and beyond. For the purpose of the Program Solicitation, bioengineering and bioinformatics are considered in their broadest sense; we welcome innovative applications from all arenas.

Cognizant Program Officer(s):

NSF CONTACTS:

- Sohi Rastegar, Division of Engineering Education and Centers, Program Director, ENG/EEC, telephone: (703) 292-7946, e-mail: srastega@nsf.gov.
- Lynn Preston, Division of Engineering Education and Centers, Deputy Division Director, ENG/EEC, telephone: (703) 292-5358, e-mail: lpreston@nsf.gov.
- Bruce Hamilton, Division of Bioengineering and Environmental Systems, Division Director, ENG/BES, telephone: (703) 292-7066, e-mail: bhamilto@nsf.gov.
- Wyn Jennings, Division of Graduate Education, Program Director, EHR/DGE, telephone: (703) 292-5307, e-mail: pjenning@nsf.gov.
- Roger Salters, Division of Undergraduate Education, Program Director, EHR/DUE, telephone: (703) 292-4652, e-mail: rsalters@nsf.gov.
- Mita Desai, Division of Experimental and Integrative Activities, Program Director, CISE/EIA, telephone: (703) 292-5346, e-mail: mdesai@nsf.gov.

- Christopher A. Cullis, Division of Biological Infrastructure, Program Director, BIO/DBI, telephone: (703) 292-8470, e-mail: ccullis@nsf.gov.
- Denise Caldwell, Division of Physics, Program Director, MPS/PHY, telephone: (703) 292-7371, e-mail: dcaldwel@nsf.gov.

NIH CONTACTS:

- Richard Swaja, Medical Imaging and Bioengineering, National Institutes of Biomedical Imaging and Bioengineering (NIBIB), National Institutes of Health. Email: swajad@od.nih.gov, Phone: (301) 451-4779.
- Bettie Graham, National Human Genome Research Institute (NHGRI), National Institutes of Health. Email: grahamb@odder.nhgri.nih.gov, Phone: 301-496-7531.

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

- 47.074 --- Biological Sciences
- 47.070 --- Computer and Information Science and Engineering
- 47.076 --- Education and Human Resources
- 47.041 --- Engineering
- 47.049 --- Mathematical and Physical Sciences
- 93.287 --- National Institute Biomedical Imaging and Bioengineering
- 93.172 --- National Human Genome Research Institute

ELIGIBILITY INFORMATION

- **Organization Limit:** U.S. academic institutions of higher education may apply.
- **PI Eligibility Limit:** None. See full description for student eligibility criteria.
- **Limit on Number of Proposals:** An institution may submit only one proposal as a lead institution.

AWARD INFORMATION

- **Anticipated Type of Award:** Standard or Continuing Grant
- **Estimated Number of Awards:** Approximately 5-8 four-year awards will be made.
- **Anticipated Funding Amount:** NSF anticipates \$1,500,000 in FY 2002 pending the availability of funds

PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

- **Letters of Intent:** Submission of Letters of Intent is optional. Please see the full program announcement/solicitation for further information.
- **Full Proposals:** Supplemental Preparation Guidelines
 - The program announcement/solicitation contains supplements to the standard Grant Proposal Guide (GPG) proposal preparation guidelines. Please see the full program announcement/solicitation for further information.

B. Budgetary Information

- **Cost Sharing Requirements:** Cost Sharing is not required.
- **Indirect Cost (F&A) Limitations:** Maximum indirect cost allowed is 8% of total Direct Costs, excluding equipment.
- **Other Budgetary Limitations:** Other budgetary limitations apply. Please see the full program announcement/solicitation for further information.

C. Deadline/Target Dates

- **Letters of Intent (*optional*):** May 26, 2002
- **Preliminary Proposals (*optional*):** None
- **Full Proposal Deadline Date(s):** June 27, 2002

D. FastLane Requirements

- **FastLane Submission:** Required
- **FastLane Contact(s):**
 - Ms. Esther Bolding, Administrative Manager, Division of Engineering Education and Centers, Suite 585, telephone: 703-292-5342, e-mail: ebolding@nsf.gov.

PROPOSAL REVIEW INFORMATION

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

AWARD ADMINISTRATION INFORMATION

- **Award Conditions:** Standard NSF award conditions apply.
- **Reporting Requirements:** Additional reporting requirements apply. Please see the full program announcement/solicitation for further information.

I. INTRODUCTION

The National Science Foundation and the National Institutes of Health have identified bioengineering and bioinformatics as essential underpinning fields in the 21st century. The program seeks to provide students majoring in the biological sciences, computer sciences, engineering, mathematics, and physical sciences with interdisciplinary bioengineering or bioinformatics research and education experiences, thereby increasing the number of young people considering careers in bioengineering and bioinformatics at the graduate level and beyond. For the purpose of the Program Solicitation, bioengineering and bioinformatics are considered in their broadest sense; we welcome innovative applications from all arenas.

The NSF Web Site is located at: <http://www.nsf.gov>.

The NIH Web Site is located at: <http://www.nih.gov>.

II. PROGRAM DESCRIPTION

Annually, every Bioengineering and Bioinformatics Summer Institute will provide a combined total of approximately 15 undergraduate and graduate students with:

- (1) didactic training experiences combining high quality formal course work with state-of-the art research seminars to provide students with an interdisciplinary foundation in the fundamentals of bioengineering or bioinformatics and biological and/or clinical sciences, as required; and
- (2) associated interdisciplinary bioengineering and bioinformatics research experiences that feature high quality interaction of students with faculty and/or other research mentors and access to appropriate facilities and professional development opportunities.

Students will be encouraged to participate in an Institute for up to two consecutive summer programs.

The Bioengineering and Bioinformatics Summer Institutes will reach broadly into the national student talent pool as they seek to attract a diverse group of U.S. citizens and permanent residents to careers in bioengineering or bioinformatics. Fifty percent or more of the student participants in each Summer Institute should come from outside the host institution. NSF and NIH are particularly interested in ensuring the full participation of women, under-represented minorities (African-Americans, Hispanic-Americans, Native-Americans, Alaskan natives, Pacific-Islanders) and persons with disabilities in this program.

III. ELIGIBILITY INFORMATION

Eligible Student Participants: Students must be U.S. citizens or permanent residents. Undergraduate students must have completed their sophomore year and graduate students must be within the first two years of entry into their graduate education program. An undergraduate student is a student enrolled in a degree program (part-time or full-time) leading to a

baccalaureate. Students who have received associates degree and are transferring from one institution to another but are enrolled at neither institution during the intervening summer are eligible to participate.

IV. AWARD INFORMATION

Approximately 5-8 awards will be made in FY 2002 for programs to begin in the summer of 2003. Each Bioengineering or Bioinformatics Summer Institute may receive NIH-NSF support of up to \$200K (total cost) per year for up to four years. It is expected that not all awards will receive the maximum amount; the size of awards will depend upon the type of program proposed and other factors. Awards will be made for four years and funding for each year will be contingent upon progress and the availability of funds.

Estimated program budget, number of awards and average award size/duration are subject to the availability of funds.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Letters of Intent: For the purpose of planning for review panel, a one-page Letter of Intent is encouraged for each planned application, though not required. The letter should be submitted by e-mail to srastega@nsf.gov and should include the title of the proposal, the name of the PI and core participants, and a brief statement of the vision and goals of the proposed summer institute.

Full Proposal:

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 Web Site at: <http://www.nsf.gov/cgi-bin/getpub?gpg>. Paper copies of the GPG may be obtained from the NSF Publications Clearinghouse, telephone (301) 947-2722 or by e-mail from pubs@nsf.gov.

Cover Sheet. To properly identify your proposal, select the program solicitation number from the pull-down list. The title of the project must begin with the words: "**NIH-NSF BBSI**".

Information about Principal Investigator. This form is automatically generated by Fastlane. A single individual should be designated as Principal Investigator. This individual will be responsible for overseeing all aspects of the award. Other anticipated investigators should be listed as Senior Personnel.

Project Summary. (1-page limit) Provide a description of the activities that would result if the proposed Summer Institute were funded, including comments on the Institute objectives, number of participating students, and intended impact. The summary should include the following information: name of the host institution/organization; the major focus (bioengineering or

bioinformatics) that describes the proposed institute; a project title that permits prospective students to identify the focus of the site; number of summer weeks on site; name, telephone number and email address of the point-of-contact for student recruitment; and a Web address for Site information.

Table of Contents. The Table of Contents is generated by Fastlane and cannot be edited.

Project Description. The Project Description must contain the following items and may not exceed 15 pages in length:

Overview. Provide a brief description of the proposed Summer Institute objectives, targeted student participants, intellectual focus, organizational structure, timetable, and institutional commitment. The proposed programs should have three elements as described below. While the major focus of the program is on the didactic training and research experience, the proposal should adequately address plans for professional growth of the students.

Nature of Didactic, Learning Activities. Proposals should describe the formal course work and research seminars to be provided. The proposed curriculum should provide students/trainees with sufficient knowledge to understand the fundamentals of bioengineering or bioinformatics. Research seminars should expose Institute students/trainees to state-of-the-art research opportunities and challenges, and should provide students/trainees with a variety of perspectives in which their disciplines intersect with bioengineering or bioinformatics.

The Research Experience. Proposals should describe the experience and research track record of the principal investigator, the faculty who may serve as research mentors, and the institution. Examples of interdisciplinary bioengineering or bioinformatics research projects in which students will be involved and that build upon their didactic learning experiences should be provided. Each student/trainee should make a formal presentation on his/her research project toward the end of each summer program.

Professional Growth. Proposals must present plans that will ensure the development of student/faculty interaction and student/student communication. Development of collegial relationships and interactions is an important aspect of the Institute opportunity. Proposals should describe plans to provide career counseling to students, including what is required to successfully transition from undergraduate to graduate status, information about various fellowship opportunities and other career goals and opportunities.

Student Recruitment and Selection. The overall quality of the student recruitment and selection processes and criteria will be an important element in proposal evaluation. The recruitment plan should describe with as much specificity as possible, including the types and/or names of institutions where students will be recruited and the efforts made to attract students from under-represented groups (women, minorities, persons with disabilities). Fifty percent or more of the student participants should come from outside the host institution. Student participants must be citizens or permanent residents of the United States.

Project Evaluation and Reporting. The proposal should describe a plan for evaluation of the proposed project during and after the award, including such matters as: measures to be employed to gauge success; mechanisms for assessment of the project by participants, faculty and administrative observers; follow-through plans to promote continuation of student interest and involvement in bioengineering or bioinformatics; plans for tracking participants after they complete the experience, etc.

References Cited. A listing of references to pertinent literature is required.

Current and Pending Support. This form should be provided for all persons listed as Senior Personnel.

Biographical Sketches. Should be provided for all persons listed as senior personnel.

Project Budget. The proposal should include a detailed project budget and budget justification, as described in the GPG. The budget justification (not to exceed 3 pages) should explain and justify major cost items and any unusual situations/inclusions. Costs may include such items as faculty salaries and participant stipends, housing, meals, travel, or laboratory use. Costs to defray two one-day trips for the PIs to the Washington, DC area during the grant period should be included. Travel and per diem costs for up to four outside scientists and engineers to present seminars on state-of-the-art topics may be included. Honoraria are not allowed. As a guide, student stipends are expected to be consistent with university's stipends for students at a similar educational level but not less than \$300/week for undergraduate students and \$500/week for graduate students. All student costs should be entered on line F under participant support costs. An appropriate level of stipend support for students to participate in research projects at their home institutions during the year may be included.

Proposers are reminded to identify the program solicitation number (NSF-02-109) 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 is not required in proposals submitted under this Program Solicitation.

Indirect Cost (F&A) Limitations: Maximum indirect cost allowed is 8% of total Direct Costs, excluding equipment.

Other Budgetary Limitations:

The Principal Investigators of all grants awarded under this solicitation are expected to attend two grantee meetings in the Washington, DC area during the course of the project. The travel cost associated with these meetings should be planned in their budget.

C. Deadline/Target Dates

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

Letters of Intent (optional): May 26, 2002

Full Proposals by 5:00 PM local time: June 27, 2002

D. FastLane Requirements

Proposers are required to prepare and submit all proposals for this Program 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. 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 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 two 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 he/she 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.

Additional Review Criteria

Additional Review Criteria:

- Will the didactic training experience provide the students with high quality formal course work and research seminars, informed by the state-of-the-art that will provide an interdisciplinary foundation in fundamentals of bioengineering or bioinformatics?
- Does the program provide students the opportunity to build on the didactic experience through interdisciplinary research projects that involve the students in the creativity of the research process?
- Are the example topics proposed for the research seminars interdisciplinary, and at the forefront of the interface of disciplines contributing to bioengineering or bioinformatics?

- Is there an effective program for mentoring that has a high probability of resulting in career paths in bioengineering or bioinformatics and enrollments in graduate programs by the affected students?
- Is there an effective evaluation and tracking program to determine the effectiveness of the program and assess outcomes and impacts?
- Is the proposed budget appropriate and indicated expenses justified in meeting the goals of the program?
- Are the plans for recruiting adequate to ensure inclusion of women, underrepresented minorities and persons with disabilities as institute participants?
- NIH requirements for projects involving research with human subjects and plans for the recruitment and retention of subjects should also be included.
(see http://grants.nih.gov/grants/funding/women_min/guidelines_update.htm and <http://grants.nih.gov/grants/funding/children/children.htm>).

Proposals submitted in response to this solicitation will be reviewed by a multidisciplinary panel including experts from the fields of biology, computer science, engineering, mathematical and physical sciences, and relevant health disciplines.

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 identities of 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.

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.

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 closing date of an announcement/solicitation or the date of proposal receipt (whichever is later). The interval ends when the Division Director accepts the Program Officer's recommendation.

In all cases, after programmatic approval has been obtained, the proposals recommended for funding will be forwarded to the Division of Grants and Agreements for review of business, financial, and policy implications and the processing and issuance of a grant or other agreement.

Proposers are cautioned that only a Grants and Agreements Officer may make commitments, obligations or awards on behalf of NSF or authorize the expenditure of funds. No commitment on the part of NSF should be inferred from technical or budgetary discussions with a NSF Program Officer. A Principal Investigator or organization that makes financial or personnel commitments in the absence of a grant or cooperative agreement signed by the NSF Grants and Agreements Officer does so at one's 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 Web site at http://www.nsf.gov/home/grants/grants_gac.htm. Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (301) 947-2722 or by e-mail from pubs@nsf.gov.

More comprehensive information on NSF Award Conditions is contained in the NSF *Grant Policy Manual* (GPM) Chapter II, available electronically on the NSF Web site 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 Web site 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. Approximately 30 days before expiration, NSF will send a notice to remind the PI of the requirement to file the final project report. Failure to provide final technical reports delays NSF review and processing of pending proposals for that PI. PIs should examine the formats of the required reports in advance to assure availability of required data.

NSF has implemented an electronic project reporting system, available through FastLane. 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 NIH-NSF Bioengineering and Bioinformatics Summer Institutes Program (BBSI) should be made to:

NSF CONTACTS:

- Sohi Rastegar, Division of Engineering Education and Centers, Program Director, ENG/EEC, telephone: (703) 292-7946, e-mail: srastega@nsf.gov.
- Lynn Preston, Division of Engineering Education and Centers, Deputy Division Director, ENG/EEC, telephone: (703) 292-5358, e-mail: lpreston@nsf.gov.
- Bruce Hamilton, Division of Bioengineering and Environmental Systems, Division Director, ENG/BES, telephone: (703) 292-7066, e-mail: bhamilto@nsf.gov.
- Wyn Jennings, Division of Graduate Education, Program Director, EHR/DGE, telephone: (703) 292-5307, e-mail: pjenning@nsf.gov.
- Roger Salters, Division of Undergraduate Education, Program Director, EHR/DUE, telephone: (703) 292-4652, e-mail: rsalters@nsf.gov.
- Mita Desai, Division of Experimental and Integrative Activities, Program Director, CISE/EIA, telephone: (703) 292-5346, e-mail: mdesai@nsf.gov.
- Christopher A. Cullis, Division of Biological Infrastructure, Program Director, BIO/DBI, telephone: (703) 292-8470, e-mail: ccullis@nsf.gov.
- Denise Caldwell, Division of Physics, Program Director, MPS/PHY, telephone: (703) 292-7371, e-mail: dcaldwel@nsf.gov.

NIH CONTACTS:

- Richard Swaja, Medical Imaging and Bioengineering, National Institutes of Biomedical Imaging and Bioengineering (NIBIB), National Institutes of Health. Email: swajad@od.nih.gov, Phone: (301) 451-4779.
- Bettie Graham, National Human Genome Research Institute (NHGRI), National Institutes of Health. Email: grahamb@odder.nhgri.nih.gov, Phone: 301-496-7531.

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 web site 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 (unless otherwise specified in the eligibility requirements for a particular program).

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 program announcement/solicitation for further information.

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, FIRS at 1-800-877-8339.

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

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.

Pursuant to 5 CFR 1320.5(b), 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, Information Dissemination Branch, Division of Administrative Services, National Science Foundation, Arlington, VA 22230, or to Office of Information and Regulatory Affairs of OMB, Attention: Desk Officer for National Science Foundation (3145-0058), 725 17th Street, N.W. Room 10235, Washington, D.C. 20503.

OMB control number: 3145-0058.