

Cross-disciplinary Research at Undergraduate Institutions (C-RUI)

Program Solicitation

NSF 04-536

Replaces Document NSF 03-514



National Science Foundation

Directorate for Biological Sciences

Division of Biological Infrastructure

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

June 15, 2004

REVISIONS AND UPDATES

This Program Solicitation replaces [NSF 03-514](#). Three significant changes have been made in this solicitation: (1) To reflect the unique cross-disciplinary nature of this program, the name has been changed from Collaborative Research at Undergraduate Institutions to Cross-disciplinary Research at Undergraduate Institutions, using the same acronym (C-RUI). (2) The deadline for submission has been changed from January 10, 2004, to June 15, 2004. Awards will be made in late Fall 2004. (3) An alphabetized list of conflicts of interest is now required in the Special Information and Supplementary Documentation section.

Proposals submitted in anticipation of the January 10, 2004, deadline may be withdrawn and resubmitted by June 15, 2004, after modifications are made to conform to this new solicitation.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Cross-disciplinary Research at Undergraduate Institutions (C-RUI)
Formerly called Collaborative Research at Undergraduate Institutions

Synopsis of Program:

The goal of the Cross-disciplinary Research at Undergraduate Institutions (C-RUI) is to support research efforts involving faculty from different fields and undergraduate students at predominantly undergraduate institutions. This program is specifically targeted toward cross-disciplinary research projects that require contributions from more than one disciplinary area. C-RUI is also intended to facilitate greater diversity in

student participation and to contribute to the development of the next generation of scientists well-trained in 21st century biology.

Cognizant Program Officer(s):

- Sally E. O'Connor, Program Director, Directorate for Biological Sciences, Division of Biological Infrastructure, 615 N, telephone: (703) 292-8470, email: soconnor@nsf.gov

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

- 47.074 --- Biological Sciences

Eligibility Information

- **Organization Limit:**

Only predominantly undergraduate institutions as defined in the Research at Undergraduate Institutions program announcement, NSF 00-144, are eligible to submit proposals. Minority-serving institutions and two year colleges are especially encouraged to apply. Eligible institutions may partner with non-RUI academic institutions and not-for-profit research institutions, provided that a majority of the key personnel and all undergraduate students to be involved are from RUI institutions.

- **PI Eligibility Limit:**

The PI must come from an eligible academic department. Eligibility is defined as follows: (1) the department must offer courses that qualify for degree credit in NSF-supportable fields, and (2) the department must not offer doctorate programs. However, co-PIs may come from departments that offer Ph.D. programs.

- **Limit on Number of Proposals:** None Specified.

Award Information

- **Anticipated Type of Award:** Standard or Continuing Grant
- **Estimated Number of Awards:** 8 - Up to 8 awards, contingent upon the quality of proposals received and availability of funds
- **Anticipated Funding Amount:** \$2,000,000 - Approximately \$2 million for new awards in FY 2005, subject to availability of funds

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- **Full Proposal Preparation Instructions:** This solicitation contains information that deviates from the standard Grant Proposal Guide (GPG) proposal preparation guidelines. Please see the full text of this solicitation for further information.

B. Budgetary Information

- **Cost Sharing Requirements:** Cost Sharing is not required.
- **Indirect Cost (F&A) Limitations:** Not Applicable.

- **Other Budgetary Limitations:** Not Applicable.

C. Due Dates

- **Full Proposal Deadline Date(s)** (due by 5 p.m. proposer's local time):
June 15, 2004

Proposal Review Information

- **Merit Review Criteria:** National Science Board approved criteria apply.

Award Administration Information

- **Award Conditions:** Standard NSF award conditions apply.
- **Reporting Requirements:** Standard NSF reporting requirements apply.

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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. Integration of research and education is one of NSF's core strategies designed to build a strong resource base for the nation's research and education programs in all areas of science and engineering. In order to help assure a broad base for this endeavor, NSF encourages research by faculty at predominantly undergraduate institutions, including two year colleges. One specific example of this activity is the NSF-wide Research in Undergraduate Institution (RUI) program. The RUI program announcement, NSF 00-144, can be found at <http://www.nsf.gov/cgi-bin/getpub?nsf00144>. Section II.B. of the RUI Program Announcement refers to "Collaborative Faculty Research Projects" and directs potential applicants to the appropriate NSF Directorate for further instruction. It is the intention of the Directorate for Biological Sciences (BIO) to participate in this activity by continuing the Collaborative Research at Undergraduate Institutions (C-RUI) activity that began in Fiscal Year 1995, and now renamed Cross-disciplinary Research at Undergraduate Institutions.

Increasingly, advances in research in the biological sciences depend on skills and knowledge that extend beyond traditional disciplinary boundaries because 21st century biology is multidimensional, multidisciplinary and integrative. In order to advance biology in the 21st century, a new way to provide research experiences for scientists at all levels is needed. Especially acute is a need for multidisciplinary research experiences at the undergraduate level. C-RUI is an attempt to meet this identified need.

II. PROGRAM DESCRIPTION

A. Program Goals

The goal of C-RUI is to support collaborative, multidisciplinary research efforts at predominantly undergraduate institutions, involving faculty and undergraduate students at these institutions. This program is specifically targeted toward cross-disciplinary research projects that require contributions from more than one disciplinary area (e.g., biology and geoscience, biology and chemistry, biology and mathematics, biology and computer science, etc.). C-RUI is intended to catalyze a cultural change in undergraduate research and education -- for students, faculty and institutions -- by establishing innovative models for collaboration that transcend traditional disciplinary boundaries. It is also intended to facilitate greater diversity in student participation and to contribute to the development of the next generation of well-trained scientists.

B. Program Features of C-RUI

The proposed cross-disciplinary research plan must focus on a research problem in the biological sciences that is best approached from broad multidisciplinary perspectives. A cross-disciplinary research group must consist of three or more faculty and up to ten undergraduates from the predominantly undergraduate institution(s). C-RUI research projects may be carried out entirely within the predominantly undergraduate institution(s), or may be collaborative projects with institutions other than predominantly undergraduate institutions. In the latter case, a majority of key personnel (PIs and co-PIs) and all the students involved must be from the predominantly undergraduate institution.

The research project is expected to have a research theme focused on questions in the biological sciences, employing approaches that are explicitly cross-disciplinary in nature. The collaborative cross-disciplinary research project should take advantage of the strengths and expertise available at the applicant's institution, resulting in a strong research activity whose scientific merit is clearly enhanced by the collaboration. If appropriate, the applicant may form a partnership with institutions such as universities, museums, field stations, and marine laboratories that can bring resources not available at the applicant's institution. All students involved in the program must come from predominantly undergraduate institutions and the majority of the research and education activities must be conducted at the predominantly undergraduate institution. In order to foster multidisciplinary training and education, students are expected to have a minimum of 2 mentors and be exposed to all aspects of the project.

The program will provide support for:

- Faculty at predominantly undergraduate institutions to develop multidisciplinary research programs that enhance their research capabilities and promote undergraduate training through quality hands-on research experiences.
- Development of new research-based education and training activities integrated in the proposed multidisciplinary research. Examples would include, but are not limited to, a newly developed course or course module based on the proposed research project, revision of an existing course that highlights concepts and techniques in multidisciplinary areas of research, or enhancement of academic programs to attract students in multidisciplinary academic tracks.

Equipment necessary to conduct the proposed research (up to \$50,000 in the first year only) and education activities at the predominantly undergraduate institution. The equipment must be well justified and a vendor quote may be attached with the application.

- Participation of two-year colleges and minority-serving institutions through partnerships with research-intensive institutions, provided that the submitting institution is RUI-eligible and that primary research activities are performed at the RUI institution.

Please note that the Directorate for Biological Sciences does not provide support for bioscience research with disease related goals, including work on the etiology, diagnosis and treatment of physical and mental disease, abnormality or malfunction in human beings or animals. Animal models of such conditions and the development and testing of drugs and other procedures for their treatment also are not eligible for support.

III. ELIGIBILITY INFORMATION

Eligibility to submit a C-RUI proposal consists of institutional and departmental criteria, both of which must be met. A representative of the institution submitting a C-RUI proposal signs a Certification of RUI Eligibility included in the Supplementary Documentation section of the proposal.

- A. **Eligible "predominantly undergraduate" institutions** include U.S. two-year, four-year, masters-level, and small doctoral colleges and universities. Eligible institutions (1) grant baccalaureate degrees in NSF-supported fields, or provide programs of instruction for students pursuing such degrees with institutional transfers (e.g., two-year schools); (2) have undergraduate enrollment exceeding graduate enrollment; and (3) award no more than an average of 10 Ph.D. and/or D.Sc. degrees per year in all disciplines that NSF supports, averaged over 2 to 5 years preceding proposal submission. Proposals involving more than one academic institution are acceptable; however, the applicant institution must be a predominantly undergraduate institution and must have overall management responsibility. For proposals involving collaborations between predominantly undergraduate institutions and other institutions, most of the research must be conducted at the predominantly undergraduate institution.

- B. **Eligible departments** (principal investigators) (1) must offer courses that qualify for bachelor's degree credit in NSF-supportable fields and (2) may not offer a doctorate program in the department of the designated PI. The co-PIs may be in departments that offer Ph.D. programs.

The principal investigator for a C-RUI proposal must be employed by, or have a commitment to be employed by, an eligible home institution (i.e., a predominantly undergraduate institution) at the time the proposal is submitted. In addition, the principal investigator must be from an eligible (i.e., non-doctoral) department. Co-principal investigators may be from other institutions or from doctoral departments.

Duplicate submission of the same proposal to another NSF program is not permitted. However, an investigator may submit a different proposal for support of another project while a proposal is pending. The Directorate for Biological Sciences will not accept proposals that are duplicates of proposals being submitted to another Federal agency for simultaneous consideration, except for proposals from beginning investigators (never had an NSF research grant before). The *Grant Proposal Guide* should be consulted for definitions and exceptions to this rule and for limitations on the kinds of research that NSF supports. See "General" on page 1 of the GPG.

IV. AWARD INFORMATION

Approximately \$2 million is available for new awards in FY 2005, subject to availability of funds.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Full Proposal Instructions:

Proposals submitted in response to this program announcement/solicitation should be prepared and submitted in accordance with the general guidelines contained in the NSF *Grant Proposal Guide* (GPG). The complete text of the GPG is available electronically on the NSF Website at: <http://www.nsf.gov/cgi-bin/getpub?gpg>. Paper copies of the GPG may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from pubs@nsf.gov.

NOTE: C-RUI proposals differ from other proposals primarily in that they must contain (1) Certification of RUI Eligibility, and (2) a separate RUI Impact Statement. The NSF FastLane system should be used for submission of all proposals under the C-RUI activity.

Cover Sheet. So that your proposal is properly identified and directed, please follow these instructions for NSF Form 1207, "Cover Sheet for Proposal to the National Science Foundation." From the pull down menu for the program announcement/solicitation block, select the number for this C-RUI announcement. From the ensuing screen, select the Division (DBI) and Program (C-RUI) to which the proposal should be directed. Include the acronym "C-RUI" in the title of the proposal entered on the Cover Sheet, e.g. "C-RUI: Metabolic Cycles in Arctic Ruminants."

Project Summary (1-page limit). Provide a brief (300 words or less) description of the research program. At the top of this page include the title of the project, the name of the PI and the lead institution, list of co-PIs and other key participants with their institutions. This summary should be intelligible to a general audience. **Be sure to include both the intellectual merit and anticipated broader impacts. If the scientific objectives and anticipated broader impacts are not addressed, the proposal will be returned without review** (See GPG).

Project Description (maximum 15 pages). Proposers should pay particular attention to the Project Description, which is the

principal part of the proposal. It is a detailed statement of the work to be undertaken and should include:

- Objectives for the work and its expected significance; relation to the present state of knowledge and to work in progress in the field; description of the general plan of the work, including experimental methods and analysis and, if appropriate, plans for archival materials or data-sharing. This description must contain sufficient detail to allow the reviewers to assess the scientific merit of the project.
- The biological question being investigated and a description of the expected contribution of each team member to the proposed research project. Collaborative proposals are expected to include (1) a strong research activity whose scientific merit is clearly enhanced by development of the collaboration, (2) a project theme that takes advantage of the strengths of the particular institution(s), justifying the nature of the research in that context, and (3) a research plan that enhances the research productivity of all faculty and student investigators involved.
- A description of any educational activities associated with the research, if applicable; how the development of any new course, course module, course revision, or academic track, if part of the proposed plan, will be fostered and when such new academic offerings are expected to be implemented; any plans for sustaining implementation beyond the period of the award; how the equipment, if requested, will be used for educational activities. Any plans for developing multidisciplinary academic majors/minors program should also be described, if appropriate.
- A description of how student involvement in the research project and in the presentation of research results will be fostered; how the students will be recruited and selected as well as any plans for attracting members of underrepresented minority groups to the project; how the research will be integrated with the students' education; how the equipment, if requested, will enhance the research; how maintenance of the equipment beyond the period of the award will be sustained.
- If applicable, a description of any outreach activities that will allow the scientific community and the general public to become aware of scientific findings resulting from the proposed research; any additional activity that will enhance the knowledge and appreciation of all students (K-12, undergraduates, etc.) for science in general.
- A section entitled "Results from Prior NSF Support" (if any of the participating faculty members has held an NSF award for research or instrumentation within the last 5 years). If more than one NSF award is involved, this section should describe the project most relevant to the proposed new project. This section must describe the earlier project and its outcomes in sufficient detail to allow reviewers to judge the scientific value of the results achieved in the previous NSF-supported project. Brief discussions of the outcomes of several projects may be appropriate in a collaborative proposal. This part of the project description should not exceed two pages.

References Cited (See GPG)

Biographical Sketches

See GPG for format. Faculty participants are encouraged to include in their "Biographical Sketches" publications with undergraduate co-authors (with student names labeled by an asterisk).

Budget

See GPG for format and allowable costs. Also, see II.B. above.

Current and Pending Support

See GPG for format. This is required for all key personnel.

Facilities, Equipment and Other Resources (See GPG)

Special Information and Supplementary Documentation

In addition to applicable items listed under the "Special Information and Supplementary Documentation" section of GPG, C-RUI proposals must include (1) **Impact Statement**; (2) **Certification of RUI Eligibility**; and (3) **Letters of Commitment** (4) **Alphabetized List of Conflicts**.

Impact Statement. All C-RUI proposals must include an Impact Statement (maximum length - 2 pages). The statement should provide information that a reviewer will find helpful in assessing the likely impact of the proposed research activity on the research environment of the predominantly undergraduate institutions(s), on the career(s) of the faculty participants, on the development of student participants, and on the ability of the involved department(s) to prepare students for entry into advanced-degree programs and/or careers in science and engineering. An enhanced departmental environment may be reflected in direct student training in research and in increased involvement of the faculty in competitive research, which in turn leads to improved student preparation. It may also be reflected in curricular impact and faculty development.

The Impact Statement should highlight the record of the department(s) and institution(s) in educating undergraduates for science and engineering careers; the plans to attract qualified undergraduate students to the project, including the criteria for their selection; provisions that will increase the participation of groups underrepresented in science and engineering; and any plans for measuring the effect of participation in the project on the participating students both during and after their undergraduate years. Also of interest is the anticipated contribution of new research tools (instrumentation, databases, etc.) that are useful for educational and research.

The Impact Statement may include information on factors affecting research productivity such as teaching loads, availability (or lack) of support personnel, nature of experimental and computational facilities, and features of the student population. It may also describe institutional support for research activity by faculty and students and the anticipated impact of that support on the proposed project.

If educational activities are included in the proposal, the Impact Statement may also include the impact of such educational activities on the overall academic offerings of the institutions and the preparation of students for careers in science.

Certification of RUI Eligibility. The following Certification, executed by an Authorized Institutional Representative, must be provided in C-RUI proposals. The signed Certification should be scanned and included in the proposal as Supplementary Documentation. Institutions are allowed some leeway in the period over which the number of doctorates is averaged, in order to avoid negative effects of short-term anomalies in the number of doctorates awarded.

-----**Certification of RUI Eligibility**-----

"By submission of this proposal, the institution hereby certifies that the originating and managing institution is an institution that offers courses leading to a bachelor's or master's degree, but has awarded an average of no more than 10 doctoral degrees per year in NSF-supported disciplines over the 2-to-5-year period preceding proposal submission."

Authorized Institutional Representative

Typed Name and Title.....Signature.....Date.....

Letters of Commitment. Signed letters of commitment, documenting the proposed collaborative arrangements of

significance to the project, should be scanned and included in the proposal as supplementary documentation. Such letters are relevant when collaborators are not employees of the awardee institution or when the project depends on access to facilities or instrumentation at other institutions. Letters of endorsement are not permitted.

Alphabetized List of Conflicts. A table should be sent as a single document through the Single Copy Document section of FastLane at the time of proposal submission. The document should consist of a list in table form, containing the full names (Last name, first name, middle initial) and affiliations (institution name and department) of all people having a conflict of interest with any senior personnel (PI and Co-PIs) and any named personnel member whose salary is requested in the project budget. Conflicts to be identified are (1) Ph.D. thesis advisors or advisees, (2) postdoctoral advisors or advisees, (3) collaborators or co-authors for the past 48 months, and (4) any other individuals or institutions with which the investigator has financial ties (please specify type). Provide only the allowable and applicable items as noted in the GPG. Include the materials in the FastLane submission by transferring them as .PDF files through the "Supplementary Docs" module of the FastLane system.

Proposers are reminded to identify the program announcement/solicitation number (04-536) in the program announcement/solicitation block on the proposal Cover Sheet. Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.

B. Budgetary Information

Cost Sharing:

Cost sharing is not required in proposals submitted under this Program Solicitation.

C. Due Dates

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

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

June 15, 2004

D. FastLane Requirements

Proposers are required to prepare and submit all proposals for this announcement/solicitation through the FastLane system. Detailed instructions for proposal preparation and submission via FastLane are available at: <http://www.fastlane.nsf.gov/a1/newstan.htm>. For FastLane user support, call the FastLane Help Desk at 1-800-673-6188 or e-mail fastlane@nsf.gov. The FastLane Help Desk answers general technical questions related to the use of the FastLane system. Specific questions related to this program announcement/solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this announcement/solicitation.

Submission of Electronically Signed Cover Sheets. The Authorized Organizational Representative (AOR) must electronically sign the proposal Cover Sheet to submit the required proposal certifications (see Chapter II, Section C of the [Grant Proposal Guide](#) for a listing of the certifications). The AOR must provide the required electronic certifications within five working days following the electronic submission of the proposal. Proposers are no longer required to provide a paper copy of the signed Proposal Cover Sheet to NSF. Further instructions regarding this process are available on the FastLane Website at: <http://www.fastlane.nsf.gov>

VI. PROPOSAL REVIEW INFORMATION

A. NSF Proposal Review Process

Reviews of proposals submitted to NSF are solicited from peers with expertise in the substantive area of the proposed research or education project. These reviewers are selected by Program Officers charged with the oversight of the review process. NSF invites the proposer to suggest, at the time of submission, the names of appropriate or inappropriate reviewers. Care is taken to ensure that reviewers have no conflicts with the proposer. Special efforts are made to recruit reviewers from non-academic institutions, minority-serving institutions, or adjacent disciplines to that principally addressed in the proposal.

The National Science Board approved revised criteria for evaluating proposals at its meeting on March 28, 1997 ([NSB 97-72](#)). All NSF proposals are evaluated through use of the two merit review criteria. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities.

On July 8, 2002, the NSF Director issued [Important Notice 127](#), Implementation of new Grant Proposal Guide Requirements Related to the Broader Impacts Criterion. This Important Notice reinforces the importance of addressing both criteria in the preparation and review of all proposals submitted to NSF. NSF continues to strengthen its internal processes to ensure that both of the merit review criteria are addressed when making funding decisions.

In an effort to increase compliance with these requirements, the January 2002 issuance of the GPG incorporated revised proposal preparation guidelines relating to the development of the Project Summary and Project Description. Chapter II of the GPG specifies that Principal Investigators (PIs) must address both merit review criteria in separate statements within the one-page Project Summary. This chapter also reiterates that broader impacts resulting from the proposed project must be addressed in the Project Description and described as an integral part of the narrative.

Effective October 1, 2002, NSF will return without review proposals that do not separately address both merit review criteria within the Project Summary. It is believed that these changes to NSF proposal preparation and processing guidelines will more clearly articulate the importance of broader impacts to NSF-funded projects.

The two National Science Board approved merit review criteria are listed below (see the [Grant Proposal Guide](#) Chapter III.A for further information). The criteria include considerations that help define them. These considerations are suggestions and not all will apply to any given proposal. While proposers must address both merit review criteria, reviewers will be asked to address only those considerations that are relevant to the proposal being considered and for which he/she is qualified to make judgments.

What is the intellectual merit of the proposed activity?

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

What are the broader impacts of the proposed activity?

How well does the activity advance discovery and understanding while promoting teaching, training, and learning? How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)? To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks, and partnerships? Will the results be disseminated broadly to enhance scientific and technological understanding? What may be the benefits of the proposed activity to society?

NSF staff will give careful consideration to the following in making funding decisions:

Integration of Research and Education

One of the principal strategies in support of NSF's goals is to foster integration of research and education through the

programs, projects, and activities it supports at academic and research institutions. These institutions provide abundant opportunities where individuals may concurrently assume responsibilities as researchers, educators, and students and where all can engage in joint efforts that infuse education with the excitement of discovery and enrich research through the diversity of learning perspectives.

Integrating Diversity into NSF Programs, Projects, and Activities

Broadening opportunities and enabling the participation of all citizens -- women and men, underrepresented minorities, and persons with disabilities -- is essential to the health and vitality of science and engineering. NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports.

B. Review Protocol and Associated Customer Service Standard

All proposals are carefully reviewed by at least three other persons outside NSF who are experts in the particular field represented by the proposal. Proposals submitted in response to this announcement/solicitation will be reviewed by Ad Hoc Review followed by Panel Review.

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

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

NSF is striving to be able to tell applicants whether their proposals have been declined or recommended for funding within six months. The time interval begins on the date of receipt. The interval ends when the Division Director accepts the Program Officer's recommendation.

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

VII. AWARD ADMINISTRATION INFORMATION

A. Notification of the Award

Notification of the award is made to *the submitting organization* by a Grants Officer in the Division of Grants and Agreements. Organizations whose proposals are declined will be advised as promptly as possible by the cognizant NSF Program Division administering the program. Verbatim copies of reviews, not including the identity of the reviewer, will be provided automatically to the Principal Investigator. (See section VI.A. for additional information on the review process.)

B. Award Conditions

An NSF award consists of: (1) the award letter, which includes any special provisions applicable to the award and any numbered amendments thereto; (2) the budget, which indicates the amounts, by categories of expense, on which NSF has

based its support (or otherwise communicates any specific approvals or disapprovals of proposed expenditures); (3) the proposal referenced in the award letter; (4) the applicable award conditions, such as Grant General Conditions (NSF-GC-1); * or Federal Demonstration Partnership (FDP) Terms and Conditions * and (5) any announcement or other NSF issuance that may be incorporated by reference in the award letter. Cooperative agreement awards also are administered in accordance with NSF Cooperative Agreement Terms and Conditions (CA-1). Electronic mail notification is the preferred way to transmit NSF awards to organizations that have electronic mail capabilities and have requested such notification from the Division of Grants and Agreements.

*These documents may be accessed electronically on NSF's Website at http://www.nsf.gov/home/grants/grants_gac.htm. 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>.

C. Reporting Requirements

For all multi-year grants (including both standard and continuing grants), the PI must submit an annual project report to the cognizant Program Officer at least 90 days before the end of the current budget period.

Within 90 days after the expiration of an award, the PI also is required to submit a final project report. Failure to provide final technical reports delays NSF review and processing of pending proposals for the PI and all Co-PIs. PIs should examine the formats of the required reports in advance to assure availability of required data.

PIs are required to use NSF's electronic project reporting system, available through FastLane, for preparation and submission of annual and final project reports. This system permits electronic submission and updating of project reports, including information on project participants (individual and organizational), activities and findings, publications, and other specific products and contributions. PIs will not be required to re-enter information previously provided, either with a proposal or in earlier updates using the electronic system.

VIII. CONTACTS FOR ADDITIONAL INFORMATION

General inquiries regarding this program should be made to:

- Sally E. O'Connor, Program Director, Directorate for Biological Sciences, Division of Biological Infrastructure, 615 N, 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, email: fastlane@nsf.gov
- Nicole S Harris, Division of Biological Infrastructure, telephone: 703-292-8470, email: biofl@nsf.gov

IX. OTHER PROGRAMS OF INTEREST

The NSF *Guide to Programs* is a compilation of funding for research and education in science, mathematics, and engineering. The NSF *Guide to Programs* is available electronically at <http://www.nsf.gov/cgi-bin/getpub?gp>. General descriptions of NSF programs, research areas, and eligibility information for proposal submission are provided in each chapter.

Many NSF programs offer announcements or solicitations concerning specific proposal requirements. To obtain additional information about these requirements, contact the appropriate NSF program offices. Any changes in NSF's fiscal year programs occurring after press time for the *Guide to Programs* will be announced in the NSF *E-Bulletin*, which is updated daily on the NSF Website at <http://www.nsf.gov/home/ebulletin>, and in individual program announcements/solicitations. Subscribers can also sign up for NSF's *Custom News Service* (<http://www.nsf.gov/home/cns/start.htm>) to be notified of new funding opportunities that become available.

ABOUT THE NATIONAL SCIENCE FOUNDATION

The National Science Foundation (NSF) funds research and education in most fields of science and engineering. Awardees are wholly responsible for conducting their project activities and preparing the results for publication. Thus, the Foundation does not assume responsibility for such findings or their interpretation.

NSF welcomes proposals from all qualified scientists, engineers and educators. The Foundation strongly encourages women, minorities and persons with disabilities to compete fully in its programs. In accordance with Federal statutes, regulations and NSF policies, no person on grounds of race, color, age, sex, national origin or disability shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving financial assistance from NSF, although some programs may have special requirements that limit eligibility.

Facilitation Awards for Scientists and Engineers with Disabilities (FASED) provide funding for special assistance or equipment to enable persons with disabilities (investigators and other staff, including student research assistants) to work on NSF-supported projects. See the GPG Chapter II, Section D.2 for instructions regarding preparation of these types of proposals.

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

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

- **Location:** 4201 Wilson Blvd. Arlington, VA 22230
- **For General Information** (NSF Information Center): (703) 292-5111
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