Undergraduate Research and Mentoring in the Biological Sciences (URM)

PROGRAM SOLICITATION
NSF 10-531

REPLACES DOCUMENT(S):
NSF 06-591

National Science Foundation

Directorate for Biological Sciences
Division of Biological Infrastructure

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

April 26, 2010

March 01, 2011

First Tuesday in March, Annually Thereafter

IMPORTANT INFORMATION AND REVISION NOTES

- The previous requirement for preliminary proposals has been eliminated.
- The recommended typical annual stipend for a participating student has been raised to $15,000.

Please be advised that the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG) includes revised guidelines to implement the mentoring provisions of the America COMPETES Act (ACA) (Pub. L. No. 110-69, Aug. 9, 2007.) As specified in the ACA, each proposal that requests funding to support postdoctoral researchers must include a description of the mentoring activities that will be provided for such individuals. Proposals that do not comply with this requirement will be returned without review (see the PAPP Guide Part I: *Grant Proposal Guide* Chapter II for further information about the implementation of this new requirement).

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Undergraduate Research and Mentoring in the Biological Sciences (URM)

Synopsis of Program:

The goal of the **Undergraduate Research and Mentoring in the Biological Sciences** (**URM**) program is to increase the number and diversity of individuals pursuing graduate studies in all areas of biological research supported by the NSF Directorate for Biological Sciences. Support will be provided to academic institutions to establish innovative programs to engage undergraduates in a year-round research and mentoring activity. Particular emphasis will be placed on broadening participation of members of groups historically underrepresented in science and engineering: African Americans, Alaska Natives, American Indians, Hispanic Americans, Native Hawaiians and other Pacific Islanders, and persons with disabilities.

Cognizant Program Officer(s):

- Diana E. Anderson, telephone: (703) 292-8470, email: danderso@nsf.gov
- Sally E. O'Connor, telephone: (703) 292-8470, email: soconnor@nsf.gov

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

- 47.074 --- Biological Sciences

Award Information

Anticipated Type of Award: Standard Grant or Continuing Grant

Estimated Number of Awards: 8 The URM Program expects to make at least 8 awards, pending availability of funds.

Anticipated Funding Amount: $3,000,000 for new standard or continuing awards in FY 2010 subject to the availability of funds.

Eligibility Information

Organization Limit:

Proposals may only be submitted by the following:

- Universities and Colleges - Universities and two- and four-year colleges (including community colleges) accredited in, and having a campus located in the US, acting on behalf of their faculty members. Such organizations also are referred to as academic institutions.

PI Limit:

None Specified

Limit on Number of Proposals per Organization:

One (1) proposal per organization

Limit on Number of Proposals per PI:

None Specified

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- **Letters of Intent:** Not Applicable
- **Preliminary Proposal Submission:** Not Applicable
- **Full Proposals:**
  - Full Proposals submitted via FastLane: NSF Proposal and Award Policies and Procedures Guide, Part I: Grant Proposal Guide (GPG) Guidelines apply. The complete text of the GPG is available electronically on the NSF website at: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg.
  - 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: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=grantsgovguide)

B. Budgetary Information

- **Cost Sharing Requirements:** Cost Sharing is not required under this solicitation.
- **Indirect Cost (F&A) Limitations:** Indirect costs are limited to a maximum of 25% of the Participant Support stipend amount only (Line F1 on the proposal budget).
- **Other Budgetary Limitations:** Not Applicable

C. Due Dates

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

  April 26, 2010

  March 01, 2011

  First Tuesday in March, Annually Thereafter

Proposal Review Information Criteria

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: Standard NSF award conditions apply.

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

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I. INTRODUCTION

The National Science Foundation (NSF) is charged with ensuring the vitality of the nation's scientific and technological enterprise. It has long been recognized that discoveries and achievements in science and engineering have produced major economic benefits and improvement to the quality of life. NSF's mandate requires a focus on the quality, distribution and effectiveness of the human resource base in science and engineering, including full utilization of all members of the society. In its ***2020 Vision for the National Science Foundation Report*** (NSB 05-142), the National Science Board articulated a vision for the future of science and technology that includes "tapping the talents of all citizens, particularly those belonging to groups that are underrepresented in the science and research enterprise…" In response to this report, the Directorate for Biological Sciences (BIO) invites institutions to create innovative programs that will increase the number of students, especially those from underrepresented groups, who pursue a graduate degree in biology. For the purposes of this solicitation, underrepresented groups are considered to be African Americans, Alaska Natives, American Indians, Hispanic Americans, Native Hawaiians and other Pacific Islanders, and persons with disabilities.

The **Undergraduate Research and Mentoring in the Biological Sciences** (**URM**) program will fund projects that provide year-round support for undergraduate students to engage in exciting and contemporary research activities that are potentially publishable. Research can be in any area of biology supported by the NSF Directorate for Biological Sciences or in interdisciplinary areas supported by BIO. Research conducted by URM students should not have medical or veterinary goals and should involve modern biological tools and methods. Students participating in URM projects should experience the excitement of creating new knowledge in the course of conducting research.

Projects must include a strong mentoring component and emphasize strategies that encourage and enable members of underrepresented groups to enter, and remain in, graduate programs in biology. URM projects must address building the skills needed for full participation in graduate research.

II. PROGRAM DESCRIPTION

URM will fund projects that have strong research and mentoring activities designed to prepare students for successful entry into graduate programs. URM will support projects involving the recruitment, retention and development of undergraduate students, especially those from underrepresented groups, for the purpose of preparing them for graduate study in the biological sciences. Proposed projects are expected to create a URM program that will actively engage students in interesting and exciting research ideas, provide hands-on research experience, and develop their academic skills. Students must be citizens or permanent residents of the United States or its possessions.

URM will enable institutions to create innovative programs that will increase the number and diversity of students who enter graduate research programs in the biological sciences. URM will support well-defined research and mentoring activities that will enable students, especially members of underrepresented groups, to become independent thinkers and effective communicators, as well as professional development activities that will inspire students to pursue exciting careers in biology. The proposing institution is expected to foster an enriched and intellectually stimulating research and educational environment. URM proposals should involve year-round mentoring and include a major emphasis on direct student participation in research leading to publishable data.

URM projects may be based in a single discipline or academic department, or on interdisciplinary or multi-department research opportunities. A proposal should reflect the unique combination of the proposing organization's interests and capabilities and those of any partnering organizations. Partnerships between minority-serving institutions, including Historically Black Colleges and Universities (HBCU), Tribal Colleges and Universities (TCU), and Hispanic-Serving Institutions (HSI), institutions that primarily serve students with disabilities, community colleges, and research intensive institutions are encouraged, if such partnerships will result in a diverse pool of qualified participants as well as an enriched research environment for the students.

Students are expected to be recruited early in their academic career. The project should frame all student activities around an effective mentoring strategy. Factors that are known to increase the likelihood that students will successfully enter and complete graduate research programs should be emphasized. For example, student co-authorship in peer-reviewed publications and scientific conference presentations can be an effective motivator for a student to pursue graduate education. If appropriate, projects may include outreach activities. International collaborations are encouraged.

III. AWARD INFORMATION

Approximately $3,000,000 will be available for this solicitation for new awards in FY 2010, subject to the availability of funds. Under this solicitation, requests may be submitted for funding amounts up to a total of $1,000,000 for up to 5 years. However, funding beyond the first year is contingent upon satisfactory progress in the program. BIO expects to make at least eight awards, depending upon the quality of submissions and the availability of funds.

IV. ELIGIBILITY INFORMATION

Organization Limit:

Proposals may only be submitted by the following:

- Universities and Colleges - Universities and two- and four-year colleges (including community colleges) accredited in, and having a campus located in the US, acting on behalf of their faculty members. Such organizations also are referred to as academic institutions.

PI Limit:

None Specified

Limit on Number of Proposals per Organization:

One (1) proposal per organization

Limit on Number of Proposals per PI:

None Specified

Additional Eligibility Info:

Student Eligibility Requirements: Undergraduate student participants supported with NSF funds must be citizens or permanent residents of the United States or its possessions. An undergraduate student is one who is enrolled in a degree program (part-time or full-time) leading to a baccalaureate or associates degree. High school graduates who have not yet enrolled, and students who have received their bachelor's degrees and are no longer enrolled as undergraduates, are not eligible.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Full Proposal Preparation 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: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg. Paper copies of the GPG may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from nsfpubs@nsf.gov. 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/publications/pub_summ.jsp?ods_key=grantsgovguide). 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 nsfpubs@nsf.gov.

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

Collaborative Proposals. All collaborative proposals submitted as separate submissions from multiple organizations must be submitted via the NSF FastLane system. Chapter II, Section D.4 of the Grant Proposal Guide provides additional information on collaborative proposals.

The following information provides instructions that supplement the Grant Proposal Guide:

1. **Cover Sheet**. The title of the proposal must start with the acronym "**URM: ...**".

2. **Information about Principal Investigators**. A single individual should be designated clearly as Principal Investigator. In the case of collaborative proposals, a Principal Investigator must be identified at *each* institution. This individual will be responsible for overseeing all aspects of the URM award. However, each institution may designate one additional person as co-principal investigator, should developing and operating the URM project involve such shared responsibility. Other anticipated research mentors are listed as Senior Personnel.

3. **Project Summary** (1-page limit). This summary should be intelligible to a general audience. The **intellectual merit** and **anticipated broader impacts** must be addressed separately. **If the intellectual merit and anticipated broader impacts are not addressed separately, the proposal will be returned without review**. Provide a statement of the program goals, a brief description of the types of research projects involved, and a brief description of program activities, including plans for recruitment, selection and retention of students. The number of students and the length of time students will be engaged in the program should be clearly stated. The project summary should include the heading "Project Elements" at the top of the page with the following information: Name of PI, department affiliation and institution; Other institutions and/or organizations involved; Major field/subfields of research; Number of students per cohort, duration of each cohort, total number of cohorts in project, and total number of students involved during the duration of the project.

4. **Project Description**. The project description contains the following items "a" through "g" and is not to exceed 15 pages in length.

a. Results from Prior Support (if applicable). If the PI has received prior support through an NSF Research Experiences for Undergraduates (REU) site, Undergraduate Mentoring in Environmental Biology (UMEB), or Undergraduate Research and Mentoring in the Biological Sciences (URM) award, the proposal must include a section entitled Results from Prior NSF Support within the 15-page project description. This section must describe the earlier project(s) and outcomes in sufficient detail to permit reviewers to reach an informed conclusion regarding the value of the results achieved. This will likely include results from the project evaluation and summary information on recruitment efforts, including the number and demographic make-up of applicants, the number and demographic make-up of participants, participant home institutions (for REU students), career choices of participants; and a list of publications or professional conference presentations resulting from the NSF award(s). This section of the Project Description is limited to a maximum of five pages.

b. Overview. Provide a brief description of the goals and objectives of the proposed URM project, including the areas of the research projects, the targeted student participants, mentoring strategies to be used, and the organizational structure of the URM activity.

c. Nature of Student Activities. Proposals should address the approach to undergraduate research training to be used, and should provide detailed descriptions of examples of research projects that students will pursue. Enhancement activities that will develop the critical thinking and communication skills of the students should also be described in detail. Any other activities, such as seminars, group discussions, lectures, workshops, social activities, etc., should be discussed. The students should be expected to produce both written and oral presentations of their research project. A multi-year schedule of activities should be provided, clearly showing the set of activities in which students are expected to be involved for the URM program. URM students should be expected to spend a minimum of one year in the program. Proposers who wish to engage students in shorter duration projects are directed to the REU program (NSF 09-598), which can be found at http://www.nsf.gov/publications/pub_summ.jsp?WT.z_pims_id=5517&ods_key=nsf09598.

d. The Mentoring Strategy and Research Environment. This subsection should describe the mentoring strategy to be used and whether such a strategy has been practiced at the institution. Any outcomes or evaluation of the mentoring strategy should also be discussed. Interactions between and among students and mentors should be described in detail. This subsection should also describe the experience and record of involvement with undergraduate research of the Principal Investigator, the Co-Principal Investigator and the faculty who may serve as research mentors. The PI should describe the proposing institution's commitment to undergraduate research and mentoring. This should include information on the record of faculty mentors in publishing work involving undergraduate authors and in providing professional development opportunities for undergraduate student researchers.

e. Facilities and Equipment. The facilities, equipment, and other resources available to support the proposed undergraduate research experiences should be described in relation to those activities. The FastLane form on Facilities, Equipment, and Other Resources should be marked "See the Project Description" and the information should be included in this subsection instead.

f. Student Recruitment and Selection. The criteria for, and overall quality of, the student recruitment and selection processes will be an important element in proposal evaluation. The recruitment plan should be as specific as possible, including criteria for student selection and the source and extent of the pool of applicants. Mention should be made specifically of how members of underrepresented groups will be recruited and how many are expected to be involved in the program. Only undergraduate students who are citizens or permanent residents of the United States or its possessions can be supported with funds from a URM award.

g. Project Evaluation and Reporting. The objective of the evaluation process is to measure qualitatively and quantitatively the success of the project in achieving its goals and to provide a mechanism for making mid-program changes to more effectively achieve those goals. For example, evaluation may involve periodic measures throughout the project to ensure that it is progressing satisfactorily according to the project plan, and may involve pre- and post-project measures aimed at determining the degree to which URM activities are making a significant difference in the student's knowledge, skills, interest and career choices in biology. Additionally, a detailed description of a student tracking plan should be included. The plan should contain structured means of tracking participating students beyond graduation, with the aim of gauging the extent to which the URM experience has been a lasting influence on students' career paths.

5. **References Cited**. A list of references to pertinent literature for the URM project must be included.

6. **Biographical Sketches**. The GPG guidelines for biographical material apply; however, senior personnel are encouraged to include publications with undergraduate co-authors (indicate student co-authors with an asterisk) and other activities or accomplishments relevant to a successful URM activity. Senior personnel are the principal investigator; the co-principal investigator, if one has been designated; and other faculty/professionals who will serve as research mentors.

7. **Project Budget**. Project costs must include student stipends, cost of student research supplies and/or laboratory use fees, housing (if appropriate during the summer months), and travel for student participants. The budget may also include items such as faculty salaries, support for program activities, and small equipment and/or supplies, as long as these are justified. Indirect costs are limited to 25% of the Participant Support stipend amount only (Line F1 on the FastLane budget and Field E2 on the Grants.gov budget). As a guide to budget development, the typical annual stipend for a participating student is $15,000. Appropriate levels of supplies, travel, and housing funds should be provided for each student participant. All student participant costs should be entered under proposal budget Section F (FastLane) or Field E (Grants.gov), Participant Support costs.

   Special Note: A grantee may pay stipends as scholarships or wages as it determines appropriate. In either case, money received by individuals may be taxable income under the Internal Revenue Code of 1986 and may also be subject to state or local taxes.

8. **Budget Justification**. A detailed budget justification must be provided.

9. **Supplementary Documentation**. The following items are included in this section: Conflicts of Interest (required), Ethics component (optional), Letters of Commitment (if appropriate), and Postdoctoral Researcher Mentoring Plan (if applicable). No other documents will be accepted.

   - **Conflicts of Interests.** All proposals must include a single list of Conflicts of Interests. The list, in a single alphabetized table, must contain the full names of all individuals with conflicts of interest, for all senior personnel (PI, Co-PI and research mentors) and any named personnel whose salary is requested in the budget. Conflicts to be identified are (1) PhD thesis advisors or advisees, (2) collaborators or co-authors, including postdocs, for the past 48 months, and (3) any other individuals or organizations with which the investigator has financial ties.
   - **Ethics Component** (limited to 2 pages). All NSF projects involving training of undergraduate students must include training in the ethical and responsible conduct of research (RCR). In addition to the institution's regular procedures for providing RCR training, URM proposals may request funding to support additional training in ethics in science or engineering activities in a URM project. The ethics component should describe the following: 1) ethics issues or topics that relate to the scientific content of the project and/or to issues of professional conduct of research; 2) participating faculty and other individuals with appropriate credentials in ethics, including outside ethicists as necessary; 3) activities that show how URM

students and mentors will be engaged in ethics discussions designed to present ethics concepts and skills for resolution of ethical issues, using approaches such as seminars, student presentations and reports, role-playing, case studies, and outside speaker presentations; 4) products such as reports, presentations, and web-based materials; and 5) a formative evaluation plan to be used to improve the component.

Budgets may include up to $4,000 each year in support of ethics activities. A separate budget sheet for this component is not possible in FastLane or Grants.gov. The total ethics budget should be placed in Other Direct Costs (Line G6 in FastLane or Field F8 in Grants.gov) on the proposal budget and must be itemized in the budget justification, with a total shown for the items equal to the amount entered on Line G6 or Field F8 of the proposal budget.

- **Letters of Commitment**. Signed letters of commitment documenting collaborative arrangements of significance to the proposal should be scanned and placed in Supplementary Documentation section. Letters may be relevant where the awardee and performing institutions are different, where faculty or facilities of more than one institution and/or organization are to be employed, or where international activities are arranged.
- **Postdoctoral Researcher Mentoring Plan.** Each proposal that requests funding to support postdoctoral researchers must include a description of the mentoring activities that will be provided for such individuals. Proposals that do not comply with this requirement will be returned without review (see the PAPP Guide Part I: Grant Proposal Guide Chapter II for further information about the implementation of this new requirement). This mentoring plan is limited to one page in length.

B. Budgetary Information

Cost Sharing: Cost sharing is not required under this solicitation.

Indirect Cost (F&A) Limitations: Indirect costs are limited to a maximum of 25% of the Participant Support stipend amount only (Line F1 on the proposal budget).

C. Due Dates

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

  April 26, 2010

  March 01, 2011

  First Tuesday in March, Annually Thereafter

D. FastLane / Grants.gov Requirements

- **For Proposals Submitted Via FastLane:**

  Detailed technical instructions regarding the technical aspects of 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 funding opportunity.

  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. Further instructions regarding this process are available on the FastLane Website at: https://www.fastlane.nsf.gov/fastlane.jsp.

- **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: http://www.grants.gov/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: support@grants.gov. 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 where they will be reviewed if they meet NSF proposal preparation requirements. 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 of interest with the proposal.

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, original, or potentially transformative 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?

Examples illustrating activities likely to demonstrate broader impacts are available electronically on the NSF website at: http://www.nsf.gov/pubs/gpg/broaderimpacts.pdf.

Mentoring activities provided to postdoctoral researchers supported on the project, as described in a one-page supplementary document, will be evaluated under the Broader Impacts criterion.

NSF staff also 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:

Reviewers will be asked to interpret the two basic NSF review criteria in the context of the URM program. In addition, they will be asked to place emphasis on the following considerations:

1. The appropriateness, value, and level of innovation of the proposed URM program for the student participants, particularly the appropriateness of the research project(s) for undergraduate involvement and the nature and extent of student participation in these activities.
2. The quality of the research environment, including the record of the mentor(s) with undergraduate research participation (especially the record of mentors in working with students from underrepresented groups), the facilities, and the professional development opportunities.
3. The quality of the mentoring strategies to be used and their appropriateness and likely success for nurturing students in the pursuit of a research career.
4. Appropriateness of the student recruitment and selection plans, including the recruitment of students from underrepresented groups.
5. Quality of plans for student preparation and follow-through designed to promote continuation of student interest and involvement in research.
6. Effectiveness of the plans for managing the project and evaluating the outcomes, appropriateness and cost-effectiveness of the budget, and commitment of partners, if relevant.

B. Review and Selection Process

Proposals submitted in response to this program solicitation will be reviewed by Ad hoc Review and/or Panel Review.

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

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 deadline or target date, or receipt date, whichever is later. 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 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.B. 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 (GC-1); * or Research Terms and Conditions * and (5) any announcement or other NSF issuance that may be incorporated by reference in the award letter. Cooperative agreements also are administered in accordance with NSF Cooperative Agreement Financial and Administrative Terms and Conditions (CA-FATC) and the applicable Programmatic Terms and Conditions. NSF awards are electronically signed by an NSF Grants and Agreements Officer and transmitted electronically to the organization via e-mail.

*These documents may be accessed electronically on NSF's Website at http://www.nsf.gov/awards/managing/award_conditions.jsp?org=NSF. Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from nsfpubs@nsf.gov.

More comprehensive information on NSF Award Conditions and other important information on the administration of NSF awards is contained in the NSF *Award & Administration Guide* (AAG) Chapter II, available electronically on the NSF Website at http://www.nsf.gov/publications/pub_summ.jsp?ods_key=aag.

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, and a project outcomes report for the general public.

Failure to provide the required annual or final project reports, or the project outcomes report 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.

PIs 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. PIs 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. The project outcomes report must be prepared and submitted using Research.gov. This report serves as a brief summary, prepared specifically for the public, of the nature and outcomes of the project. This report will be posted on the NSF website exactly as it is submitted by the PI.

The project report should include a list of student participants and their level of academic education, major field of study, title of research project, name of faculty mentor and a brief description of research accomplishments. Results of the recruitment and selection efforts should be described in detail, including detailed breakdown of the demographic information on the applicant and participant groups. Data for the project report should feed into the project evaluation plan, which in turn should address the project's success in meeting its goals. Any deviations from the proposed plan should be described.

VIII. AGENCY CONTACTS

General inquiries regarding this program should be made to:

- Diana E. Anderson, telephone: (703) 292-8470, email: danderso@nsf.gov
- Sally E. O'Connor, telephone: (703) 292-8470, email: soconnor@nsf.gov

For questions related to the use of FastLane, contact:

- FastLane Help Desk, telephone: 1-800-673-6188; e-mail: fastlane@nsf.gov.

For questions 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, National Science Foundation Update is a free e-mail subscription service 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 when new publications are issued that match their identified interests. Users can subscribe to this service by clicking the "Get NSF Updates by Email" link on the NSF web site.

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 http://www.grants.gov.

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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.

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- **Location:** 4201 Wilson Blvd. Arlington, VA 22230
- **For General Information** (NSF Information Center)**:** (703) 292-5111
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  Send an e-mail to: nsfpubs@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; and 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 proposer 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 or other entities needing information regarding applicants or nominees as part of a joint application review process, or in order to coordinate programs or policy; 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," 69 Federal Register 26410 (May 12, 2004), and NSF-51, "Reviewer/Proposal File and Associated Records, " 69 Federal Register 26410 (May 12, 2004). 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 Office of Management and Budget (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 the burden estimate and any other aspect of this collection of information, including

suggestions for reducing this burden, to:

Suzanne H. Plimpton
Reports Clearance Officer
Division of Administrative Services
National Science Foundation
Arlington, VA 22230