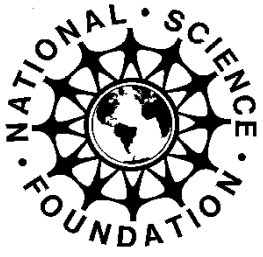

NATIONAL SCIENCE FOUNDATION
Arlington, Virginia 22230

Grant Proposal Guide

NSF 98-2
October 1997
(Replaces NSF 95-27)

National Science Foundation
Office of Budget, Finance & Award Management
4201 Wilson Boulevard
Arlington, VA 22230

August 1, 1997

Dear Colleagues:

We have published an updated version of the NSF *Grant Proposal Guide* (GPG) (NSF 98-2) and *Proposal Forms Kit* (98-3). This document supersedes the prior version of the GPG (NSF 95-27) and the Proposal Forms Kit (95-28).

The principal purpose of this revision is to incorporate the revised NSF merit review criteria which were disseminated by NSF Important Notice No. 121, *New Criteria for NSF Proposals*, dated July 10, 1997. (See GPG Chapter III.) Other sections have been revised, as appropriate, for clarity as well as to make the Guide consistent with current NSF policies, practices and procedures. A summary of significant changes is included on page (iii) of the GPG.

As stated in Important Notice 121, the new merit review criteria for reviewing proposals will be effective for proposals submitted on or after October 1, 1997. For consistency with this requirement, this version of the GPG also will be effective October 1, 1997. After October 1, 1997, the previous version of the GPG should be discarded.

The complete text of the GPG (as well as other NSF policy documents) is available electronically on NSF's home page at www.nsf.gov. In the near future, the GPG (including all forms) also will be available on the NSF home page in both Microsoft Word and HTML formats.

Please address any questions or comments about the GPG to the Division of Contracts, Policy & Oversight, Policy Office, on 703-306-1243 or by e-mail to policy@nsf.gov.

Joseph L. Kull
Chief Financial Officer

ABOUT THE NATIONAL SCIENCE FOUNDATION

The National Science Foundation (NSF) is an independent Federal agency, created by the National Science Foundation Act of 1950, as amended (42 USC 1861-75). Its aim is to promote and advance scientific and engineering progress in the United States (U.S.). The Foundation is also committed to ensuring the nation's supply of scientists, engineers and science educators.

NSF funds research and education in most fields of science and engineering. It does this through grants, contracts and cooperative agreements to more than 2,000 colleges, universities and other research and/or education organizations in all parts of the U.S. NSF receives approximately 30,000 proposals annually for new or renewal support for research, graduate and postdoctoral fellowships, and math/science/engineering education projects, and makes approximately 9,000 new awards. These typically are awarded to universities, colleges, academic consortia, non-profit institutions and small businesses. The agency operates no laboratories itself but does support National Research Centers, certain oceanographic vessels and Antarctic research stations. The Foundation also supports cooperative research between universities and industry and U.S. participation in international scientific efforts.

NSF is generally structured by fields of science and engineering and science education but also considers activities that cross traditional fields by coordinating review across the Foundation. The NSF's staff is assisted by advisors, primarily from the scientific and engineering communities, who serve on panels or as mail reviewers of proposals. NSF Program Officers who are experts in the field or area of the proposal are responsible for award recommendations.

Grantees 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 on behalf of all qualified scientists, engineers and educators. The Foundation strongly encourages women, minorities and persons with disabilities to participate 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.

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. (For more information, see Section V.G.)

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 regarding NSF programs, employment or general information. To access TDD phone (703) 306-0090; FIRS 1-800-877-8339.

Copies of this Guide (NSF 98-2) or the NSF Proposal Forms Kit (NSF 98-3) (which is contained as part of NSF 98-2) may be ordered from:

NSF Clearinghouse
PO Box 218
Jessup, MD 20794-0218

Telephone: 301-947-2722
e-mail: pubs@nsf.gov

FOREWORD

This Guide provides guidance for the preparation of unsolicited proposals to NSF. Some NSF programs have specific program announcements/solicitations which may modify the general provisions of this Guide. Contact with NSF program personnel prior to proposal preparation is encouraged.

Information in this Guide applies to all programs listed in Appendix A and related activities, such as foreign travel, conferences, symposia, equipment and facilities. Sources of additional information on these related activities are noted in the text or are available from appropriate Foundation programs.

The *Proposal Forms Kit* contained in this Guide is also available separately as NSF 98-3.

General information about NSF programs may be found in the NSF *Guide to Programs*. Additional information about special requirements of individual NSF programs may be obtained from the appropriate Foundation program offices. Information about most program deadlines and target dates for proposals appears in the *NSF Bulletin*. The *Bulletin* is issued monthly except July and August, and gives key dates on grant proposals due at NSF for the next four months. The October *Bulletin* gives key dates for an entire year. (NSF programs that do not have a specific deadline or target date are not listed in the *Bulletin*. Most of these programs will accept proposals any time during the year.) Program deadline and target date information also appears in individual program announcements. Lists of deadlines and target dates also are available electronically on the NSF home page at http://www.nsf.gov/.

NSF generally utilizes grants in support of research and education in science, mathematics and engineering. In cases where an assistance project requires substantial NSF technical or managerial involvement during the performance period, NSF uses cooperative agreements. While this Guide is generally applicable to both types of assistance awards, cooperative agreements may include different or additional requirements.

Informal information about NSF activities can be obtained on the Grants Bulletin Board. To make arrangements to access the bulletin board, send your electronic mail address along with your complete name, address and telephone number to grants@nsf.gov.

For detailed information about the award and administration of NSF grants and cooperative agreements, proposers and grantees may refer to the NSF *Grant Policy Manual* (GPM) (NSF 95-26) or to Chapter VI of title 45 of the *Code of Federal Regulations*. The Manual is a compendium of basic NSF policies and procedures for use by the grantee community and NSF staff and is available by subscription from the Superintendent of Documents, Government Printing Office, Washington, DC 20402. GPO subscription prices and terms are subject to change without notice.

The NSF documents referenced above, including all forms contained in the GPG, may also be accessed electronically. (See inside cover.)

Catalog of Federal Domestic Assistance

NSF programs fall under the following categories in the latest Catalog of Federal Domestic Assistance issued by the Office of Management and Budget and the General Services Administration:

47.041 - Engineering Grants
47.049 - Mathematical and Physical Sciences
47.050 - Geosciences
47.070 - Computer and Information Science and Engineering
47.074 - Biological Sciences
47.075 - Social, Behavioral and Economic Sciences
47.076 - Education and Human Resources
47.077 - Academic Research Facilities and Instrumentation
47.078 - Office of Polar Programs

SUMMARY OF SIGNIFICANT CHANGES

- Overall Document – The entire document has been supplemented with new coverage, where appropriate, on the NSF FastLane Project and other electronic sources of information such as the NSF home page.

- Foreword – A revised listing of Catalog of Federal Domestic Assistance Numbers has been provided.

- Chapter I – A new Paragraph C has been added to describe the NSF FastLane Project.

- Chapter I – Paragraph E has been revised to clarify that it is when the proposal is received by the Foundation that determines whether a proposal has met an established deadline date. For late proposals, the "postmark" policy has been expanded to include carriers other than the U.S. Postal Service. This section also has been supplemented with language regarding deadlines that fall on weekends and holidays.

- Chapter I – Paragraph F has been renamed "How to Submit Proposals" as well as reorganized to:
  - clarify that a proposal only needs to be submitted once to NSF, even if review by multiple programs is envisioned. This should help reduce the submission of multiple copies of the same proposal for simultaneous review by different program offices. The submission of duplicate or substantially similar proposals concurrently for review by more than one program without prior NSF approval may result in the return of the redundant proposals.
  - expand the coverage to include a "receipt policy" for proposals submitted electronically via the NSF FastLane Project.
  - revise the address to move the NSF program from the first line of the address in order to avoid having proposals delivered directly to NSF program offices.

- Chapter II has been supplemented with language indicating that, "For standard proposals, FastLane preparation and submission is the preferred method. Unless otherwise specified in a program announcement or solicitation, however, proposals may continue to be submitted in paper form."

- Chapter II – Paragraph B has been reorganized to reverse the order of the first two single copy documents to facilitate proposal processing. The paragraph also has been supplemented with submission instructions on single copy documents for proposals that are submitted electronically via FastLane.

- Chapter II – Paragraph C has been modified to permit copies other than the original to use a simple binding, such as a comb binding, for use in proposal submission.

- Chapter II – Paragraph D has been revised to delete the following four proposal forms:
  - *Project Summary*, NSF Form 1358;
  - *Project Description*, NSF Form 1360;
  - *References Cited*, NSF Form 1361; and
  - *Biographical Sketch*, NSF Form 1362.

  In lieu of these forms, proposers are requested to use the instructions in the *Grant Proposal Guide* to complete these sections of the proposal.

- Chapter II – Paragraph D.1 has been changed to:
  - add a new block for insertion of the organization's Data Universal Numbering System (DUNS) Number. This number will be necessary to implement many of the upcoming electronic initiatives.
  - clarify the instructions for completion of the required certifications for the Principal Investigator and Authorized Organizational Representative (AOR) as well as to remind the proposing organization of its responsibility to assure that only properly authorized individuals may sign as an AOR.

- Chapter II – Paragraph D.2 has been updated to require the *Project Summary* to also describe the potential impact of the project on advancing knowledge, science and mathematics education, and/or human resource development.

- Chapter II – Paragraph D.4 has been revised to:
  - remind proposers that proposals to NSF will now be reviewed using the new merit review criteria (discussed at greater length in Chapter III).
  - require the proposal to indicate as part of the Project Description, "any broader impacts of the proposed activity."
  - incorporate language on the new reporting capability that will permit electronic submission and updating of reports on each of the PI's NSF project(s). In addition to submission of report information, once implemented, the new electronic system also may be used to submit electronically *Results from Prior NSF Support* as part of a new proposal submission. PIs that elect to use the FastLane system to submit *Results from Prior NSF Support* should check the box on the NSF Form 1359, *Table of Contents*, and indicate the applicable award number for that project.

- Chapter II – Paragraph D.5 has been clarified to require the names of authors to appear in the same sequence in which they appear in the referenced publication.

- Chapter II – Paragraph D.6 has been revised to require one listing of persons who have collaborated on a project. Previously, this information was located in two places in the *Biographical Sketch*. In addition, when providing names of individuals, the organizational affiliation should be added to differentiate between individuals with duplicate names.

- Chapter II – Paragraph D.7 has been revised to clarify that the Budget Justification encompasses the entire period of support.

- Chapter II – Paragraph D.7.f.(iii) has been modified to require consultants' travel costs and per diem allowances to be included under the consultant category in lieu of the travel category.

- Chapter II – Paragraph D.7.f.(v) has been updated to specify that subaward budgets need to be signed by the Authorized Organizational Representative of the organization receiving the subaward.

- Chapter II – Paragraph D.7.l has been changed to incorporate a reminder to proposers that significant cost-sharing in excess of the statutorily required amount should be entered on Line M of the Budget and that this cost-sharing may be a consideration in NSF's funding decision and will become a condition of the award. In addition, the Travel section has been supplemented with a reminder regarding use of U.S. Flag Carriers.

- Chapter II – Paragraph D.12.a. has been updated to reflect recent changes to the guidelines for Small Grants for Exploratory Research.

- Chapter II – Paragraph D.12.b. has been supplemented with new instructions for submission of collaborative proposals.

- Chapter II – Paragraphs D.12.d. and e. have been modified to reflect "just-in-time" submission for organizational approvals for use of Vertebrate Animals and Human Subjects in the proposal submission process.

- Chapter III – Paragraph A has been revised to reflect changes to NSF's merit review criteria.

- Chapter IV – Paragraph B has been updated to include two additional reasons for the return of proposals by NSF: (1) the proposal was previously reviewed and declined and has not been substantially revised; or (2) the proposal is a duplicate of or substantially similar to a proposal already under consideration by NSF.

- Chapter V – Paragraph F has been revised to include an updated listing of NSF programs whose purpose is to increase participation by women, minorities, persons with disabilities and by faculty from minority institutions and predominantly undergraduate institutions.

- Chapter VII – Paragraph C has been clarified to indicate that after a grant transfer has been completed, monetary discrepancies must be resolved between the original and new grantee.

- Chapter VII – Paragraph G has been supplemented with language describing the new reporting capability that will permit electronic submission and updating of reports on each of the PI's NSF project(s). It is anticipated that the new NSF FastLane reporting system will be available for voluntary use shortly after October 1, 1997, however, proposers will not be required to use the new reporting format until FY 1999.

- Chapter VII – Paragraph I has been clarified to require the acknowledgment of NSF support and a disclaimer to appear in publications (including World Wide Web pages) of any material, whether copyrighted or not, based on or developed under NSF-supported projects.

- Appendix A has been updated to include the latest listing of NSF programs, numbers of copies of proposals required, and telephone numbers.

- Appendix B has been updated to conform with the requirements contained in GPG 98-2.

- Proposal Forms Kit – The *Table of Contents* (NSF Form 1359) has been modified to add a box for *Results from Prior NSF Support* as well as to indicate that the entire proposal must be paginated.

TABLE OF CONTENTS

CHAPTER I INTRODUCTION

A. OVERVIEW

1. Unsolicited Proposals

The *Grant Proposal Guide* (GPG) provides guidance for preparation of unsolicited proposals to NSF. Proposals submitted in response to specific NSF program announcements are also considered unsolicited and, unless specified otherwise, are prepared in accordance with GPG formatting and other requirements. Proposers should note that awards resulting from unsolicited research proposals are subject to statutory cost-sharing. (See Section II.D.7.l and *Grant Policy Manual* (GPM) Section 330.) In addition, some program announcements may contain other cost-sharing/matching requirements. Unless the program announcement identifies other specific criteria, unsolicited proposals are evaluated pursuant to general evaluation criteria identified in GPG Chapter III and compete with each other, but less directly than in solicited proposals.

2. Solicited Proposals

NSF also solicits proposals for support of NSF targeted areas through issuance of specific program solicitations. Such proposals are considered solicited. Program solicitations are specifically designated as such, are more definitive than program announcements and generally describe types of projects the program wishes to fund. Competition among proposals is more focused, and special evaluation and selection procedures are often used. Statutory cost-sharing is not required; however, there may be other cost-sharing/matching requirements.

3. General

The Foundation considers proposals submitted by individuals or groups for support in most fields of research. (See Appendix A for programs.) Interdisciplinary proposals are also eligible for consideration.

NSF does not normally support technical assistance, pilot plant efforts, research requiring security classification, the development of products for commercial marketing or market research for a particular project or invention. Bioscience research with disease-related goals, including work on the etiology, diagnosis or treatment of physical or mental disease, abnormality, or malfunction in human beings or animals, is normally not supported. Animal models of such conditions or the development or testing of drugs or other procedures for their treatment also are not eligible for support. However, research in bioengineering, with diagnosis or treatment-related goals, that applies engineering principles to problems in biology and medicine while advancing engineering knowledge is eligible for support. Bioengineering research to aid persons with disabilities is also eligible.

Research proposals **(not proposals for conferences or workshops)** to the Biological Sciences Directorate cannot be duplicates of proposals to any other Federal agency for simultaneous consideration. The only exceptions to this rule are: (1) when the proposers and program managers at relevant Federal agencies have previously agreed to joint review and possible joint funding of the proposal; and (2) proposals from beginning investigators (individuals who have not been a principal investigator (PI)[1] or co-principal investigator (co-PI) on a Federally funded award with the exception of doctoral dissertation, postdoctoral fellowship or research planning grants). For proposers who qualify under this latter exception, the box for "Beginning Investigator" should be checked on the *Cover Sheet for Proposal to the National Science Foundation,* NSF Form 1207.

NSF expects strict adherence to the rules of proper scholarship and attribution. The responsibility for proper attribution and citation rests with authors of a research proposal; all parts of the proposal should be prepared with equal care for this concern. Serious failure to adhere to such standards can result in findings of misconduct in science. NSF policies and rules on Misconduct in Science and Engineering are discussed in GPM Section 930.

B. THE PROPOSAL

The proposal should present the: (1) objectives and scientific or educational significance of the proposed work; (2) suitability of the methods to be employed; (3) qualifications of the investigator and the grantee organization[2]; (4) effect of the activity on the infrastructure of science, engineering and education; and (5) amount of funding required. It should present the merits of the proposed project clearly and should be prepared with the care and thoroughness of a paper submitted for publication. Sufficient information should be provided so that reviewers will be able to evaluate the proposal in accordance with the two merit review criteria established by the National Science Board. (See Chapter III.) As a matter of convenience, a checklist is provided as Appendix B, to help assure that proposals are complete before submission to NSF.

C. NSF FASTLANE PROJECT

The NSF FastLane uses advanced information technology to explore methods to redesign and streamline the way NSF does business with the research, education, and related communities. The NSF FastLane Project is available for proposal preparation, submission, status check and post-award administrative activities. The FastLane functions are accessed by using World Wide Web browsers that support file upload and forms capabilities (e.g., Netscape Navigator 3.0 or later).

[1] As used in this Guide, the term "Principal Investigator" also includes the term "Project Director".

[2] Unless otherwise specified, the term "organization" refers to all categories of proposers.

Access to proposal and post-award functions is limited to staff from FastLane registered organizations and is secured through the use of Personal Identification Numbers (PINs). To register an organization, authorized organization representatives must complete the registration form which can be accessed through the Registration Information hyperlink on the FastLane home page. Once an organization is registered, PINs for individual staff are available from the organization's sponsored projects office.

Detailed information about the FastLane Project is available from the FastLane home page at www.fastlane.nsf.gov.

D. WHO MAY SUBMIT PROPOSALS

Scientists, engineers and educators usually initiate proposals which are officially submitted by their employing organization. Before formal submission, the proposal may be discussed with appropriate NSF program staff. Graduate students are not encouraged to submit research proposals, but should arrange to serve as research assistants to faculty members. Some NSF divisions accept proposals for Doctoral Dissertation Improvement Research Grants when submitted by a faculty member on behalf of the graduate student. The Foundation also provides support specifically for women and minority scientists and engineers, scientists and engineers with disabilities, and faculty at primarily undergraduate academic institutions. (See Chapter V for information about Special Programs.)

Categories of Proposers

1. *Universities and colleges:* U.S. universities and two- and four-year colleges (including community colleges) acting on behalf of their faculty members.
2. *Non-profit, non-academic organizations:* Independent museums, observatories, research laboratories, professional societies and similar organizations in the U.S. that are directly associated with educational or research activities.
3. *For-profit organizations:* U.S. commercial organizations, especially small businesses with strong capabilities in scientific or engineering research or education. (See Section V.K. for specific information on the Small Business Innovation Research (SBIR) program.) An unsolicited proposal from a commercial organization may be funded when the project is of special concern from a national point of view, special resources are available for the work or the proposed project is especially meritorious. NSF is interested in supporting projects that couple industrial research resources and perspectives with those of universities. Therefore, it especially welcomes proposals for cooperative projects involving both universities and the private sector.
4. *State and Local Governments:* State educational offices or organizations and local school districts may submit proposals intended to broaden the impact, accelerate the pace and increase the effectiveness of improvements in science, mathematics and engineering education in both K-12 and post-secondary levels.
5. *Unaffiliated Individuals:* Scientists, engineers or educators in the U.S. and U.S. citizens may be eligible for support, provided that the individual is not employed by or affiliated with an organization and:
   - the proposed project is sufficiently meritorious and otherwise complies with the conditions of any relevant program announcement/solicitation;
   - the proposer has demonstrated the capability and has access to any necessary facilities to carry out the project; and
   - the proposer agrees to fiscal arrangements which, in the opinion of the NSF Grants Officer, ensure responsible management of Federal funds.

   Unaffiliated individuals should contact the appropriate program before preparing a proposal for submission.
6. *Foreign organizations*: NSF rarely provides support to foreign organizations. NSF will consider proposals for cooperative projects involving U.S. and foreign organizations, provided support is requested only for the U.S. portion of the collaborative effort. (For further information, contact the Division of International Programs, Appendix A.)
7. *Other Federal agencies*: NSF does not normally support research or education activities by scientists, engineers or educators employed by Federal agencies or Federally Funded Research and Development Centers (FFRDCs). However, a scientist, engineer or educator who has a joint appointment with a university and a Federal agency (such as a Veterans Administration Hospital, or with a university and an FFRDC) may submit proposals through the university and may receive support if he/she is a bona fide faculty member of the university, although part of his/her salary may be provided by the Federal agency. Under unusual circumstances, other Federal agencies and FFRDCs may submit proposals directly to NSF. Preliminary inquiry should be made to the appropriate program before preparing a proposal for submission.

E. WHEN TO SUBMIT PROPOSALS

Many NSF programs accept proposals at any time. Other programs however, establish target dates[3] or deadlines[4] for submission of proposals to allow time for their consideration by review panels which meet periodically. These target dates and deadlines are published in specific program announcements/solicitations, which can be obtained from the NSF Clearinghouse (pubs@nsf.gov) or electronically through the NSF home page (www.nsf.gov). Lists of deadlines and target dates also are available electronically on the NSF home page. Unless otherwise stated in a program announcement or solicitation, proposals must be received by the specified date. However, a proposal received after a deadline may be acceptable if it carries a legible proof-of-mailing date assigned by the carrier and the proof-of-mailing date is not later than one week prior to the deadline date. If the receipt date falls on a weekend, it will be extended to the following Monday; if the date falls on a holiday, it will be extended to the following work day. The receipt date will be waived only in extenuating circumstances. Inquiry about submission may also be made to the appropriate program.

[3] Target dates are cutoff dates after which proposals will still be reviewed, although they may miss a particular panel or committee meeting.

[4] Deadlines are cutoff dates after which proposals usually will not be accepted for review by NSF.

Proposers should allow up to six months for programmatic review and processing (see chapter III for additional information on the NSF merit review process.) In addition, proposers should be aware that the NSF Division of Grants and Agreements generally makes awards to academic institutions within 30 days after the program division makes its recommendation. Grants being made to organizations that have not received an NSF award within the preceding two years, or involving special situations (such as coordination with another Federal agency or a private funding source), cooperative agreements, and other unusual arrangements may require additional review and processing time. Proposals that are time sensitive (e.g., conference, group travel and research involving ephemeral phenomena) will only be accepted for review if, in the opinion of the cognizant Program Officer, they are received in sufficient time to permit appropriate NSF review and processing to support an award in advance of the activity to be supported. Every effort is made to reach a decision and inform the proposer promptly. Until an award is made, NSF is not responsible for any expenditures incurred by the proposing organization.

F. HOW TO SUBMIT PROPOSALS

For standard proposals, electronic proposal submission via the NSF FastLane Project is the preferred method. Unless otherwise specified in a program announcement or solicitation, however, proposals may continue to be submitted in paper form.

A proposal only needs to be submitted once to NSF, even if review by multiple programs is envisioned by the proposer. The submission of duplicate or substantially similar proposals concurrently for review by more than one program without prior NSF approval may result in the return of the redundant proposals. (See Section IV.B. for further information on proposal return.)

The following are specific instructions regarding the submission and receipt of electronic and paper proposals to NSF:

1. Electronic submission. A proposal is considered complete when the proposal, including the Project Description, has been submitted to NSF. If the Project Description is included in the electronic submission, unless otherwise specified in a program announcement or solicitation, the receipt date will be the date the sponsored projects office transmits the proposal to NSF. If the Project Description is submitted separately in paper form, it should accompany the signed NSF Form 1207 and the receipt date will be the date the Project Description and signed *Cover Sheet for Proposal to the National Science Foundation* are received by the NSF Proposal Processing Unit (or the cognizant program office if so directed in a program announcement or solicitation). In either case, a proposal may not be processed until the complete proposal (including signed Cover Sheet) has been received by NSF.

2. Paper submission. The delivery address **must clearly identify the NSF announcement or solicitation number** under which the proposal is being submitted, if applicable. If the proposal is not submitted in response to a specific announcement/solicitation, proposers should enter the NSF Program(s), using Appendix A of this document as a Guide, to which the proposal should be directed. NSF will determine which program(s) will evaluate each proposal.

Unless stated otherwise in a program announcement/ solicitation, proposals should not be addressed or sent directly to the cognizant Program Officer. If copies of the proposal are mailed or delivered in more than one package, the number of packages and the NSF Announcement/ Solicitation number, if applicable, should be marked on the outside of each package. Proposals must be sent prepaid, not collect. Proposals sent by special messenger or courier should be delivered to the below address, weekdays, except Federal holidays, between the hours of 8:30 a.m. and 5:00 p.m. ET. Please contact the NSF Mail Room, (703) 306-0657, with any questions regarding the mailing or delivery of proposals.

Proposals must be addressed **exactly** as follows:

ANNOUNCEMENT/SOLICITATION NO _____
NATIONAL SCIENCE FOUNDATION PPU
NSF PROGRAM _____
4201 WILSON BLVD ROOM P60
ARLINGTON VA 22230

3. Acknowledgment of proposal receipt. The acknowledgment of the receipt of the proposal will reference both the NSF proposal number and the cognizant NSF program to which the proposal has been assigned. Communications about the proposal should be addressed to the cognizant Program Officer with reference to the proposal number. Proposers are encouraged to use the NSF FastLane system described in Section I.C. to verify the status of their submission to NSF.

Organizations applying for the first time or which have not received an NSF award within the preceding two years, should refer to GPM Section 501, for instructions on specific information that may be requested by NSF.

For standard proposals, FastLane preparation and submission is the preferred method. With the exception of the items identified in Section B. below, *Special Instructions for Single-Copy Documents*, all standard NSF proposal formats are supported by FastLane.

A. CONFORMANCE WITH INSTRUCTIONS FOR PROPOSAL PREPARATION

It is important that all proposals conform to the instructions provided in the GPG and in the Proposal Forms Kit. **Conformance is required and will be strictly enforced unless a deviation has been approved.** Proposals that are not consistent with these instructions may not be considered by NSF. Particular attention is given to proposal length, content and formatting, including the page limitation on the Project Description and other proposal sections, such as the use of Appendices and required content of the Biographical Sketches.

Any deviations from these instructions must be authorized in advance by NSF. Deviations may be authorized in one of two ways:

1. through specification of different requirements in an NSF Announcement/Solicitation; or

2. by the written approval of the cognizant NSF Assistant Director/Office Head or designee. Such deviations may be a "blanket deviation" for a particular program or programs, or in rare instances, an "individual" deviation for a particular proposal.

Proposers may deviate from these instructions only to the extent authorized. Proposals must identify the deviation in one of the following ways as appropriate: (a) by identifying the program announcement/solicitation number in the appropriate block on the NSF Form 1207; or (b) by identifying the date of the deviation authorization in the program announcement/solicitation block on the NSF Form 1207, and including one copy of the written deviation authorization with the single-copy documents identified in paragraph B. below.

B. SPECIAL INSTRUCTIONS FOR SINGLE-COPY DOCUMENTS

The following single-copy documents, if applicable, **should be attached to the front of the proposal** in the order identified below.

1. Information About Principal Investigators/Project Directors (NSF Form 1225)

NSF is committed to providing equal opportunities for participation in its programs and promoting the full use of the Nation's research resources. To aid in meeting these objectives, NSF requests information on the gender, race, ethnicity and disability status of individuals named as PIs or co-PIs on proposals and awards. Except for the required information about current or previous Federal research support, submission of the information on the form is voluntary, and individuals who do not wish to provide the personal information should check the box provided for that purpose. The forms and the information they contain are accessible by NSF personnel only.

2. List of Suggested Reviewers or Reviewers Not To Include (optional)

Proposers may include, in a cover letter or separate sheet, a list of suggested reviewers that the proposers believe are especially well qualified to review the proposal. Proposers may also designate persons they would prefer not review the proposal, indicating why. These suggestions are optional. The cognizant Program Officer handling the proposal considers the suggestions and may contact the proposer for further information. The NSF FastLane system currently cannot be used to submit this information.[5]

3. Certification Page (Page 2 of the Cover Sheet for Proposal to the National Science Foundation), NSF Form 1207

By signing Page 2 of the NSF Form 1207, PIs and authorized organizational representatives are providing certain required certifications. (See Section II.D.1 for further information regarding certifications.) The NSF FastLane system currently cannot be used to submit this information.

4. Deviation Authorization (If Applicable)

See paragraph A. above. The NSF FastLane system currently cannot be used to submit this information.

C. FORMAT OF THE PROPOSAL

Proposals must be stapled in the upper left-hand corner (for copies other than the original, a simple binding such as a comb binding also is permitted) and have 2.5-cm margins at the top, bottom and on each side. The type size must be clear and readily legible, in standard size which is 10 to 12 points. (No smaller than 10 point font size will be accepted.) If constant spacing is used, there should be no

[5] Single copy documents referenced in this section that cannot be submitted via FastLane should accompany the signed copy of the NSF Form 1207, and be sent to the address identified in Section I.F.

more than 12 characters per 2.5 cm, whereas proportional spacing should provide no more than an average of 15 characters per 2.5 cm. While line spacing (single-spaced, double-spaced, etc.) is at the discretion of the proposer; established page limits must be followed and there also must be no more than 6 lines in a vertical space of 2.5 cm. (Individual program announcements/solicitations may eliminate this proposer option.) The original signed copy should be printed only on one side of each sheet, except for the NSF Form 1207 (which is a double-sided form). Additional copies of the proposal may be printed on both sides. Appendix A indicates the required number of copies of proposals, including the original signed copy.

Pages submitted must be of standard size. Metric A4 (210 mm x 297 mm) is preferred, however 8 1/2" x 11" (216 mm x 279 mm) may be used. Pages must conform to the formatting instructions (in particular, 2.5-cm margins and type size limitations) described above.

D. SECTIONS OF THE PROPOSAL

Proposers may select any numbering mechanism for the proposal (e.g., sections may be separately paginated and include both the section and page number on the bottom center of each page or the entire proposal may be numbered consecutively). The proposal must be assembled in the following sequence:

Codes:

[1] = Use of format required[6]

[2] = Use of format optional

[3] = Use instructions provided in GPG for preparation of this section

Section in Proposal

- ♦ Cover Sheet for Proposal to the National Science Foundation (NSF Form 1207) (page 1 - all copies; page 2 - original signature copy only - see Section II.B.3)[1]
- A Project Summary[3]
- B Table of Contents (NSF Form 1359)[1]
- C Project Description (including Results from Prior NSF Support)[3]
- D References Cited[3]
- E Biographical Sketch(es) [3]
- F Budget (NSF Form 1030)(cumulative and annual budgets, including subaward budget(s), if any, and up to three pages of Budget Justification)[1]
- G Current and Pending Support (NSF Form 1239)[2]
- H Facilities, Equipment and Other Resources (NSF Form 1363)[2]
- I Special Information and Supplementary Documentation
- J Appendices (Include only if approved in advance of proposal submission by NSF Assistant Director/Office Head, or designee, or program announcement or solicitation)

[6] See Proposal Forms Kit, Forms Acceptance, for NSF's Forms Acceptance Policy.

1. Cover Sheet for Proposal to the National Science Foundation (NSF Form 1207)

The required format for the *Cover Sheet for Proposal to the National Science Foundation* (NSF Form 1207) is shown in the Proposal Forms Kit. Proposers **must** identify the applicable program announcement/solicitation number and closing date in the block entitled, "Program Announcement/Solicitation No./Closing Date." If the proposal is not submitted in response to a specific program announcement/solicitation, proposers must enter, "NSF 98-2." Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing. Using Appendix A as a guide, proposers should enter the NSF Program(s) to which the proposal should be directed in the block entitled, "For Consideration by NSF Organizational Unit."

A new block has been added for the proposer to enter its organization's Data Universal Numbering System (DUNS) number. The DUNS number is a nine-digit number assigned by Dun and Bradstreet Information Services. If the proposer does not have a DUNS number, it should contact Dun and Bradstreet directly at 800-333-0505 to obtain one. A DUNS number will be provided immediately by telephone at no charge.

Should the project be performed at a place other than where the award is to be made, that should be identified in the block entitled, "Name of Performing Organization." Examples are as follows:

Grantee Organization	**Performing Organization**
Northern Virginia University	Northern Virginia University Health Center
Southern Virginia University Research Foundation	Southern Virginia University

The title of the project should be brief, scientifically or technically valid, intelligible to a scientifically or technically literate reader and suitable for use in the public press. NSF may edit the title of a project before making an award.

The proposed duration for which support is requested should be consistent with the nature and complexity of the proposed activity. Grants are normally awarded for up to three years but may be awarded for periods up to five years. The Foundation encourages PIs to request awards for durations of three to five years when such durations are necessary for completion of the proposed work and when such durations are technically and managerially advantageous. Specification of a desired starting date for the project is important and helpful to NSF staff; however, requests for specific effective dates may not be met. Except in special situations, requested effective dates should allow at least six months for NSF review, processing and decision. Should unusual situations, (e.g., a long lead time for procurement) create problems regarding the proposed effective date, the PI should consult his/her sponsored projects office.

Should any of the listed items apply to a proposal, the appropriate box(es) should be checked.

One copy of the proposal must be signed by the PI(s) and an official authorized to commit the organization in business and financial affairs. Other copies may include page 1 of the NSF Form 1207 only.

The proposer must sign page 2 of the NSF Form 1207 to submit the following required certifications (see Page 2 of the NSF Form 1207 for important considerations regarding completion of the required certifications):

Certification for Principal Investigators and Co-Principal Investigators: The PI (and co-PIs) are required to complete certifications regarding statements contained in the proposal, authorship and reporting of the research and scientific conduct of the project. The signature(s) of the PI (and co-PIs) (including date of signature(s)) are required.

Certification for Authorized Organizational Representative or Individual Applicant: The Authorized Organizational Representative (AOR) is required to complete certifications regarding the accuracy and completeness of statements contained in the proposal; as well as certify that the organization (or individual) agrees to accept the obligation to comply with award terms and conditions. The AOR's signature (including date of signature) is required. It is the proposing organization's responsibility to assure that only properly authorized individuals sign in this capacity.

A certification is also included which requires an organizational representative to certify that the institution has implemented and is enforcing a written policy on conflicts of interests consistent with the provisions of *Grant Policy Manual*, Section 510; that, to the best of his/her knowledge, all financial disclosures required by the conflict of interest policy were made; and that conflicts of interests, if any, were or, prior to the institution's expenditure of any funds under the award, will be, satisfactorily managed, reduced or eliminated in accordance with the institution's[7] conflict of interest policy. Conflicts which cannot be satisfactorily managed, reduced or eliminated must be disclosed to NSF.

Drug-Free Workplace: The AOR (or individual applicant) is providing the Drug-Free Workplace Certification by signing page 2.

Debt/Debarment and Suspension: The AOR is required to complete the Debt and Debarment or Suspension questions by checking the appropriate boxes.

Certification Regarding Lobbying: The certification on Lobbying Restrictions entitled *Certification for Contracts, Grants, Loans and Cooperative Agreements*, is included in full text on page 2 of the Cover Sheet. This certification is required when the proposal exceeds $100,000. Only if, pursuant to paragraph 2 of the certification, submission of the "*Disclosure of Lobbying Activities*," SF LLL, is required, should the box for "Disclosure of Lobbying Activities" be checked on the Cover Sheet. The signed SF LLL, when applicable, should be included behind the single-copy documents identified in Section II.B. A copy of this form may be obtained from the Policy Office at (703) 306-1243 or by e-mail to policy@nsf.gov.

Profit-making organizations must certify their status by completing each of the appropriate submitting organization boxes on the Cover Sheet, using the following guidelines:

a. A small business must be organized for profit, independently owned and operated (not a subsidiary of or controlled by another firm), have no more than 500 employees, and not be dominant in its field. The appropriate box should also be checked when the proposal involves a cooperative effort between an academic institution and a small business.

b. A minority business must be: (i) at least 51 percent owned by one or more minority or disadvantaged individuals or, in the case of a publicly owned business, have at least 51 percent of the voting stock owned by one or more minority or disadvantaged individuals; and (ii) one whose management and daily business operations are controlled by one or more such individuals.

c. A woman-owned business must be at least 51 percent owned by a woman or women, who also control and operate it. "Control" in this context means exercising the power to make policy decisions. "Operate" in this context means being actively involved in the day-to-day management.

2. Project Summary -- Proposal Section A

The proposal must contain a summary of the proposed activity suitable for publication, not more than one page in length. It should not be an abstract of the proposal, but rather a self-contained description of the activity that would result if the proposal were funded. The summary should be written in the third person and include a statement of objectives, methods to be employed and the potential impact of the project on advancing knowledge, science and mathematics education, and/or human resource development. It should be informative to other persons working in the same or related fields and, insofar as possible, understandable to a scientifically or technically literate lay reader.

3. Table of Contents -- Proposal Section B

The required format for the proposal *Table of Contents* (NSF Form 1359) is included in the Proposal Forms Kit.

[7] For consistency with the DHHS conflict of interest policy, in lieu of "organization", NSF is using the term "institution" which includes all categories of proposers.

4. Project Description -- Proposal Section C (Including Results from Prior NSF Support)

All proposals to NSF will now be reviewed utilizing the new merit review criteria (discussed at greater length in Chapter III).

The main body of the proposal should be a clear statement of the work to be undertaken and should include: objectives for the period of the proposed work and expected significance; relation to longer-term goals of the PI's project; and relation to the present state of knowledge in the field, to work in progress by the PI under other support and to work in progress elsewhere. The statement should outline the general plan of work, including the broad design of activities to be undertaken, an adequate description of experimental methods and procedures and, if appropriate, plans for preservation, documentation, and sharing of data, samples, physical collections and other related research products. The statement should also indicate any broader impacts of the proposed activity. Any substantial collaboration with individuals not included in the budget should be described and documented with a letter from each collaborator, which should be provided as supplementary documentation and included in Proposal Section I. Brevity will assist reviewers and Foundation staff in dealing effectively with proposals. Therefore, the *Project Description* (including *Results from Prior NSF Support*, which is limited to five pages) may not exceed 15 pages. Visual materials, including charts, graphs, maps, photographs and other pictorial presentations **are included** in the 15-page limitation. Conformance to the 15-page limitation will be strictly enforced and may not be exceeded unless the deviation has been specifically authorized. Section II. A. contains information on deviations. Group Proposals (see Section II.D.12) are subject to different page limitations.

In preparation of proposals for renewed support, proposers may submit under the "traditional" approach in which the proposed work is documented and described as fully as though the proposer were applying for the first time; or, an "Accomplishment-Based Renewal" (ABR) proposal, in which the project description is replaced by copies of no more than six reprints of publications resulting from the research supported by NSF during the preceding three- to five-year period, plus a brief summary of plans for the proposed support period. (See Section VI.B.2 for additional information on preparation of Renewal Proposals.)

The Metric Conversion Act of 1975, as amended, and Executive Order 12770 of 1991 encourage Federal agencies to use the Metric System (SI) in procurement, grants and other business-related activities. Proposers are encouraged to use the Metric System of weights and measures in proposals submitted to the Foundation. Grantees are also encouraged to use metric units in reports, publications and correspondence relating to proposals and awards.

Results from Prior NSF Support

If the PI (or any co-PI identified on the proposal) has received NSF funding in the past five years, information on the prior award is required. If the proposer has received *more than one prior award* (excluding amendments), the proposer should report on the award most closely related to the proposal. The following information should be provided:

a. the NSF award number, amount and period of support;
b. the title of the project;
c. summary of the results of the completed work, including, for a research project, any contribution to the development of human resources in science and engineering;
d. publications resulting from the NSF award;
e. brief description of available data, samples, physical collections and other related research products not described elsewhere; and
f. if the proposal is for renewed support, a description of the relation of the completed work to the proposed work.

Reviewers will be asked to comment on the quality of the prior work described in this section of the proposal. Please note that a PI with prior support may use *up to* five pages to describe the results. Results may be summarized in *fewer* than five pages, which would give the proposer the balance of the 15 pages for the Project Description.

NSF is planning to implement a new electronic project reporting system through which proposers will be able to produce the *Results from Prior Support* section of the proposal. This new system will be part of the NSF FastLane system and will permit updating of reports on each of the PI's NSF projects and will avoid re-entry of information previously provided by the PI, either with the original proposal submission or in updates provided using the new system. NSF anticipates that this electronic reporting capability will eventually replace the existing paper reporting process and become the normal mechanism for project reporting to NSF. (See Section VII.G for additional information on preparation of grant reports.)

When a PI uses the NSF FastLane system to report Results from Prior Support, there will continue to be a limitation on the length of that report roughly equivalent to the current five-page limit. PIs that elect to use the FastLane system to submit Results from Prior NSF Support should check the box on the NSF Form 1359, *Table of Contents*, and indicate the applicable award number for that project.

NSF anticipates that the system will be available for voluntary use—and for submitting Results from Prior Support—shortly after October 1, 1997. The system initially will be available for use in reporting on single investigator research awards only. NSF hopes to make it available for other classes of awards over succeeding months. NSF will make an announcement when the system is available for use. For additional information on the new project reporting system, see Section VII.G.1. and G.2.

Proposals for renewed support of research projects, *for academic institutions only*, must include information on human-resources development at the postdoctoral, graduate and undergraduate levels. This may involve, but

is not limited to, the role of research in student training, course preparation and seminars (particularly for undergraduates). Special accomplishments in the development of professional scientists and engineers from underrepresented groups should be described. Graduate students who participated in the research should be identified by name. This requirement does not apply to commercial or other non-profit organizations.

5. References Cited -- Proposal Section D

Reference information is required. Each reference must include the title, names of all authors in the same sequence in which they appear in the publication, book or journal, volume number, page numbers and year of publication.

There is no established page limitation for this section of the proposal. While it is important to be concise, proposers should be especially careful to follow accepted scholarly practices in providing citations for source materials relied upon when preparing any section of the proposal.

6. Biographical Sketches -- Proposal Section E

Biographical sketches are limited to two pages each and are required for all senior personnel. (See Appendix C for definition of Senior Personnel.) The following information must be provided:

a. Vitae, listing professional and academic essentials and mailing address;
b. List of up to 5 publications most closely related to the proposed project and 5 other significant publications, including those accepted for publication. Patents, copyrights or software systems developed may be substituted for publications. Additional lists of publications, invited lectures, etc., should not be included. Only the list of 10 will be used in merit review.
c. A list of persons (including their organizational affiliation), in alphabetical order, who have collaborated on a project or a book, article, report or paper within the last 48 months, including collaborators on the proposal. If there are no other collaborators, this should be so indicated.
d. A list of persons (including their organizational affiliation), over the last five years with whom the individual has had an association as thesis advisor or postdoctoral scholar sponsor. Also include a summary of the total number of graduate students advised and postdoctoral scholars sponsored.
e. The names and institutions of the individual's own graduate and postgraduate advisors.

The information in c, d, and e is used to help identify potential conflicts or bias in the selection of reviewers.

For the personnel categories listed below, the proposal also may include information on exceptional qualifications that merit consideration in the evaluation of the proposal.

a. Postdoctoral associates
b. Other professionals
c. Students (research assistants)

For *equipment proposals*, the following should be provided for each auxiliary user:

a. Short biographical sketch
b. List of up to five publications most closely related to the proposed acquisition.

7. Budget -- Proposal Section F

The required format for the *Summary Proposal Budget* (NSF Form 1030) is shown in the Proposal Forms Kit. In addition to the material provided below, further instructions for completion of the budget (including areas that require justification) are contained on the back of the NSF Form 1030. Locally produced versions of the form may be used, but changes or substitutions should not be made in prescribed budget categories. Unless a particular program announcement/solicitation stipulates otherwise, each proposal must contain a budget for each year of support requested and a cumulative budget for the full term of requested NSF support. The proposal may request funds under any of the categories listed so long as the item and amount are considered necessary to perform the proposed work and are not precluded by specific program guidelines or applicable cost principles. In addition to the forms, the proposal may include up to three pages of budget justification for the entire period of support.

a. Salaries and Wages (Lines A and B on the NSF Form 1030)

(i) *Policies*

As a general policy, NSF recognizes that salaries of faculty members and other personnel associated directly with the project constitute appropriate direct costs and may be requested in proportion to the effort devoted to the project.

NSF regards research as one of the normal functions of faculty members at institutions of higher education. Compensation for time normally spent on research within the term of appointment is deemed to be included within the faculty member's regular organizational salary. Grant funds may not be used to augment the total salary or rate of salary of faculty members during the period covered by the term of faculty appointment or to reimburse faculty members for consulting or other time in addition to a regular full-time organizational salary covering the same general period of employment. Exceptions may be considered under certain NSF science and engineering education program announcements/solicitations for weekend and evening classes or for administrative work done as overload. (See GPM Section 611.)

Summer salary for faculty members on academic-year appointments is limited to no more than two-ninths of their regular academic-year salary. This limit includes summer salary received from all NSF-funded grants.

These same principles apply to other types of organizations, such as research institutes. Since their employment periods are usually annual, salary should be shown under "calendar months." For such persons, "summer salary" is normally inappropriate under an NSF grant.

Sometimes an independent institute or laboratory proposes to employ college or university faculty members on a part-time basis. In such cases, the general intent of the policies above apply, so that an individual's total income will not be augmented in ways that would not be possible under a grant to an academic institution.

In most circumstances, particularly for institutions of higher education, salaries of administrative or clerical staff are included as part of indirect costs (F&A). However, salaries of administrative or clerical staff may be requested as direct costs for a project requiring an extensive amount of administrative or clerical support and where these costs can be readily and specifically identified with the project with a high degree of accuracy. The circumstances for requiring direct charging of these services should be clearly described in the budget justification. Such costs, if not clearly justified, may be deleted by NSF.

(ii) *Procedures*

The names of the PI(s), faculty, and other senior personnel and the estimated number of academic-year, summer, or calendar-year person-months for which NSF funding is requested should be listed. For postdoctoral associates and other professionals, each position must be listed, with the number of full-time-equivalent person-months and rate of pay (hourly, monthly or annual). For graduate and undergraduate students, secretarial, clerical, technical, etc., whose time will be charged directly to the project, only the total number of persons and total amount of salaries per year in each category is required. Salaries requested must be consistent with the organization's regular practices.

The budget may request funds for support of graduate or undergraduate research assistants to help carry out the proposed research. Compensation classified as salary payments should be requested in the salaries and wages category. Any direct costs requested for tuition remission should normally be listed under "Other Direct Costs" except for organizations that have negotiated treatment of these costs as "Fringe Benefits" with their cognizant Federal negotiating agency.

(iii) *Confidential Information*

The proposing organization may request that salary data on senior personnel not be released to persons outside the Government during the review process. In this case, the item for senior personnel salaries in the proposal may appear as a single figure and the person-months represented by that amount omitted. If this option is exercised, however, senior personnel salaries and person-months must be itemized in a separate statement, two copies of which should accompany the proposal. This statement must include all of the information requested on the NSF Form 1030 for each person involved. NSF will not forward the detailed information to reviewers and will hold it privileged to the extent permitted by law. The information on senior personnel salaries will be used as the basis for determining the salary amounts shown in the grant budget.

Proposals should contain patentable information or data, trade secrets, privileged or confidential commercial or financial information, disclosure of which may harm the proposer, only when such information is necessary to convey an understanding of the proposed project. Such information should be clearly marked in the proposal or included as a separate statement accompanying the proposal and should be appropriately labeled with a legend such as,

> "The following is (proprietary or confidential) information that (name of proposing organization) requests not be released to persons outside the Government, except for purposes of review and evaluation."

For FastLane budget preparation, the statement should be placed in the Note line item.

The box for "Proprietary and Privileged Information" should be checked on the NSF Form 1207 when the proposal contains such information. (See also Section VII.J. "Release of Grantee Proposal Information.")

b. Fringe Benefits (Line C on the NSF Form 1030)

If the grantee's usual accounting practices provide that its contributions to employee benefits (social security, retirement, etc.) be treated as direct costs, NSF grant funds may be requested to defray such expenses as a direct cost, but only in proportion to salaries and wages requested in the budget.

c. Equipment (Line D on the NSF Form 1030)

Equipment is defined as an item of property that has an acquisition cost of $5,000 or more (unless the organization has established lower levels) and an expected service life of more than one year. Items of needed equipment should be listed individually by description and estimated cost, including tax, and adequately justified. Allowable items will ordinarily be limited to research equipment and apparatus not already available for the conduct of the work. General-purpose equipment, such as a personal computer, is not eligible for support unless primarily or exclusively used in the actual conduct of scientific research. (See Section II.D.7.f.(iv).)

d. Travel (Line E on the NSF Form 1030)

(i) *General*

Allowance for air travel normally will not exceed the cost of round-trip, economy air accommodations. (See also GPM Section 614.) Persons traveling under NSF grants must travel by U.S.-flag carriers, if available.

(ii) Domestic Travel

For budget purposes, domestic travel includes travel in the U.S., its possessions, Puerto Rico, and travel to Canada and Mexico. Travel and its relation to the proposed activities should be specified. Funds may be requested for field work, attendance at meetings and conferences, other travel associated with the proposed work and subsistence. In

travel associated with the proposed work and subsistence. In order to qualify for support, however, attendance at meetings or conferences must enhance the PI's ability to perform the work, plan extensions of it or disseminate its results.

(iii) ***Foreign Travel***

For budget purposes, travel outside the areas specified above is considered foreign. The proposal should include relevant information, including countries to be visited (also enter names of countries on the NSF Form 1030) dates of visit, if known, and justification for any foreign travel planned in connection with the project.

Travel support for dependents of key project personnel may be requested only when all of the following conditions apply:

a. the individual is a key person who is essential to the research on a full-time basis;
b. the individual's residence away from home and in a foreign country is for a continuous period of six months or more and is essential to the effective performance of the project; and
c. the dependent's travel allowance is consistent with the policies of the organization administering the grant.

e. Participant Support (Line F on the NSF Form 1030)

This budget category refers to costs of transportation, per diem, stipends and other related costs for participants or trainees (but not employees) in connection with NSF-sponsored conferences, meetings, symposia, training activities and workshops. (See Section V.B.) Generally, indirect costs (F&A) are not allowed on participant support costs. The number of participants to be supported should be entered in the parentheses on the NSF Form 1030. These costs should also be justified in the budget justification section of the proposal.

f. Other Direct Costs (Lines G1 through 6 on the NSF Form 1030)

Any costs charged to an NSF grant must be reasonable and directly allocable to the supported activity. The budget should identify and itemize other anticipated direct costs not included under the headings above, including materials and supplies, publication costs, computer services and consultant services. Other examples are: aircraft rental; space rental at research establishments away from the grantee organization; minor building alterations; payments to human subjects; service charges; and construction of equipment or systems not available off the shelf. Reference books and periodicals may be charged to the grant only if they specifically relate to the project.

(i) ***Materials and Supplies (Line G1 on the NSF Form 1030)***

The budget should indicate in general terms the type of expendable materials and supplies required, with their estimated costs. The breakdown should be more detailed when the cost is substantial.

(ii) ***Publication / Documentation / Dissemination (Line G2 on the NSF Form 1030)***

The budget may request funds for the costs of documenting, preparing, publishing or otherwise making available to others the findings and products of the work conducted under the grant. This generally includes the following types of activities: reports, reprints, page charges or other journal costs (except costs for prior or early publication); necessary illustrations; cleanup, documentation, storage and indexing of data and data bases; development, documentation and debugging of software; and storage, preservation, documentation, indexing, etc., of physical specimens, collections or fabricated items.

(iii) ***Consultant Services (Line G3 on the NSF Form 1030)***

Anticipated consultant services should be justified and information furnished on each individual's expertise, primary organizational affiliation, normal daily compensation rate and number of days of expected service. Consultants' travel costs and per diem allowances (or meals provided in lieu of per diem) may also be included. Payment for a consultant's services, exclusive of expenses, may not exceed the consultant's normal rate or the daily maximum rate established annually by NSF, whichever is less.

(iv) ***Computer Services (Line G4 on the NSF Form 1030)***

The cost of computer services, including computer-based retrieval of scientific, technical and educational information, may be requested. A justification based on the established computer service rates at the proposing organization should be included. (See also Partnerships for Advanced Computational Infrastructure in Section V.J.) The budget also may request costs, which must be shown to be reasonable, for leasing of automated data processing equipment. Special purpose computers or associated hardware and software, other than general purpose PCs, should be requested as items of equipment and justified in terms of their necessity for the activity proposed.

(v) ***Subawards[8] (Line G5 on the NSF Form 1030)***

Except for the procurement of items such as commercially available supplies, materials, equipment or general support services allowable under the grant, no significant part of the research or substantive effort under an NSF grant may be contracted or otherwise transferred to another organization without prior NSF authorization. The intent to enter into such arrangements should be disclosed in the proposal submission. At a minimum, the disclosure shall include a clear description of the work to be performed, the basis for selection of the subawardee (except for collaborative/joint arrangements) and a separate budget in the prescribed NSF format for each subaward signed by an authorized representative of the organization receiving the subaward. Collaborative/joint

[8] The term "subaward" also includes contracts, subcontracts and other arrangements.

organization; a joint activity by several organizations or a consortium; group proposals from multiple organizations, etc. The total amount for proposed subawards, not included elsewhere, should be entered on Line G5 in the *Summary Proposal Budget* for the project.

g. Total Direct Costs (Line H on the NSF Form 1030)

The total amount of direct costs requested by the proposer, to include Lines A through G, should be entered on Line H.

h. Indirect Costs (also known as Facilities and Administrative Costs (F&A) for Colleges and Universities) (Line I on the NSF Form 1030)

The appropriate, applicable indirect cost rate(s) negotiated by the organization with the cognizant Federal negotiating agency must be used in computing indirect costs (F&A) for a proposal. If an organization has no established indirect cost rate, it should contact the Cost Analysis/Audit Resolution Branch of NSF's Division of Contracts, Policy and Oversight. An organization may obtain guidelines for submitting rate proposals from that Branch, telephone (703) 306-1244. These guidelines also are available electronically at http://www.nsf.gov/bfa/cpo/start.htm.

Within Government guidelines, unless otherwise indicated in a specific program announcement/solicitation, it is NSF policy that grantees are entitled to reimbursement from grant funds for indirect costs (F&A) allocable to the NSF share of allowable direct costs of a project, except grants:

- solely for the support of travel, equipment, construction of facilities or doctoral dissertations;
- for participant support costs;
- to foreign grantees; and
- to individuals (i.e., Fellowship awards).

i. Total Direct and Indirect Costs (F&A) (Line J on the NSF Form 1030)

The total amount of direct and indirect costs (F&A) (sum of Lines H and I) should be entered on Line J.

j. Residual Funds (Line K on the NSF Form 1030)

This line is used **only** for budgets for incremental funding requests on continuing grants. Grantees should provide a rationale for residual funds in excess of 20% as part of the progress report. (See NSF Form 1328.)

k. Amount of This Request (Line L on the NSF Form 1030)

The total amount of funds requested by the proposer will be the same as the amount entered on Line J unless the Foundation disapproves the carry-over of residual funds. If disapproved, Line L will be equal to Line J minus Line K.

l. Cost-Sharing (Line M on the NSF Form 1030)

In accordance with Congressional requirements (see GPM 330), NSF requires that each grantee share in the cost of research projects resulting from unsolicited proposals. The grantee may meet the statutory cost-sharing requirement by choosing either of two alternatives:

1. by cost-sharing a minimum of one-percent on the project; or
2. by cost-sharing a minimum of one-percent on the aggregate costs of all NSF-supported projects requiring cost-sharing.

The statutory cost-sharing referenced above is not required for grants that provide funds solely for the following purposes (not considered to be support of "research"), although such awards may be subject to other cost-sharing requirements identified in a specific announcement or solicitation:

1. international travel;
2. construction, improvement or operation of facilities;
3. acquisition of research equipment;
4. ship operations;
5. education and training;
6. publication, distribution and translation of scientific data and information;
7. symposia, conferences and workshops; and
8. special studies authorized or required by Subsections 3a(5) through 3a(7) of the NSF Act, as amended.

The minimum one-percent statutory cost-sharing requirement discussed above need NOT be entered on Line M of the NSF Form 1030. However, proposers should include on Line M any significant cost-sharing that exceeds the statutorily required (1%) amount, especially if it is the proposer's intent that it be taken into consideration in the merit review of the proposal. Since such volunteered cost-sharing may be a consideration in NSF's decision to fund the proposal, such voluntary cost-sharing will become a condition of the award.

The estimated value of any in-kind contributions should be included on Line M. An explanation of the source, nature, amount and availability of any proposed cost-sharing should also be provided in the budget justification[9]. It should be noted that contributions counted as cost-sharing toward projects of another Federal agency may not be counted towards meeting the specific cost-sharing requirements of the NSF grant. All cost-sharing amounts are subject to audit. Failure to provide the level of cost-sharing reflected in the approved grant budget may result in termination of the NSF grant, disallowance of grant costs and/or refund of grant funds to NSF.

[9] Section .23 of OMB Circular A-110 prescribes criteria and procedures for the allowability of cash and in-kind contributions in satisfying cost sharing and matching requirements.

m. Unallowable Costs

Proposers should be familiar with the complete list of unallowable costs which is contained in the applicable cost principles. Because of their sensitivity, the following categories of unallowable costs are highlighted:

(i) *Entertainment*

Costs of entertainment, amusement, diversion and social activities and any costs directly associated with such activities (such as tickets to shows or sports events, meals, lodging, rentals, transportation and gratuities) are unallowable. Expenses of grantee employees who are not on travel status are unallowable. This includes cases where they serve as hosts or otherwise participate at meals that are primarily social occasions involving speakers or consultants. Costs of employees on travel status are limited to those allowed under the governing cost principles for travel expenses. (See GPM Section 614.)

(ii) *Meals and Coffee Breaks*

No NSF funds may be spent on meals or coffee breaks for intramural meetings of an organization or any of its components, including, but not limited to, laboratories, departments and centers.

(iii) *Alcoholic Beverages*

No NSF funds may be spent on alcoholic beverages.

8. Current and Pending Support -- Proposal Section G

A model format to provide *Current and Pending Support* information (NSF Form 1239) is shown in the Proposal Forms Kit. Use of this format is optional, however, categories of information included on the NSF Form 1239 must be provided. This section of the proposal calls for required information on all current and pending support for ongoing projects and proposals, including subsequent funding in the case of continuing grants. All current project support from whatever source (e.g., Federal, State or local government agencies, private foundations, industrial or other commercial organizations) must be listed. The proposed project and all other projects or activities requiring a portion of time of the PI and other senior personnel should be included, even if they receive no salary support from the project(s). The number of person-months per year to be devoted to the projects must be stated, regardless of source of support. Similar information must be provided for all proposals already submitted or submitted concurrently to other possible sponsors, including NSF.

If the project now being submitted has been funded previously by a source other than NSF, the information requested in the paragraph above should be furnished for the last period of funding.

If the proposal is also being submitted to other possible sponsors, all of them must be listed. Concurrent submission of a proposal to other organizations will not prejudice its review by NSF. Note the Biological Sciences Directorate exception to this policy identified on page 1.

9. Facilities, Equipment and Other Resources -- Proposal Section H

A model format to provide *Facilities, Equipment and Other Resources* information (NSF Form 1363), is included in the Proposal Forms Kit. Use of this format is optional. This section of the proposal is used to assess the adequacy of the organizational resources available to perform the effort proposed. Proposers should describe only those resources that are directly applicable.

10. Special Information and Supplementary Documentation -- Proposal Section I

Except as specified below, special information and supplementary documentation should be part of the 15-page Project Description (or part of the budget justification) where it is relevant to determining the quality of the proposed work. Information in the following areas should be included in Section I and not counted as part of the 15-page Project Description limitation. This Special Information and Supplementary Documentation Section is not considered an appendix. Specific guidance on the need for additional documentation may be obtained from the organization's sponsored projects office or in the references cited below.

- Rationale for performance of all or part of the project off-campus or away from organizational headquarters. (GPM Section 633)
- Documentation of collaborative arrangements of significance to the proposal through letters of commitment. (GPG II.D.4)
- Environmental impact statement for activities that have an actual or potential impact on the environment. (GPM Section 830) Where applicable, the box for "National Environmental Policy Act" should be checked on the NSF Form 1207.
- Work in foreign countries. Some governments require nonresidents to obtain official approval to carry out investigations within their borders and coastal waters under their jurisdiction. PIs are responsible for obtaining the required authorizations and for advising NSF that they have been obtained or requested. Advance coordination should minimize disruption of the research. (GPM Section 763)
- Research in the Antarctic and Greenland. (Contact the NSF Office of Polar Programs (OPP) for additional information; see Appendix A for phone numbers.)
- Research in a location designated, or eligible to be designated, a registered historic place. (GPM Section 840) Where applicable, the box for "Historic Places" should be checked on the NSF Form 1207.
- Research involving field experiments with genetically engineered organisms. (GPM Section 712)
- Research involving the use of human subjects, hazardous materials, vertebrate animals, or endangered species. (GPM Section 710, GPG II.D.12.d and e)

- Projects that involve technology utilization/transfer activities, that require a management plan, or that involve special reports or final products.
- Projects containing a special component, such as Facilitation Awards for Scientists and Engineers with Disabilities or Research Opportunity Awards. (GPG V.G. and H.)
- *Research in Undergraduate Institutions*. (See program announcement/solicitation for information.)

In addition, Section I should alert NSF officials to unusual circumstances that require special handling, including, for example, proprietary or other privileged information in the proposal, matters affecting individual privacy, required intergovernmental review under E.O. 12372, *Intergovernmental Review of Federal Programs,* for activities that directly affect State or local governments or possible national security implications.

11. Appendices -- Proposal Section J

All information necessary for the review of a proposal should be contained in Sections A through I of the proposal. **Appendices may not be included unless a deviation has been authorized.** Section II.A. contains information on deviations.

12. Special Guidelines

a. Small Grants for Exploratory Research (SGER)

Proposals (only one copy required) for small-scale, exploratory, high-risk research in the fields of science, engineering and education normally supported by NSF may be submitted to individual programs. Such research is characterized as:

- preliminary work on untested and novel ideas;
- ventures into emerging research areas;
- application of new expertise or new approaches to "established" research topics;
- having a severe urgency with regard to availability of, or access to data, facilities or specialized equipment, including quick-response research on natural disasters and similar unanticipated events; or
- efforts of similar character likely to catalyze rapid and innovative advances.

The project description should be brief (two to five pages) and include clear statements as to why the proposed research should be considered particularly exploratory and high risk, the nature and significance of its potential impact on the field and why an SGER grant would be a suitable means of supporting the work.

Brief biographical information is required for the PI and co-PI(s) only, and should list no more than five significant publications or other research products. The box for "Small Grant for Exploratory Research" should be checked on the NSF Form 1207.

These proposals will be subject to internal NSF merit review only. Renewed funding of SGER awards may be requested only through submission of a non-SGER proposal, which will be subject to full merit review.

Under a three-year experiment, effective until October 1, 2000, the maximum SGER award amount will not exceed $100,000. Although the maximum award amount is $100,000, the award amount usually will be substantially less than a given program's average award amount. The project's duration will normally be one year, but may be up to two years.

[10]For participating directorates and at the discretion of the Program Officer, with the concurrence of the Division Director, a small fraction of especially promising SGER awards may be extended for a period of six additional months and supplemented with up to $50,000 in additional funding. The SGER award extensions will be possible for awards of two-year initial duration as well as for those of shorter initial duration. Requests for extensions should be submitted one to two months before the expiration date of the initial award. A progress report and outline of proposed research, not to exceed five pages, should be included.

Investigators are **strongly encouraged** to contact the NSF program(s) most germane to the proposal topic before submitting an SGER proposal. This will facilitate determining whether the proposed work meets the guidelines described above and availability and appropriateness for SGER funding, or whether the work is more appropriate for submission as a fully reviewed proposal. (See Appendix A for programs.)

b. Group and Collaborative Proposals

A group proposal is a proposal that is submitted by three or more investigators and combines into one administrative mechanism several projects that ordinarily would be funded separately. A single individual bears primary responsibility for the administration of the grant and discussions with NSF, although several investigators may be designated as co-PIs. These grants support groups of scientists or engineers who themselves judge that the effectiveness of their work would be enhanced by group funding.

In submission of a group proposal, the organization has determined that the proposed activity is administratively manageable. However, NSF may request a revised proposal if it considers that the project is so complex that it will be too difficult to review or administer. The box for "Group Proposal" should be checked on the NSF Form 1207. In addition, group proposals should be indicated as such in a cover letter accompanying the proposal and in the project description.

Where **multiple organizations** are involved in collaborative or joint arrangements, the proposal may be submitted by only one of them. It should clearly describe both the role to be played by the other organizations, specify the managerial arrangements and explain the advantages of the multi-organizational effort.

[10] The Biological Sciences and Education and Human Resources Directorates will not participate in the extension or supplementation of SGER awards.

In some instances, however, simultaneous submission of related proposals from each organization might be appropriate, in which case parallel awards would be made. In such cases, for purposes of NSF review and processing, each proposal should be a complete package and include the cover sheets for all organizations, biographical sketches for all PIs, statements of current and pending support, and budgets and budget justifications for each organization. One institution must take the lead, submitting the original from their institution plus the required number of copies for use in the review process. The other institution(s) need only submit their original copy to NSF.

PIs wishing to submit group proposals that might exceed the 15-page limitation on the project description should discuss that possibility with the cognizant Program Officer prior to submission. In general, group proposals that contain up to ten pages of overall project description (including overall progress under the appropriate prior award) plus up to five pages *per person* of individual project descriptions (including description of progress under prior awards) will be acceptable.

c. Equipment Proposals

Proposals for specialized equipment may be submitted by an organization for: (1) individual investigators; (2) groups of investigators within the same department; (3) several departments; (4) organization(s) participating in a collaborative or joint arrangement; (5) any components of an organization; or (6) a region. One individual should be designated as PI. Investigators may be working in closely related areas or their research may be multidisciplinary.

Note: Many organizations within NSF have formal instrumentation programs with special guidelines. It is important to use the applicable guidelines in these competitions. The appropriate program should be consulted.

Instrumentation and equipment proposals should follow the format of research proposals. Each potential major user should describe the project(s) for which the equipment will be used. These descriptions should be succinct, not necessarily as detailed as in an individual research proposal and should emphasize the intrinsic merit of the activity and the importance of the equipment to it. A brief summary will suffice for auxiliary users.

Equipment to be purchased, modified or constructed should be described in sufficient detail to allow comparison of its capabilities with the needs of the proposed activities. Equipment proposals should also describe comparable equipment already at the proposing organization(s) and explain why it cannot be used. This includes comparable government-owned equipment that is on-site.

Equipment proposals should discuss arrangements for acquisition, maintenance and operation, including:

- overall acquisition plan;
- biographical sketch of the person(s) who will have overall responsibility for maintenance and operation and a brief statement of qualifications, if not obvious;
- description of the physical facility, including floor plans or other appropriate information, where the equipment will be located;
- statement of why the equipment is severable or non-severable from the physical facility;
- annual budget for operation and maintenance of the proposed equipment, indicating source of funds; and
- brief description of other support services available, particularly related equipment, and the annual budget for their operation, maintenance and administration.

The terms of a grant require that special-purpose equipment purchased or leased with grant funds be subject to reasonable inventory controls, maintenance procedures and organizational policies that enhance its multiple or shared use on other projects, if such use does not interfere with the work for which the equipment was acquired. If the government retains title, those items must be included in the annual inventory submitted to the NSF Property Administrator. Equipment proposals should include the information described above within the 15-page project description.

These proposals normally compete with proposals for research or education projects. Some instrumentation programs have special guidelines for support of equipment that may include special cost-sharing or other requirements. See individual program announcement or solicitation for specific requirements.

For additional information on other NSF opportunities in this area, see Section V.A. on the Major Research Instrumentation Program (MRI).

d. Proposals Involving Vertebrate Animals

For proposals involving the use of vertebrate animals, sufficient information should be provided within the 15-page project description to allow for evaluation of the choice of species, number of animals to be used and any necessary exposure of animals to discomfort, pain or injury. All projects involving vertebrate animals must have approval from the organization's Institutional Animal Care and Use Committee (IACUC) before issuance of an NSF award. The box for "Vertebrate Animals" should be checked on the NSF Form 1207 with the IACUC approval date (if available) identified in the space provided.

e. Proposals Involving Human Subjects

Projects involving research with human subjects must ensure that subjects are protected from research risks in conformance with the Common Rule (*Federal Policy for the Protection of Human Subjects*, 45 CFR §690). All projects involving human subjects must either: (1) have approval from the organization's Institutional Review Board (IRB) before issuance of an NSF award; or (2) identify the applicable subsection exempting the proposal from IRB review, as established in section 101(b) of the Common Rule. The box for "Human Subjects" should be checked on the NSF Form 1207 with the IRB approval date (if available) or exemption subsection from the Common Rule identified in the space provided.

CHAPTER III NSF PROPOSAL PROCESSING AND REVIEW

Proposals received by the NSF Proposal Processing Unit are assigned to the appropriate NSF program for acknowledgment and, if they meet NSF requirements, for review. All proposals are carefully reviewed by a scientist, engineer, or educator serving as an NSF Program Officer, and usually by three to ten other persons outside NSF who are experts in the particular field represented by the proposal. Proposers are invited to suggest names of persons they believe are especially well qualified to review the proposal 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. Program Officers may obtain comments from assembled review panels or from site visits before recommending final action on proposals. Recommendations for awards are further reviewed by senior NSF staff.

A. REVIEW CRITERIA

The National Science Board approved revised criteria for evaluating proposals submitted to NSF at its meeting on March 28, 1997 (NSB97-72). The revised criteria are designed to be useful and relevant across NSF's many different programs, however, NSF will continue to employ special criteria as required to highlight the specific objectives of certain programs and activities.

The revised merit review criteria are listed below. Following each criterion are potential considerations that the reviewer may employ in the evaluation. These are suggestions and not all will apply to any given proposal. Each reviewer will address only those that are relevant to the proposal 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 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?

B. REVISIONS TO PROPOSALS MADE DURING THE REVIEW PROCESS

In the event of a significant development that might materially affect the outcome of the review of a pending proposal, the proposer should contact the Program Officer to whom the proposal is assigned to discuss the finding or changed circumstances. Submitting additional information must not be used as a means of circumventing page limitations or stated deadlines, but is intended to provide an opportunity to communicate unexpected and significant developments.

Before recommending whether or not NSF should support a particular project, the NSF Program Officer may, subject to certain constraints outlined below, engage in discussions with the proposing PIs.

Negotiating budgets generally involves discussing a lower or higher amount of total support for the proposed project. NSF Program Officers are encouraged to discuss possible "bottom-line" award amounts with PIs. The NSF Program Officer also may suggest reducing or eliminating costs for specific budget items which are clearly too high or unreasonable for the activities to be undertaken; however, this would not generally include faculty salaries (without corresponding reduction in effort), salary rates, fringe benefits, tuition remission or indirect costs (F&A).

When such discussions result in significant changes in the basic objectives or scope of the project as originally proposed, an appropriate proposal modification (which may include a revised proposal budget) signed by the PI and the Authorized Organizational Representative must be submitted to the NSF Program Officer. By signing and submitting this modification to the proposal, the PI and AOR are certifying to the accuracy and completeness of the information provided.

C. AWARD 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. Normally, final programmatic approval is at the division level[11]. Because of the large volume of proposals, this review and consideration process may take up to six months. Large or particularly complex proposals may require additional review and processing time. If the program recommendation is for an award and final division or other programmatic approval is obtained, then the recommendation goes 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. The Division of Grants and Agreements generally makes awards to academic institutions within 30 days after the program division makes its recommendation.

[11] Recommended awards of $3,000,000 per year or $15,000,000 over the life of the award must be reviewed and approved by the National Science Board.

Grants being made to organizations that have not received an NSF award within the preceding two years, or involving special situations (such as coordination with another Federal agency or a private funding source), cooperative agreements, and other unusual arrangements may require additional review and processing time.

Proposers are cautioned that only an appointed Grants Officer in the Division of Grants and Agreements may make commitments, obligations or awards on behalf of NSF or authorize the expenditure of funds. No commitment on the part of NSF or the Government should be inferred from technical or budgetary discussions with an NSF Program Officer. A PI or organization that makes financial or personnel commitments in the absence of a grant or cooperative agreement signed by the NSF Grants Officer does so at its own risk.

D. COPIES OF REVIEWS

When a decision has been made (whether an award or a declination), verbatim copies of reviews, excluding the names of the reviewers, and summaries of review panel deliberations, if any, are mailed to the PI. Proposers may also request and obtain any other releasable material in NSF's file on their proposal. Everything in the file except information that directly identifies either reviewers or other pending or declined proposals is usually releasable to the proposer.

CHAPTER IV WITHDRAWALS, RETURNS AND DECLINATIONS

A. WITHDRAWALS

A proposal may be withdrawn at any time before a final decision is made. A request for withdrawal must be signed by both the PI and the Authorized Organizational Representative. Confirmation of withdrawal requests will be sent by NSF. NSF must be notified if any funding for the proposed project is received from another source or sponsor. If it is brought to NSF's attention that funding for a proposal to NSF has been accepted from another sponsor, NSF will send a withdrawal confirmation letter to the PI and the Authorized Organizational Representative without waiting for the official withdrawal request.

NSF does not normally return the copies of withdrawn proposals to the proposer but does retain a file copy. Copies of reviews received by NSF before a proposal is withdrawn will be provided to the PI.

NSF provides copies of withdrawal, return, declination, reconsideration or resubmission information to both the PI and the Authorized Organizational Representative.

B. RETURNS

Proposals may not be considered for review by NSF for the following reasons: (1) inappropriate for NSF funding; (2) submitted with insufficient lead time before activity is to begin; (3) does not meet NSF requirements for proposal content, format, etc.; (4) does not meet announced proposal deadline date requirements; (5) the proposal was previously reviewed and declined and has not been substantially revised; or (6) the proposal is a duplicate of or substantially similar to a proposal already under consideration by NSF.

C. DECLINATIONS

A PI whose proposal for NSF support has been declined generally will receive information and an explanation of the reasons for declination along with copies of the reviews considered in making the funding decision. If that explanation does not satisfy the PI, he/she may request additional information from the cognizant Program Officer.

D. RECONSIDERATION

If the explanation provided does not satisfy the PI, he/she may request that the cognizant NSF Assistant Director or Office Head reconsider the action to determine whether the proposal received a fair and reasonable review, both substantively and procedurally. A PI whose proposal has not been accepted because it is inappropriate for consideration by NSF may also request reconsideration of this determination. The request for reconsideration must be in writing and must be received within 90 days after the date of the declination letter or return. If the proposing organization is still not satisfied after reconsideration by the responsible Assistant Director/Office Head, it may, within 60 days after the determination by the Assistant Director/Office Head, request further reconsideration by the NSF Deputy Director. Consult GPM Section 900 for additional information on the NSF Reconsideration process.

E. RESUBMISSION

A declined proposal may be resubmitted, but only after it has undergone substantial revision. Resubmittals that have not clearly taken into account the major comments or concerns resulting from the prior NSF review may be returned without further review. The Foundation will treat the revised proposal as a new proposal, subject to the standard review procedures.

CHAPTER V SPECIAL PROGRAMS

A. RESEARCH INSTRUMENTATION/FACILITIES

The Major Research Instrumentation Program (MRI) assists in the acquisition or development of major research instrumentation by U.S. institutions that is, in general, too costly for support through other NSF programs. The MRI program is designed to improve the condition of scientific and engineering equipment and facilities for research and research training in our Nation's academic institutions. This program seeks to improve the quality and expand the scope of research and research training in science and engineering, and to foster the integration of research and education by providing instrumentation for research-intensive learning environments. For more information, see the program solicitation or contact the Office of Science and Technology Infrastructure. (See Appendix A.)

Also, NSF occasionally provides assistance for the acquisition of specialized facilities. Examples include supercomputers, oceanographic research vessels, polar research facilities and national astronomy centers.

All NSF programs will consider proposals that include funds for facility construction, renovation or improvements where required for the proposed research, in competition with other proposals received. It is, however, NSF policy that the principal responsibility for providing facilities for research and education rests with the proposing organizations. Preliminary inquiry should be made before preparing a formal proposal. (See Section VII.D for additional information on equipment.)

B. CONFERENCES, SYMPOSIA AND WORKSHOPS

NSF supports conferences, symposia and workshops in special areas of science and engineering that bring experts together to discuss recent research or education findings or to expose other researchers or students to new research and education techniques. NSF encourages the convening in the U.S. of major international conferences and unions. Conferences will be supported only if equivalent results cannot be obtained at regular meetings of professional societies. Although requests for support of conferences, symposia and workshops ordinarily originate with educational institutions or scientific societies, they may also come from other groups. Shared support by several Federal agencies, States or private organizations is encouraged. Because proceedings of such conferences normally should be published in professional journals, requests for support may include publication costs. Requests should generally be made at least a year in advance of the scheduled date. Conferences or meetings, including the facilities in which they are held, funded in whole or in part with NSF funds, must be accessible to participants with disabilities.

A conference, symposium or workshop proposal (which complies with the page and font size instructions in Section II.C.) must be assembled in the following sequence:

- *Cover Sheet for the National Science Foundation* (NSF Form 1207)
- Summary of one page or less indicating the objectives of the project.
- Statement of the need for such a gathering and a list of topics.
- Recent meetings on the same subject, including dates and places.
- Names of the chairperson and members of organizing committees and their organizational affiliations.
- Information on the location and probable date(s) of the meeting and the method of announcement or invitation.
- Statement of how the meeting will be organized and conducted, how the results of the meeting will be disseminated and how the meeting will contribute to the enhancement and improvement of scientific, engineering and/or educational activities.
- Estimated total budget for the conference together with an itemized statement of the amount of support requested from NSF. The budget may include participant support for transportation (when appropriate), per diem costs, stipends, publication and other conference-related costs. Participant support costs must be excluded from the indirect cost base. (See Section II.D.7.e.) (NSF Form 1030, *Summary Proposal Budget*, should be used to submit the budgetary information.)
- Support requested or available from other Federal agencies and other sources. (NSF Form 1239, *Current and Pending Support*, may be used to submit this information.)

For additional coverage on allowability of costs associated with meetings and conferences, proposers should consult GPM Section 625.

C. INTERNATIONAL COOPERATIVE ACTIVITIES

In addition to the international projects funded and managed by the disciplinary directorates, the Division of International Programs provides support for bilateral and regional cooperative science and engineering projects to foster and facilitate cooperation between U.S. investigators and their foreign colleagues in joint activities of mutual interest and benefit. Grants may be made for the U.S. portion of the costs of the initial phases of cooperative research, joint seminars and workshops, planning visits, programs to enhance the international perspectives of the next generation of U.S. scientists and engineers, and for fellowships, summer programs and research participation. Information on proposal requirements and award selection procedures is contained in the Program Announcement of the Division of International Programs. The box for "International Cooperative Activity" should be checked and the countries identified on the NSF Form 1207. (For telephone numbers and program contacts by region, see Appendix A, under listings for SBE Directorate.) The program announcement is available electronically via http://www.nsf.gov/sbe/int/.

D. INTERNATIONAL TRAVEL GRANTS

Proposals for travel support for U.S. participation in international scientific and engineering meetings held abroad are handled by the NSF organizational unit with program responsibility for the area of research interest.

Group travel awards are encouraged as the primary means of support for international travel. A university, professional society or other non-profit organization may apply for funds to enable it to coordinate and support U.S. participation in one or more international scientific meeting(s) abroad. Group travel grants may include as compensation for the grantee a flat rate of $50 per traveler for general administrative costs of preparing announcements, evaluating proposals and handling travel arrangements customarily associated with this type of project. (See GPM Section 765.) Group travel grantees are required to retain supporting documentation that funds were spent in accordance with the original intent of the proposal. Such documentation may be required in final reports and is subject to audit.

E. DOCTORAL DISSERTATION RESEARCH

NSF awards grants in support of doctoral dissertation research in some disciplines, primarily field research in the environmental, behavioral and social sciences. Support may be sought through those disciplinary programs and, in cases involving research abroad, through the Division of International Programs. Proposals are submitted by the thesis advisor or concerned faculty member on behalf of the graduate student. Further information can be obtained from the cognizant program office.

F. HUMAN RESOURCES DEVELOPMENT

The Foundation supports a range of activities to increase participation by women, minorities, persons with disabilities and by faculty from minority institutions and predominantly undergraduate institutions. Programs which have a strong focus on underrepresented communities are:

- Professional Opportunities for Women in Research and Education
- Research Planning Grants and Career Advancement Awards for Minority Scientists and Engineers
- Opportunities for Persons with Disabilities
- Centers for Research Excellence in Science and Technology
- Research Assistantships for Minority High School Students
- Alliances for Minority Participation
- Research Opportunity Awards
- Facilitation Awards for Scientists and Engineers with Disabilities
- Faculty Early Career Development
- Comprehensive Partnerships for Mathematics and Science Achievement
- Presidential Awards for Excellence in Science, Mathematics and Engineering Mentoring Program
- Program for Women and Girls (K-16)
- Model Institutions for Excellence
- Minority Postdoctoral Research Fellowships and Graduate Student Travel in the Biological, Social, Behavioral and Economic Sciences

In some cases, additional information may be required as part of a proposal. Program announcements/solicitations describing these activities are available from the Forms and Publications Unit or general information may be obtained from the NSF Information Center at (703) 306-1234.

G. FACILITATION AWARDS FOR SCIENTISTS AND ENGINEERS WITH DISABILITIES

Facilitation Awards for Scientists and Engineers with Disabilities encourage participation in NSF Programs by scientists and engineers (investigators or other staff, postdoctoral associates, student research assistants and awardees and honorable mention recipients for Graduate and Minority Graduate Fellowships) with disabilities. This effort provides funds for equipment or assistance specifically required for performance of research on an NSF-supported project. Requests for support may be included in new proposals submitted to any NSF program or in requests for supplements to existing grants, and the box for "Facilitation for Scientists/Engineers with Disabilities" should be checked on the NSF Form 1207.

H. RESEARCH OPPORTUNITY AWARDS (ROAs)

A faculty member at an organization with limited research opportunities may arrange to work with a PI at another organization who holds or is applying for an NSF research grant. If supplemental funds are required to cover additional costs, the PI should make preliminary contact with the cognizant Program Officer. The formal ROA request letter, endorsed by the organization and addressed to the program office, should be received at least three months before funds will be needed. It must include: a description of the arrangements and the work to be performed by the ROA visitor; a statement of the contribution of this work to the NSF project and to the visitor's future research and home organizations; a budget (NSF Form 1030) with appropriate explanatory information; a biographical sketch of the visitor and any additional information as specified by the Program Officer. The box for "Research Opportunity Award" should be checked on the NSF Form 1207. See the *Research in Undergraduate Institutions* program announcement for further details.

I. RESEARCH EXPERIENCES FOR UNDERGRADUATES (REUs)

REUs provide opportunities for talented undergraduate students to participate in active research in mathematics, science and engineering. Awards are of two types:

- *Sites*--grants to initiate and support undergraduate research participation sites. These projects could be carried out during the summer months, the academic year or both. NSF expects that an appropriate number of students will be involved, and proposals involving fewer than four to six students are discouraged.

- *Supplements*--to ongoing NSF research grants provide research training experiences for one or two additional undergraduates. Funds will normally be available for up to two students, but exceptions will be considered for training additional minority and women students and students with disabilities.

See the program announcement/solicitation for more information.

J. PARTNERSHIPS FOR ADVANCED COMPUTATIONAL INFRASTRUCTURE (PACI)

NSF supports two Partnerships for Advanced Computational Infrastructure which provide access to a variety of high performance computing platforms. These include parallel and vector supercomputers, visualization facilities and data storage capabilities. User access is available at the leading edge sites of the Partnerships, and at some of the partner institutions. Major requests for allocations are reviewed by a national committee of computational scientists which meets twice a year. Smaller, local allocations are handled by each Partnership on a quarterly basis.

K. SMALL BUSINESS INNOVATION RESEARCH (SBIR) PROGRAM

The Small Business Innovation Research (SBIR) Program is a highly competitive three-phase process which provides eligible small businesses with opportunities to propose innovative ideas that meet specific Research and Development (R&D) needs of the Federal Government. Phase I is a six-month effort to determine the scientific, technical and commercial merit and feasibility of the proposed concept or idea, and establishes the eligibility for Phase II. Phase II is a two-year effort that further develops the proposed concept and demonstrates the potential for commercialization. Phase III is the commercialization phase and is funded by non-SBIR sources, normally from the private sector. For more detailed information regarding the SBIR Program, proposers should consult the NSF SBIR solicitation.

L. SMALL BUSINESS TECHNOLOGY TRANSFER (STTR) PROGRAM

The Small Business Technology Transfer (STTR) Program is a pilot program encouraging technology transfer through jointly conducted research between small business concerns and non-profit research organizations. The program follows the same three-phase process as the SBIR Program. Proposals must be submitted by the small business and the proposed effort must be responsive to the program focus described in the annual STTR Program solicitation. Phase I is a 12-month project which determines the scientific, technical and commercial merit and feasibility of the proposed concept or idea and establishes the eligibility for Phase II. Phase II is a 24-month effort that further develops the proposed concept and demonstrates the potential for commercialization. Phase III is to pursue commercialization from the Government-funded research with non-STTR funds, primarily from the private sector. For more detailed information regarding the STTR Program, proposers should consult the NSF STTR solicitation.

CHAPTER VI THE AWARD AND CONTINUED SUPPORT

A. STANDARD AND CONTINUING GRANTS

NSF awards two types of grants:

Standard Grants, in which NSF agrees to provide a specific level of support for a specified period of time with no statement of NSF intent to provide additional future support without submission of another proposal; and

Continuing Grants, in which NSF agrees to provide a specific level of support for an initial specified period of time, usually a year, with a statement of intent to provide additional support of the project for additional periods, provided funds are available and the results achieved warrant further support.

Notification of an NSF grant is by a letter signed by an NSF Grants Officer, addressed to the Grantee Organization. An NSF grant consists of: (1) the award letter, which includes any special provisions applicable to the grant 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 grant conditions[12], such as Grant General Conditions (NSF GC-1) or Federal Demonstration Partnership (FDP) Terms and Conditions and (5) any NSF brochure, program guide, announcement or other NSF issuance that may be incorporated by reference in the award letter. Electronic mail notification is the preferred way to transmit NSF grants to organizations that have electronic mail capabilities and have requested such notification from the Division of Grants and Agreements.

Effective/Expiration Dates and Preaward Costs. The grant period begins on the effective date specified in the award letter or, in its absence, the date of the award letter and runs until the expiration date indicated. Expenditures incurred within the 90-day period preceding the effective date of the grant may be authorized by the grantee organization. Such expenditures, however, are made at the grantee's risk. Expenditures after the scheduled expiration date of the grant may be made only to honor documented commitments made on or before the expiration date. PIs should consult their business offices for details.

B. ADDITIONAL SUPPORT

1. Incremental Funding

Incremental funding for continuing grants within the total duration of the project is based on NSF review of Progress Reports and does not require submission of a new proposal. For each increment, an annual progress report addressed to the cognizant program office, with a copy to the Authorized Organizational Representative, must be received by NSF at least three months before the end of the period currently being funded. For information on a new electronic reporting capability for submission of project reporting information, see Section VII.G.1.

2. Renewal Proposals

Proposals for additional funding for a support period subsequent to that provided by a standard or continuing grant compete with all other pending proposals and should be submitted at least six months before additional funding is required or consistent with an established deadline or target date. In preparing a renewal proposal, proposers should assume that reviewers will not have access to previous proposals.

All proposals for renewed support of research projects from academic institutions *only* must include, as part of Results from Prior NSF Support, information about any contribution of the completed project to the education and development of human resources in science and engineering at the postdoctoral, graduate and undergraduate levels. Commercial organizations and other non-profit organizations are exempt from this requirement. (See Section II.D.4. for more information.)

PIs are encouraged to discuss renewal proposals with the Program prior to submission of a proposal. Unless precluded by individual program requirements, PIs can choose either of two formats for a renewal proposal:

- The "traditional" renewal proposal is developed as fully as though the proposer were applying for the first time. It covers all the information required in a proposal for a new project, including results from the prior work. The 15-page limitation on the project description applies.

- In an "Accomplishment-Based Renewal" (ABR) proposal, the project description is replaced by copies of no more than six reprints of publications resulting from the research supported by NSF (including research supported by other sources that is closely related to the NSF-supported research) during the preceding three- to five-year period. Of the six publications, two preprints (accepted for publication) may be included. In addition, a brief (not to exceed four pages) summary of plans for the proposed support period must be submitted. All other information required for NSF proposal submission remains the same. It must be clearly indicated in the proposal and the box for "ABR" should be checked on the NSF Form 1207. ABR proposals may not be submitted for consecutive renewals.

[12] Additional coverage on the NSF grant conditions (e.g., GC-1 and FDP) is contained in GPM Section 240. These conditions are also available at grantee organization sponsored projects offices as well as on the NSF home page at www.nsf.gov/.

3. Two-Year Extensions for Special Creativity

A Program Officer may recommend the extension of funding for certain research grants beyond the initial period for which the grant was awarded. The objective of such extensions is to offer the most creative investigators an extended opportunity to attack adventurous, "high-risk" opportunities in the same general research area, but not necessarily covered by the original/current proposal. Awards eligible for such an extension are generally three-year continuing grants.

Special Creativity Extensions are initiated by the NSF Program Officer based on progress during the first two years of a three-year grant; PIs will be informed of such action a year in advance of the expiration of the grant.

4. Supplemental Funding

In unusual circumstances, small amounts of supplemental funding and up to six months of additional support may be requested to assure adequate completion of the original scope of work. The grantee may submit a request for supplemental funding to the cognizant NSF Program Officer at least two months before funds are needed. Program Officers may make decisions regarding whether or not to recommend a small supplement without merit review of the supplemental request. Requests for larger supplements may require merit review. Such requests should include a brief justification and a budget signed by the PI and the Authorized Organizational Representative. Supplemental funding requests will not be approved for such purposes as defraying costs associated with increases in salaries or additional indirect cost reimbursement. Grantees should contact the cognizant Program Officer prior to submitting a proposal for a supplemental request. See GPM 264 for additional information on Supplemental Funding requests.

In addition, limited supplemental funds are available for special NSF programs, such as *Facilitation Awards for Scientists and Engineers with Disabilities, Research Opportunity Awards,* and *Research Experiences for Undergraduates.* (See Sections V.G.-I. and the appropriate program brochures.)

C. NO-COST EXTENSIONS

1. Grantee Authorized Extension

Grantees may authorize a one-time extension of the expiration date of the grant of up to 12 months if additional time beyond the established expiration date is required to assure adequate completion of the original scope of work within the funds already made available. This one-time extension may not be exercised merely for the purpose of using the unliquidated balances. The grantee shall notify the NSF Grants Officer in writing, providing supporting reasons for the extension and the revised extension date, at least ten days prior to the expiration date specified in the grant to ensure accuracy of NSF's grant data. For extensions provided by organizations, no amendment will be issued. Grantees are strongly encouraged to use the NSF FastLane system to transmit their no-cost extension notifications to NSF.

2. NSF-Approved Extension

If additional time beyond the extension provided by the grantee is required and exceptional circumstances warrant, a formal request must be submitted to NSF. Two copies of the request, signed by the PI and the Authorized Organizational Representative, must be received by the cognizant NSF program office at least 45 days before the expiration date of the grant. The request must explain the need for the extension and include an estimate of the unobligated funds remaining and a plan for their use. As indicated above, that unobligated funds may remain at the expiration of the grant is not in itself sufficient justification for an extension. The plan must adhere to the previously approved objectives of the project.

Any NSF-approved no-cost extension will be issued by an NSF Grants Officer in the form of an amendment to the grant specifying a new expiration date. Grantees are cautioned not to make new commitments or incur new expenditures after the expiration date in anticipation of a no-cost extension. Grantees are strongly encouraged to use the NSF FastLane system to submit their no-cost extension requests to NSF.

CHAPTER VII GRANT ADMINISTRATION HIGHLIGHTS

The administration of grants is governed by the actual conditions of the grant. (See Section VI.A. for additional information regarding the contents of an NSF grant.) The following information highlights frequently asked grant administration questions.

For additional information about the award and administration of NSF grants, proposers and grantees may refer to the NSF *Grant Policy Manual* (NSF 95-26).

The grantee organization has primary responsibility for general supervision of all grant activities and for notifying NSF of significant problems relating to misconduct in science and engineering or administrative matters. The PI is responsible for the conduct of the research or educational work, the publication of results, and is expected to provide technical leadership to the project whether or not any salary is provided from grant funds.

NSF encourages PIs to communicate the progress of projects supported by NSF to program officers.

A. GENERAL REQUIREMENTS

Grants for financial assistance are subject to certain statutory and other general requirements, such as compliance with the Civil Rights Act of 1964, title IX of the Education Amendments of 1972, and other laws and regulations prohibiting discrimination; prohibition of misconduct in science and engineering; Drug-Free Workplace requirements; restrictions on lobbying; patent and copyright requirements; cost-sharing; and the use of U.S.-flag carriers for international travel. These are identified in the GPM and are summarized in NSF Grant Conditions.

B. PRIOR APPROVAL REQUIREMENTS

Prior written authorization from NSF is required for the following: (1) transfer of the project effort; (2) change in objectives or scope; (3) change in PI; (4) a substantial change in PI effort; (5) reallocation of funds budgeted for participant support; or (6) construction activities costing $10,000 or more. Changes in participant support costs require Program Officer approval; all the other changes listed above require Grants Officer approval. (See also GPM Exhibit III-1 which highlights grantee notifications to and requests for approval from NSF.) Many of the requests for prior approval identified above can be submitted electronically to NSF through use of the NSF FastLane system. Grantees are strongly encouraged to use FastLane to process these types of transactions.

C. TRANSFER OF PI

If a PI plans to leave an organization during the course of a grant, the organization has the prerogative to nominate a replacement PI or request that the grant be terminated. Replacement PIs are subject to NSF approval. In those cases where a particular PI's participation is integral to a given project and the PI's original and new organizations agree, NSF will arrange a transfer of the grant and the assignment of remaining unobligated funds to the PI's new organization. (See GPM Section 312 and GPM Exhibit III-2 for NSF Form 1263 "*NSF Grant Transfer Request*", or on the NSF home page at http://www.nsf.gov/bfa/cpo/forms/start.htm.) Upon transfer of the grant to the new organization, any monetary discrepancies must be resolved between the original and new grantee. In circumstances where NSF's interests are adversely affected by such discrepancies, it reserves the right to resolve the situation.

D. EQUIPMENT

Title to equipment purchased or fabricated by an academic institution or other non-profit organization with NSF grant funds normally vests in the grantee organization. Title to equipment acquired through an NSF grant by a small business or other commercial organization will normally vest in the Government. When title to specialized equipment purchased with grant funds vests in the grantee organization and the PI moves to another non-profit organization, NSF encourages transfer of the equipment to the new organization provided it is not required at the organization holding title, the cost of the transfer (shipping charges, freight, etc.) is not excessive and the PI continues the project at the new location.

E. EXCESS GOVERNMENT PROPERTY

As a means of providing additional support and conserving supply and equipment funds, NSF may sponsor the transfer of a limited quantity of excess Government-owned scientific equipment to an NSF grantee. To learn more about the NSF Grantee Excess Property Program, grantees should refer to GPM Section 546 or write to:

National Science Foundation
Property Section, DAS, Room 295
4201 Wilson Boulevard
Arlington, VA 22230

Before transfer of excess Government equipment can be authorized, justification must be provided to NSF by the grantee that the equipment will further the objectives of an active NSF grant. The NSF grant numbers should be cited.

F. SUSPENSION OR TERMINATION OF GRANTS

NSF grants may be suspended or terminated in accordance with the procedures contained in the Grant Conditions. Grants may also be terminated by mutual agreement. Termination by mutual agreement shall not affect any commitment of grant funds that, in the judgment of NSF and the grantee, had become firm before the effective date of the termination.

G. GRANT REPORTS

1. Annual Progress Reports

For all multi-year grants (including both standard and continuing grants), the PI must submit an annual progress 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 progress reports.) Unless otherwise specified in the grant, such reports should be submitted on NSF Form 1328 (see Appendix D). The report should briefly summarize activities during the past year, identify any significant research developments, describe any problems encountered and provide current information about other research support of senior personnel, if changed from the information previously submitted. The report should also include any other significant information pertinent to the type of project supported by NSF or as specified by the terms and conditions of the grant. The NSF Form 1328 must be signed by the PI.

NSF is planning to implement a new electronic project reporting system, through the NSF FastLane system, which will permit updating of reports on project participants (individual and organizational), activities and findings, publications, other specific products and contributions. The system also may be used to electronically submit the Results from NSF Support section of a new proposal. (See Section II.D.4.) Updates will be required annually, as with the current annual progress report requirement, but PIs will not need to re-enter information previously provided, either with the proposal or in earlier updates using the new electronic system. NSF expects the new electronic system to become the normal mechanism for project reporting to NSF. It is anticipated that the new NSF FastLane reporting system will be available for voluntary use shortly after October 1, 1997. The system initially will be available for use in reporting on single investigator research awards only. NSF hopes to make it available for other classes of awards over succeeding months. NSF will make an announcement when the system is available for use, at which point any PI who submits the information electronically will no longer need to file the paper NSF Form 1328.

Until the new project reporting system is available, annual reports should continue to be filed on NSF Form 1328 (or any other format prescribed by the award). Once the new NSF FastLane reporting system becomes available, NSF will encourage filing of project reports or updates through use of that system. NSF will not ***require*** use of the new system before October 1998.

2. Final Reports

Within 90 days after expiration of a grant, the PI must 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. Unless otherwise specified in the grant, the PI should use the NSF Form 98A (see Appendix E) to submit final project report information.

The Final Project Report should contain the technical information needed by NSF for program management and informing the public about the results of the activities it supports. The report also requests information on the gender, race, ethnicity, citizenship and disability status of individuals supported under the grant. Failure to provide final technical reports delays NSF review and processing of pending proposals for that PI. PIs should examine the form in advance to assure availability of required data.

The new electronic project reporting system described above will replace the NSF Form 98A along with other paper project reports. The PI will no longer need to re-enter information previously provided, either with the proposal or in progress updates provided earlier using the new electronic system. NSF expects the new electronic system to become the normal mechanism for project reporting to NSF. It is anticipated that the new NSF FastLane reporting system will be available for voluntary use shortly after October 1, 1997. NSF will make an announcement when the system is available for use, at which point any PI who submits the information electronically will no longer need to file the paper NSF Form 98A.

Until the new project reporting system is available, final reports should continue to be filed on NSF Form 98A (or any other format prescribed in the award). Once the NSF FastLane reporting system becomes available, NSF will encourage filing of project reports or updates through use of that system. NSF will not ***require*** use of the new system before October 1998.

Final expenditure information is provided by most grantees through the quarterly *Federal Cash Transactions Report,* SF 272, normally submitted (including a signed certification) by the grantee's financial officer. This information may also be submitted electronically through FastLane. Contact the Division of Financial Management for additional information at (703) 306-1283.

H. SHARING OF FINDINGS, DATA AND OTHER RESEARCH PRODUCTS

NSF advocates and encourages open scientific communication. NSF expects significant findings from supported research and educational activities to be promptly submitted for publication with authorship that accurately reflects the contributions of those involved. It expects PIs to share with other researchers, at no more than incremental cost and within a reasonable time, the data, samples, physical collections and other supporting materials created or gathered in the course of the work. It also encourages grantees to share software and inventions, once appropriate protection for them has been secured, and otherwise act to make the innovations they embody widely useful and usable.

NSF program management will implement these policies, in ways appropriate to field and circumstances, through the proposal review process; through award negotiations and conditions; and through appropriate support and incentives for data cleanup, documentation, dissemination, storage and the like. Adjustments and, where essential, exceptions may be allowed to safeguard the rights of individuals and subjects, the validity of results and the integrity of collections or to accommodate legitimate interests of investigators.

I. ACKNOWLEDGMENT OF SUPPORT AND DISCLAIMER

An acknowledgment of NSF support and a disclaimer must appear in publications (including World Wide Web pages) of any material, whether copyrighted or not, based on or developed under NSF-supported projects:

> This material is based upon work supported by the National Science Foundation under Grant No. (grantee should enter NSF grant number).

Except for articles or papers published in scientific, technical or professional journals, the following disclaimer should be included:

> Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

J. RELEASE OF GRANTEE PROPOSAL INFORMATION

A proposal that results in an NSF award will be available to the public on request, except for privileged information or material that is personal, proprietary or otherwise exempt from disclosure under law. Appropriate labeling in the proposal aids identification of what may be specifically exempt. (See Section II.D.7.a.(iii).) Such information will be withheld from public disclosure to the extent permitted by law, including the Freedom of Information Act. Without assuming any liability for inadvertent disclosure, NSF will seek to limit disclosure of such information to its employees and to outside reviewers when necessary for merit review of the proposal, or as otherwise authorized by law.

Portions of proposals resulting in grants that contain descriptions of inventions in which either the Government or the grantee owns a right, title, or interest (including a non-exclusive license) will not normally be made available to the public until a reasonable time has been allowed for filing patent applications. NSF will notify the grantee of receipt of requests for copies of funded proposals so the grantee may advise NSF of such inventions described, or other confidential, commercial or proprietary information contained in the proposal.

A proposal that does not result in an NSF grant will be retained by NSF for a prescribed time (currently five years), but will be released to the public only with the consent of the proposer or to the extent required by law.

K. LEGAL RIGHTS TO INTELLECTUAL PROPERTY

NSF normally allows grantees to retain principal legal rights to intellectual property developed under its grants. This policy provides incentive for development and dissemination of inventions, software and publications that can enhance their usefulness, accessibility and upkeep. It does not, however, reduce the responsibility of researchers and organizations to make results, data and collections available to the research community.

APPENDIX A PROGRAMS PROVIDING SUPPORT FOR SCIENTIFIC AND ENGINEERING RESEARCH AND EDUCATION

(Required number of copies of proposals, including original, in parentheses)

		Tel. No. Area Code (703)
OPP	**Office of Polar Programs (15)**	**306-1030**
	Arctic Sciences Section	306-1029
	Arctic Natural Sciences Program	306-1029
	Arctic Social Sciences Program	306-1029
	Arctic System Science Program	306-1029
	Arctic Research and Policy	306-1029
	Polar Research Support Section	306-1032
	Antarctic Sciences Section	306-1033
	Antarctic Information Program	306-1033
	Aeronomy and Astrophysics Program	306-1033
	Biology and Medicine Program	306-1033
	Geology and Geophysics Program	306-1033
	Glaciology Program	306-1033
	Ocean and Climate Sciences Program	306-1033
STI	**Office of Science & Technology Infrastructure**	**306-1040**
	Major Research Instrumentation Program (10)	306-1040
	Science and Technology Centers	306-1040
BIO	**Directorate for Biological Sciences**	**306-1400**
DBI	*Division of Biological Infrastructure (15)*	306-1470
	Instrument Related Activities	306-1469
	Research Resources	306-1469
	Training	306-1469
DEB	*Division of Environmental Biology (15)*	306-1480
	Ecological Studies	306-1479
	Systematic and Population Biology	306-1481
IBN	*Division of Integrative Biology & Neuroscience (15)*	306-1420
	Developmental Mechanisms	306-1417
	Neuroscience	306-1423
	Physiology & Behavior	306-1421
MCB	*Division of Molecular & Cellular Biosciences (15)*	306-1440
	Biomolecular Structure and Function	306-1443
	Biomolecular Processes	306-1441
	Cell Biology	306-1442
	Genetics	306-1439
CISE	**Directorate for Computer & Information Science & Engineering**	**306-1900**
ASC	*Division of Advanced Scientific Computing (15)*	306-1970
	Centers Program	306-1963
	New Technologies Program	306-1962
CCR	*Division of Computer & Computation Research (10)*	306-1910
	Theory of Computing Program	306-1911
	Computer Systems Program	306-1914
	Numeric, Symbolic and Geometric Computation Program	306-1912
	Operating Systems and Systems Software Program	306-1911

*These programs may require additional information on the proposal cover sheet and may require additional documentation regarding eligibility or other special conditions. Program Announcements are available from the NSF Clearinghouse or the offices listed.

		Tel. No. Area Code (703)
CDA	*Office of Cross-Disciplinary Activities (18)*	306-1980
	CISE Research Instrumentation Program	306-1980
	CISE Research Infrastructure Program	306-1980
	CISE Educational Infrastructure Program	306-1980
	CISE Minority Institutions Infrastructure Program	306-1980
	CISE Cross-Directorate Activities	306-1981
	CISE Special Projects Program	306-1981
IRI	*Division of Information, Robotics & Intelligent Systems (10)*	306-1930
	Knowledge Models & Cognitive Systems	306-1926
	Database & Expert Systems	306-1926
	Robotics & Machine Intelligence	306-1928
	Interactive Systems	306-1928
	Information Technology & Organizations	306-1927
MIP	*Division of Microelectronic Information Processing Systems (10)*	306-1936
	Microelectronic Systems Architecture Program	306-1936
	Circuits & Signal Processing Program	306-1936
	Experimental Systems Program	306-1936
	Systems Prototyping and Fabrications Program	306-1936
NCR	*Division of Networking & Communications Research & Infrastructure (10)*	306-1950
	NSFNet Program	306-1949
	Collaborative Activities	306-1949
	Networking & Communications Research Program	306-1949
EHR	**Directorate for Education & Human Resources**	**306-1600**
ESR	*Division of Educational Systemic Reform* (15)	306-1690
	Statewide Systemic Initiatives Program (SSI)	306-1682
	Urban Systemic Initiatives Program (USI)	306-1684
	Rural Systemic Initiatives Program (RSI)	306-1684
EPS	*Experimental Program to Stimulate Competitive Research (EPSCoR)* (15)	306-1683
ESIE	*Division of Elementary, Secondary & Informal Education (14)*	306-1620
	Teacher Enhancement Program (TE)	306-1613
	Presidential Awards for Excellence in Mathematics & Science Teaching (PAEMST)	306-1613
	Instructional Materials Development Program (IMD)	306-1614
	Advanced Technological Education Program (ATE)	306-1614
	Informal Science Education Program (ISE)	306-1616
DUE	*Division of Undergraduate Education (15)*	306-1670
	General Information	306-1666
	Undergraduate Faculty Enhancement Program (UFE)	306-1669
	Collaboratives for Excellence in Teacher Preparation Program (CETP) (20)	306-1669
	Course & Curriculum Development Program (CCD)	306-1681
	Advanced Technological Education Program (ATE)	306-1668
	Instrumentation & Laboratory Improvement Program (ILI)	306-1667
DGE	*Division of Graduate Education (15)*	306-1630
	Graduate Research Fellowships & Minority Graduate Research Fellowships Program (GRF/MGRF) (1)	306-1694
	Integrative Graduate Research & Education Training Program (IGRET) (1)	306-1696
	Postdoctoral Fellowships in Science, Mathematics, Engineering and Technology Education Program (PFSMETE)	306-1697
	NATO Postdoctoral Fellowship Program (1)	306-1697

		Tel. No. Area Code (703)
HRD	*Division of Human Resource Development* (15)*	306-1640
	Comprehensive Partnerships for Mathematics and Science Achievement Program (CPMSA)	306-1633
	Centers of Research Excellence in Science & Technology Program (CREST)	306-1634
	Alliances for Minority Participation Program (AMP)	306-1632
	Program for Persons with Disabilities (PPD)	306-1636
	Program for Women and Girls (PWG)	306-1637
	Professional Opportunities for Women in Research and Education Program (POWRE)	306-1649
	Presidential Awards for Excellence in Science, Mathematics and Engineering Mentoring Program (PAESMEM)	306-1640
REC	*Division of Research, Evaluation & Communication (15)*	306-1650
	Learning and Intelligent Systems Program (LIS)/ Technology	306-1651
	Research on Education, Policy and Practice Program (REPP)	306-1652
	Program Evaluation	306-1653
ENG	**Directorate for Engineering**	**306-1300**
BES	*Division of Bioengineering & Environmental Systems (10)*	306-1318
	Environmental Systems Section	306-1319
	Bioengineering & Research to Aid Persons with Disabilities	306-1318
	Environmental & Ocean Systems	306-1619
	Environmental Remediation	306-1318
CTS	*Division of Chemical & Transport Systems (10)*	306-1370
	Chemical Reaction Processes Program	306-1371
	Interfacial, Transport & Separation Process Program	306-1371
	Fluid, Particulate & Hydraulic Systems Program	306-1371
	Thermal Systems Program	306-1371
DMII	*Division of Design, Manufacture & Industrial Innovation (10)*	306-1328
	Design & Computer-Integrated Engineering Program	306-1328
	Manufacturing Processes & Equipment Program	306-1328
	Operations Research & Production Systems	306-1328
	Small Business Technology Transfer Program	306-1391
	Small Business Innovation Research Programs	306-1391
	Office of Small Business Research Development	306-1330
	Office of Small & Disadvantaged Business Utilization	306-1330
ECS	*Division of Electrical & Communications Systems (10)*	306-1339
	Engineering Systems Program	306-1339
	Quantum Electronics, Waves & Beams Program	306-1339
	Solid-State & Microstructures Program	306-1339
	Communications & Computational Systems Program	306-1339
EEC	*Division of Engineering Education and Centers (15)*	306-1380
	Engineering Research Centers Program	306-1381
	Industry/University Cooperative Research Centers Program	306-1383
	Human Resources Program	306-1384
	Engineering Education Program	306-1382
CMS	*Division of Civil & Mechanical Systems (10)*	306-1360
	Mechanics & Materials Program	306-1361
	Structures, Geomechanics & Building Systems Program	306-1361
	Dynamic Systems & Control Program	306-1361
	Surface Engineering & Tribology Program	306-1361
	Structural Systems & Construction Processes	306-1361
	Large Structural & Building Systems	306-1361
	Geomechanical/Geotechnology and Geoenvironmental Systems	306-1361
	Hazard Mitigation Section	306-1362
	Earthquake Hazard Mitigation Program	306-1362
	Natural & Technological Hazard Mitigation Program	306-1362

		Tel. No. Area Code (703)
GEO	**Directorate for Geosciences**	**306-1500**
ATM	*Division of Atmospheric Sciences (10)*	306-1520
	UCAR & Lower Atmospheric Facilities Oversight Section	306-1521
	Lower Atmosphere Research Section	306-1523
	Physical Meteorology Program	306-1524
	Atmospheric Chemistry Program	306-1522
	Mesoscale Dynamic Meteorology Program	306-1526
	Climate Dynamics Program	306-1527
	Paleoclimate Program	306-1527
	Large Scale Dynamic Meteorology Program	306-1528
	Upper Atmosphere Research Section	306-1518
	Aeronomy Program	306-1529
	Magnetospheric Physics Program	306-1519
	Solar Terrestrial Research Program	306-1530
	Upper Atmospheric Facilities	306-1531
EAR	*Division of Earth Sciences (20)*	306-1550
	Research Projects Section	306-1553
	Geology & Paleontology Program	306-1551
	Tectonics Program	306-1552
	Petrology & Geochemistry Program	306-1554
	Hydrologic Sciences Program	306-1549
	Special Projects Section	306-1553
	Geophysics Program	306-1556
	Education & Human Resources Program	306-1557
	Continental Dynamics Program	306-1559
	Instrumentation & Facilities Program	306-1558
OCE	*Division of Ocean Sciences (15)*	306-1580
	Oceanographic Centers & Facilities Section	306-1576
	Instrumentation & Technical Services Program	306-1578
	Ship Operations Program	306-1579
	Ocean Drilling Program	306-1581
	Ocean Sciences Research Section	306-1582
	Biological Oceanography Program	306-1587
	Chemical Oceanography Program	306-1589
	Physical Oceanography Program	306-1583
	Marine Geology & Geophysics Program	306-1586
	Oceanographic Technology and Interdisciplinary Coordination Program	306-1584
MPS	**Directorate for Mathematical & Physical Sciences**	**306-1800**
AST	*Division of Astronomical Sciences (12)*	306-1820
	Education and Human Resources & Special Programs	306-1819
	Electromagnetic Spectrum Management Unit	306-1823
	National Optical Astronomy Observatories	306-1828
	National Astronomy & Ionosphere Center	306-1822
	National Radio Astronomy Observatory	306-1829
	Extragalactic Astronomy & Cosmology Program	306-1827
	Science & Technology Center	306-1821
	Planetary Astronomy Program	306-1826
	Stellar Astronomy & Astrophysics Program	306-1825
	Galactic Astronomy Program	306-1826
	Advanced Technologies & Instrumentation Program	306-1828
CHE	*Division of Chemistry (12)*	306-1840
	Chemical Instrumentation	306-1849
	Organic Dynamics	306-1851
	Organic Synthesis	306-1851
	Theoretical & Computational Chemistry Program	306-1844
	Experimental Physical Chemistry Program	306-1856
	Inorganic, Bioinorganic & Organometallic Program	306-1842
	Analytical & Surface Chemistry Program	306-1840
	Special Projects Office	306-1850

		Tel. No. Area Code (703)
DMR	*Division of Materials Research (10)*	306-1810
	Materials Research Science & Engineering Centers	306-1815
	National Facilities & Instrumentation	306-1817
	Condensed Matter Physics	306-1818
	Materials Theory	306-1834
	Metals, Ceramics & Electronic Materials	306-1835
	Solid-State Chemistry & Polymers	306-1839
DMS	*Division of Mathematical Sciences (10)*	306-1870
	Applied Mathematics	306-1877
	Classical Analysis	306-1879
	Modern Analysis	306-1887
	Algebra & Number Theory	306-1875
	Topology & Foundations	306-1886
	Infrastructure	306-1874
	Statistics & Probability	306-1884
	Geometric Analysis Program	306-1881
	Computational Mathematics Program	306-1878
PHY	*Division of Physics (10)*	306-1890
	Special Programs	306-1809
	Atomic, Molecular & Optical Physics	306-1807
	Elementary Particle Physics	306-1894
	Theoretical Physics	306-1889
	Nuclear Physics	306-1806
	Gravitational Physics	306-1899
SBE	**Directorate for Social, Behavioral & Economic Sciences**	**306-1700**
INT	*Division of International Programs (10*)	306-1710
	Africa, Near East and South Asia Program	306-1707
	East Asia and Pacific Program	306-1704
	Americas Program	306-1706
	Eastern Europe Program	306-1703
	Western Europe Program	306-1702
	Japan and Korea Program	306-1701
	International Science and Engineering Issues Office	306-1711
	NSF Tokyo Office	(81-33) 224-5505
	NSF Europe Office	(33-1) 4312-2108
SBR	*Division of Social, Behavioral and Economic Research (18)*	306-1760
	Geography and Regional Sciences	306-1754
	Archaeology, Archaeometry & Systematic Collections	306-1759
	Cultural Anthropology	306-1758
	Physical Anthropology	306-1758
	Linguistics	306-1731
	Human Cognition and Perception	306-1732
	Social Psychology	306-1728
	Economics	306-1753
	Decision, Risk & Management Science	306-1757
	Transformations to Quality Organizations (TQO)	306-1757
	Political Science	306-1761
	Law and Social Science	306-1762
	Sociology	306-1756
	Methodology, Measurement, and Statistics	306-1729
	Science and Technology Studies	306-1743
	Research on Science and Technology	306-1742
	Ethics and Values Studies	306-1743
	Cross-Disciplinary Activities	306-1733
SRS	*Division of Science Resources Studies (10)*	306-1780
	Science & Engineering Education & Human Resources	306-1774
	Science & Engineering Activities Program	306-1772
	Science & Engineering Personnel Program	306-1776
	Science & Engineering Indicators Program	306-1777

APPENDIX B CHECKLIST FOR PROPOSAL PREPARATION

Codes:

1 = Use of format required*
2 = Use of format optional
3 = Use instructions provided in Grant Proposal Guide for completion of this section of the proposal

Complete proposals help expedite review and processing. To assure that research and other proposals submitted to the Foundation are complete, an administrative check should be made before mailing.

[ ] Information About Principal Investigators/Project Directors, NSF Form 1225 (one copy only)[1]
[ ] List of suggested reviewers, or reviewers not to include (one copy only) (optional)
[ ] Cover Sheet for Proposal to the National Science Foundation, Certification Page, Page 2, NSF Form 1207[1]
  [ ] All required signatures (Principal Investigator, Co-principal Investigators, and Authorized Organizational Representative)
[ ] Deviation Authorization, (one copy only, if applicable)
[ ] SF LLL, Disclosure of Lobbying Activities (one copy only, if applicable)
[ ] Cover Sheet for Proposal to the National Science Foundation, Page 1, NSF Form 1207[1]
  [ ] Specific NSF program(s) identified, if known
  [ ] Organization's DUNS number included
  [ ] Program Announcement/Solicitation No./Closing Date. If the proposal is not submitted in response to a specific program announcement/solicitation, proposers must enter "NSF 98-2"
  [ ] Appropriate boxes on Cover Sheet checked
[ ] Project Summary[3]
[ ] Table of Contents, NSF Form 1359[1]
[ ] Project Description, including Results from Prior NSF Support[3]
  [ ] Human-resource information (required for renewal proposals from academic institutions only)
[ ] References Cited[3]
[ ] Biographical Sketch(es)[3]
[ ] Summary Proposal Budget, cumulative and annual, NSF Form 1030[1]
  [ ] Budget Justification (not to exceed three pages)
  [ ] Cost-sharing amount, if required
[ ] Current and Pending Support, NSF Form 1239[2]
[ ] Facilities, Equipment and Other Resources, NSF Form 1363[2]
[ ] Special Information and Supplementary Documentation (letters of commitment, eligibility statements, etc.), as required
  [ ] Animal Care and Use Statement, if required**
  [ ] Human Subjects Certification, if required***
  [ ] Special provisions for research in Greenland or Antarctica
[ ] Required number of copies of the proposal, including the original signed copy (See Appendix A)
[ ] Proposal packages addressed exactly as shown on page 2 (no punctuation)

*See Forms Acceptance, for NSF's Forms Acceptance Policy.
**Statement that the proposal has been reviewed and approved by the Institutional Animal Care and Use Committee and that assures the grantee will comply with the Public Health Service Policy on Humane Care and Use of Laboratory Animals by Awardee Institutions.
***Statement that the proposal has been approved and will be subject to continuing review by the Institutional Review Board and that an approved assurance for the institution in conformance with the Common Rule (*Federal Policy for the Protection of Human Subjects*, 45 CFR §690) is appropriately filed with a Federal agency.

APPENDIX C DEFINITIONS OF CATEGORIES OF PERSONNEL

The personnel categories listed on parts A and B of the proposal budget are defined as follows:

A. Senior Personnel

(1 - 5) *(Co)Principal Investigator(s)* — the individual(s) designated by the grantee and approved by NSF who will be responsible for the scientific or technical direction of the project. If more than one, the first one listed will have primary responsibility for the project and the submission and signing of reports.

Faculty Associate (faculty member) — an individual other than the Principal Investigator(s) considered by the performing institution to be a member of its faculty or who holds an appointment as a faculty member at another institution, and who will participate in the project being supported.

B. Other Personnel

1. *A Postdoctoral Associate* — an individual who received a Ph.D., M.D., D.Sc. or equivalent degree less than five years ago, who is not a member of the faculty at the performing institution, and who is not reported under Senior Personnel above.

2. *Other Professional* — a person who may or may not hold a doctoral degree or its equivalent, who is considered a professional and is not reported as a Principal Investigator, faculty associate, postdoctoral associate or student. Examples of persons included in this category are doctoral associates not reported under B1, professional technicians, physicians, veterinarians, system experts, computer programmers and design engineers.

3. *A Graduate Student* (research assistant) — a part-time or full-time student working on the project in a research capacity who holds at least a bachelor's degree and is enrolled in a degree program leading to an advanced degree.

4. *An Undergraduate Student* — a student who is enrolled in a degree program (part-time or full-time) leading to a bachelor's degree.

5. - 6. These categories include persons working on the project in a non-research capacity, such as secretaries, clerk-typists, draftsmen, animal caretakers, electricians and custodial personnel regardless of whether they hold a degree or are involved in degree work.

Any personnel category for which NSF funds are requested should indicate in the parentheses provided on the NSF Form 1030, the number of persons expected to receive some support from those funds and, where called for in the budget format, person-months to the nearest tenth.

APPENDIX D ANNUAL NSF GRANT PROGRESS REPORT

NSF Program: **NSF Award Number:**

PI Name: **Period Covered By This Report:**

PI Organization: **Date:**

PI Address:

☐ **Check if Continued Funding is Requested**

Please include the following information:

1. Brief summary of progress, including results obtained to date, and their relationship to the general goals of the grant;
2. A brief summary of work to be performed during the next year of support if changed from the original proposal; an indication of any current problems or favorable or unusual developments; and any other significant information pertinent to the type of project supported by NSF or as specified by the terms and conditions of the grant;
3. Statement of funds estimated to remain unobligated —if more than 20%— at the end of the period for which NSF currently is providing support;
4. Proposed budget for the ensuing year in the NSF format, **only** if the original award letter did not indicate specific incremental amounts or if adjustments to a planned increment exceeding the greater of 10% or $10,000 are being requested;
5. Information about other current and pending research support of senior personnel, if changed from the previous submission;
6. A statement describing any contribution of the project to the area of education and human-resource development, if changed from any previous submission; and
7. Updated information on animal care and use, Institutional Biohazard Committee and Human Subject Certification, if changed substantially from those originally proposed and approved.

I certify that to the best of my knowledge (1) the statements herein (excluding scientific hypotheses and scientific opinions) are true and complete, and (2) the text and graphics in this report as well as any accompanying publications or other documents, unless otherwise indicated, are the original work of the signatories or individuals working under their supervision. I understand that the willful provision of false information or concealing a material fact in this report or any other communication submitted to NSF is a criminal offense (U.S. Code, Title 18, Section 1001.)

PI Signature:_____

NSF Grant Conditions (Article 17, GC-1, and Article 8, FDP-II) require submission of a Final Project Report (NSF Form 98A) to the NSF Program Officer no later than 90 days after the expiration of the award. Final Project Reports for expired awards must be received before new awards can be made (NSF Grants Policy Manual Section 340).

Below, or on a separate page attached to this form, provide a summary of the completed projects and technical information. Be sure to include your name and award number on each separate page. See below for more instructions.

PART II - SUMMARY OF COMPLETED PROJECT (for public use)

The summary (about 200 words) must be self-contained and intelligible to a scientifically or technically literate reader. Without restating the project title, it should begin with a topic sentence stating the project's major thesis. The summary should include, if pertinent to the project being described, the following items:

- The primary objectives and scope of the project
- The techniques or approaches used only to the degree necessary for comprehension
- The findings and implications stated as concisely and informatively as possible

PART III - TECHNICAL INFORMATION (for program management use)

List references to publications resulting from this award and briefly describe primary data, samples, physical collections, inventions, software, etc., created or gathered in the course of the research and, if appropriate, how they are being made available to the research community. Provide the NSF Invention Disclosure number for any invention.

I certify to the best of my knowledge (1) the statements herein (excluding scientific hypotheses and scientific opinion) are true and complete, and (2) the text and graphics in this report as well as any accompanying publications or other documents, unless otherwise indicated, are the original work of the signatories or of individuals working under their supervision. I understand that willfully making a false statement or concealing a material fact in this report or any other communication submitted to NSF is a criminal offense (U.S. Code, Title 18, Section 1001).

Principal Investigator/Project Director Signature	Date

IMPORTANT:
MAILING INSTRUCTIONS
Return this *entire* packet plus all attachments in the envelope attached to the back of this form. Please copy the information from Part 1, Block I to the *Attention block* on the envelope.

PART IV - FINAL PROJECT REPORT -- SUMMARY DATA ON PROJECT PERSONNEL
(To be submitted to cognizant Program Officer upon completion of project)

The data requested below are important for the development of a statistical profile on the personnel supported by Federal grants. The information on this part is solicited in response to public Law 99-383 and 42 USC 1885C. All information provided will be treated as confidential and will be safeguarded in accordance with the provisions of the Privacy Act of 1974. You should submit a single copy of this part with each final project report. However, submission of the requested information is not mandatory and is not a precondition of future award(s). Check the "Decline to Provide Information" box below if you do not wish to provide the information.

Please enter the numbers of individuals supported under this grant.
Do not enter information for individuals working less than 40 hours in any calendar year.

	Senior Staff		Post Doctorals		Graduate Students		Under-Graduates		Other Participants[1]	
	Male	Fem.	Male	Fem.	Male	Fem.	Male	Fem.	Male	Fem.
A. Total, U.S. Citizens										
B. Total, Permanent Residents										
U.S. Citizens or Permanent Residents:[2]										
American Indian or Alaskan Native....										
Asian.....										
Black, Not of Hispanic Origin.....										
Hispanic.....										
Pacific Islander.....										
White, Not of Hispanic Origin.....										
C. Total, Other Non-U.S. Citizens										
Specify Country 1.										
2.										
3.										
D. Total, All participants (A + B + C)										
Disabled[3]										

☐ Decline to Provide Information: Check box if you do not wish to provide this information (you are still required to return this page along with parts I-III).

[1]Category includes, for example, college and precollege teachers, conference and workshop participants.

[2]Use the category that best describes the ethnic/racial status to all U.S. Citizens and Non-citizens with Permanent Residency. *(If more than one category applies, use the one category that most closely reflects the person's recognition in the community.)*

[3]A person having a physical or mental impairment that substantially limits one or more major life activities; who has a record of such impairment; or who is regarded as having such impairment. (*Disabled individuals also should be counted under the appropriate ethnic/racial group unless they are classified as "Other Non-U.S. Citizens.")*

AMERICAN INDIAN OR ALASKAN NATIVE: A person having origins in any of the original peoples of North America and who maintains cultural identification through tribal affiliation or community recognition.

ASIAN: A person having origins in any of the original peoples of East Asia, Southeast Asia or the Indian subcontinent. This area includes, for example, China, India, Indonesia, Japan, Korea and Vietnam.

BLACK, NOT OF HISPANIC ORIGIN: A person having origins in any of the black racial groups of Africa.

HISPANIC: A person of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish culture or origin, regardless of race.

PACIFIC ISLANDER: A person having origins in any of the original peoples of Hawaii, the U.S. Pacific territories of Guam, American Samoa, and the Northern Marinas; the U.S. Trust Territory of Palau; the islands of Micronesia and Melanesia; or the Philippines.

WHITE, NOT OF HISPANIC ORIGIN: A person having origins in any of the original peoples of Europe, North Africa, or the Middle East.

NSF PUBLICATIONS OF GENERAL INTEREST

About the NSF (brochure)
NSF Bulletin
Catalogue of National Science Foundation Publications
Guide to Programs
Frontiers (monthly newsletter, except August)

Single copies of these and other publications (except the NSF *Grant Policy Manual*) are available from the NSF Clearinghouse, PO Box 218, Jessup, MD 20794-0218, Telephone: 301-947-2722, e-mail pubs@nsf.gov.

PRIVACY ACT AND PUBLIC BURDEN

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 application review process; to applicant institutions/grantees to provide or obtain data regarding the application review process, award decisions, or the administration of awards; to government contractors, experts, volunteers and researchers 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 NSF reviewers or advisory committee members. See Systems of Records, NSF-50, "Principal Investigator/Proposal File and Associated Records," 60 *Federal Register* 4449 (January 23, 1995), and NSF-51, "Reviewer/Proposal File and Associated Records," 59 *Federal Register* 8031 (February 17, 1994). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of your receiving an award.

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 or any other aspect of this collection of information, including suggestions for reducing this burden, to:

Gail McHenry
Reports Clearance Officer
Division of Administrative Services
National Science Foundation
Arlington, VA 22230