NATIONAL SCIENCE FOUNDATION
Office of Budget, Finance & Award Management
4201 Wilson Boulevard
Arlington, VA 22230

Dear Colleagues:

We have published a revision to the NSF *Grant Proposal Guide* (GPG) (NSF 04-23) that is effective for proposals submitted on or after September 1, 2004. This revision:

- provides potential proposers with a description of the various categories of funding opportunities utilized by NSF to generate proposals, as well as the appropriate scenarios in which each are used;

- incorporates new descriptive information on the types of submissions that may be required under NSF program solicitations, as well as the rationale for their use; and

- implements enhanced capabilities in FastLane for submission of proposal file updates.

Other sections have been revised, as appropriate, to update the GPG to ensure consistency with current NSF policies, practices or procedures. A summary of significant changes is provided to assist the user in navigating through these changes.

The GPG is available electronically on the NSF Website. Organizations or individuals unable to access the GPG electronically may order paper copies (maximum of 5 per request) by any of the following means:

- sending an e-mail to: pubs@nsf.gov (Web Ordering Form Location: http://www.nsf.gov/pubs/start.htm);

- phoning: (703) 292-7827 or (703) 292-PUBS; or

- sending a request by mail to:

  NSF Publications
  4201 Wilson Boulevard, Suite P-60
  Arlington, VA 22230

Please address any questions or comments regarding the GPG to the Policy Office, Division of Institution & Award Support, at (703) 292-8243 or by e-mail to policy@nsf.gov.

Thomas N. Cooley
Chief Financial Officer &
Director, Office of Budget, Finance & Award Management

About the National Science Foundation

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

From those first days, NSF has had a unique place in the Federal Government: it is responsible for the overall health of science and engineering across all disciplines. In contrast, other Federal agencies support research focused on specific missions such as health or defense. The Foundation also is committed to ensuring the nation's supply of scientists, engineers, and science and engineering educators.

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

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

NSF is structured much like a university, with grants-funding divisions for the various disciplines and fields of science and engineering and for science, math, engineering and technology education. NSF also uses a variety of management mechanisms to coordinate research in areas that cross traditional disciplinary boundaries. The Foundation is assisted by advisors from the scientific and engineering communities who serve on formal committees or as *ad hoc* reviewers of proposals. This advisory system, which focuses on both program directions and specific proposals, involves approximately 50,000 scientists and engineers each year. NSF staff members who are experts in a certain field or area make award recommendations; proposers get unattributed verbatim copies of peer reviews.

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, although some programs may have special requirements that limit eligibility.

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

The National Science Foundation has Telephonic Device for the Deaf (TDD) and Federal Information Relay Service (FIRS) capabilities that enable individuals with hearing impairments to communicate with the Foundation about NSF programs, employment or general information. TDD may be accessed at (703) 292-5090 and (800) 281-8749, FIRS at (800) 877-8339.

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

Foreword

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 E-Bulletin*, an electronic publication available at http://www.nsf.gov/home/ebulletin/. Program deadline and target date information also appears in individual program announcements and solicitations and on relevant NSF Divisional Websites. A listing of all upcoming deadlines, sorted by date and by program area, is available on the NSF Website at http://www.nsf.gov/home/deadline/deadline.htm.

NSF generally utilizes grants in support of research and education in science, mathematics, engineering and technology. In cases where assistance projects require 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.

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), available electronically on the NSF Website. The Manual is a compendium of basic NSF policies and procedures for use by the grantee community and NSF staff.

Any questions or comments regarding the GPG should be addressed to the Policy Office, Division of Institution & Award Support, at (703) 292-8243 or by e-mail to policy@nsf.gov.

Catalog of Federal Domestic Assistance

NSF programs fall under the following categories in the latest Catalog of Federal Domestic Assistance (CFDA) 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
47.078 -- Office of Polar Programs

A listing of NSF Divisions, by CFDA number, is available on the NSF Website.

Summary of Significant Changes

•   **Overall Document** — Minor editorial changes have been made throughout the document to either clarify or enhance the intended meaning of a sentence or section.

•   **Chapter I** — **Section B, NSF Programs and Funding Opportunities,** has been made into a new Section B. and supplemented with information on Grants.gov, an additional electronic capability to search for Federal government-wide grant opportunities.

•   **Chapter I** — **Section C, Categories of Funding Opportunities,** has been added to provide potential proposers with a description of the various categories of funding opportunities utilized by NSF to generate proposals, as well as the appropriate scenarios in which each are used.

•   **Chapter I** — **Section D, Types of Submissions,** has been developed to instruct potential proposers on the types of submissions that may be required under NSF program solicitations, as well as the rationale for their use.

•   **Chapter I** — **Section D.3, Full Proposal,** reminds proposers that NSF expects adherence to rules of proper attribution. Any authors other than the PI or any co-PI should be named and acknowledged in the proposal.

•   **Chapter I** — **Section E, Categories of Proposers, 1., Universities and colleges,** has been supplemented with language to indicate that such organizations are frequently referred to as academic institutions.

•   **Chapter I** — **Section F, When to Submit Proposals,** has been revised to move definitional information regarding the types of due dates from footnotes into the main text and now specifies that, unless otherwise specified in a program solicitation that has an identified deadline date, proposals must be received by 5 p.m. submitter's local time on the established deadline date. The end date of a submission window follows the same policies as a deadline date. Waivers of a deadline will be given only in extenuating circumstances and in accordance with the instructions specified. Letters of intent and preliminary proposals also follow the 5 p.m. submitter's local time standard.

•   **Chapter I** — **Section H, Proposal Processing,** has been reorganized into a new section to describe the length of time necessary for processing of the proposal. Previously, this information was contained in the "When to Submit Proposals" section of the GPG.

•   **Chapter II** — **Section B, Format of the Proposal,** has been updated with revised instructions for proposal margin and spacing requirements. Proposers are advised that non-compliance with margin and spacing requirements, including the use of small type size, may result in the proposal being returned without review.

•   **Chapter II** — **Section C.2.a, Cover Sheet,** has been reworded to emphasize the importance of selecting the applicable category of funding opportunity (i.e., program description, announcement or solicitation). If the proposal is not being submitted to a specific funding opportunity, proposers should select "Grant Proposal Guide." This section has also been supplemented with more detailed instructions on obtaining a Data Universal Numbering System (DUNS) number.

•   **Chapter II** — **Section C.2.g.(i) Salaries and Wages,** section (a) Policies has been supplemented with further guidance on requesting administrative or clerical staff salaries as direct costs. These salaries can only be budgeted as direct costs if this type of cost is consistently treated as a direct cost in like circumstances for all other projects and cost objectives.

•   **Chapter II** — **Section C.2.g.(iii), Equipment,** has been updated to show that further information on equipment can be found in the *Grant Policy Manual* Section 612.

•   **Chapter II** — **Section C.2.g.(vi), Other Direct Costs,** has been revised to remove tuition remission as one of the examples of other direct costs.

•   **Chapter II** — **Section D.6, Proposals involving Human Subjects,** has been clarified to show that all projects involving human subjects must either have Institutional Review Board (IRB) approval before issuance of an

NSF award or must affirm that the research is exempt from IRB review. The exemption affirmation must come either from the IRB or an appropriate knowledgeable authority of the organization (but not from the Principal Investigator).

- **Chapter III — Section B, Administrative Corrections to Proposals,** has been deleted in its entirety. The capability can now be found in the enhanced Proposal File Update Module in FastLane. All remaining sections have been renumbered accordingly.

- **Chapter III — Section B, Proposal File Updates,** has been updated to reflect the revised Proposal File Update Module in FastLane. The revised policies regarding use of the new module are specified in the text.

- **Chapter IV — Section C, Declinations,** has been supplemented to show that, once a proposal has received the concurrence of the cognizant Division Director and all the review information has been released for the proposal, PIs and co-PIs can access their review information electronically via FastLane.

- **Chapter V — Section C, No-Cost Extensions,** has been revised to specify that requests for Grantee-Authorized and NSF-approved No-Cost extension requests must be submitted electronically to NSF via the Fastlane system.

- **Chapter VI — Section B, Grantee Responsibilities and Federal Requirements,** is an entirely new section that has been added to the GPG to remind grantees that they have full responsibility for the conduct of the project or activity supported under an NSF award. By accepting the award, the grantee agrees to comply with applicable Federal requirements and to the prudent management of all expenditures and actions affecting the award. All remaining sections have been renumbered accordingly.

- **Chapter VI — Section H.1, Annual and Final Project Reports,** has been supplemented to reflect that submission of the annual and final report via FastLane constitutes certification by the PI that the contents of the report are accurate and complete.

- **Chapter VI — Section H.2, Quarterly and Final Expenditure Reports,** has been updated with a web link to the Institutional Ledger Section of the Division of Financial Management, for further information on electronic submission of quarterly and final expenditure reports.

Table of Contents

# I.	Introduction

## A.	OVERVIEW

The *Grant Proposal Guide* (GPG) provides guidance for the preparation and submission of proposals to NSF. Contact with NSF program personnel prior to proposal preparation is encouraged. Some NSF programs have program solicitations that modify the general provisions of this Guide, and, in such cases, the guidelines provided in the solicitation must be followed. (See Section C.4 below for further information on NSF program solicitations.)

The Foundation considers proposals submitted by organizations on behalf of individuals or groups for support in most fields of research. Interdisciplinary proposals also are 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. 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 also is eligible.

Research proposals to the Biological Sciences Directorate (not proposals for conferences or workshops) 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 officers at relevant Federal agencies have previously agreed to joint review and possible joint funding of the proposal; or (2) proposals for PIs who are 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" must be checked on the proposal Cover Sheet.

## B.	NSF PROGRAMS AND FUNDING OPPORTUNITIES

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

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

## C.	CATEGORIES OF FUNDING OPPORTUNITIES

NSF utilizes a variety of mechanisms to generate proposals. A brief description of each category of funding opportunity follows:

### 1.	Dear Colleague Letter

Dear Colleague letters are intended to provide general information to the community, clarify or amend an existing policy or document, or inform the NSF proposer community about upcoming opportunities or special

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

competitions for supplements to existing awards. In addition, they are often used to draw attention to an impending change in NSF policies or programs.

2. Program Description

The term "program description" includes broad, general descriptions of programs and activities in NSF Directorates and Divisions, such as those included in NSF's Guide to Programs. Program descriptions are often posted on Directorate/Division websites to encourage the submission of proposals in specific program areas of interest to NSF.

Program descriptions, like program announcements, utilize the generic eligibility and proposal preparation instructions specified in the *Grant Proposal Guide,* as well as the National Science Board (NSB) approved merit review criteria. These funding opportunities do not require specific cost sharing beyond the required statutory (1%) amount, or specify additional award conditions or reporting requirements. (Additional information on NSF cost sharing requirements can be found in GPG Chapter II, Section C.2.g.xii and in the Grant Policy Manual Section 330.) Proposals submitted in response to program descriptions are considered "unsolicited."

3. Program Announcement

The term "program announcement" refers to formal NSF publications that announce NSF programs. Program announcements and program descriptions (see C.2. above) are the primary mechanisms used by NSF to communicate opportunities for research and education support, as well as to generate proposals. Program announcements utilize the generic eligibility and proposal preparation guidelines specified in the GPG and incorporate the National Science Board (NSB) approved merit review criteria. These funding opportunities do not require specific cost sharing beyond the required statutory (1%) amount, or specify additional award conditions or reporting requirements. (Additional information on NSF cost sharing requirements can be found in GPG Chapter II, Section C.2.g.xii and in the Grant Policy Manual Section 330.) Proposals submitted in response to program announcements also are considered "unsolicited."

4. Program Solicitation

The term "program solicitation" refers to formal NSF publications that encourage the submission of proposals in specific program areas of interest to NSF. They generally are more focused than program announcements, and normally apply for a limited period of time. Competition among proposals is more precisely defined than with program announcements. Program solicitations are issued when the funding opportunity has one or more of the following features:

- Provides supplemental proposal preparation guidance or deviates from the guidelines established in the *Grant Proposal Guide*;

- Contains additional specially crafted review criteria relevant to the program;

- Contains specific proposal deadline dates for the submission of full proposals;

- Requires submission of a letter of intent or preliminary proposal;

- Deviates from (or restricts) the standard categories of proposers specified in Section E. below;

- Limits the number of proposals that may be submitted by any organization and/or researcher/educator;[2]

- Specifies additional award conditions or reporting requirements;

- Anticipates use of a cooperative agreement;

- Includes specific cost sharing requirements; or

- Permits inclusion of the payment of fees to awardees, when appropriate.

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

When a program solicitation is used, the proposals received compete directly with each other. Proposals submitted in response to program solicitations are considered "solicited." This means that the resulting awards are not subject to the statutory cost sharing requirement. Cost sharing is not required unless explicitly included in the solicitation.

D.   TYPES OF SUBMISSIONS

1.   Letter of Intent

Some NSF program solicitations require or request submission of a Letter of Intent in advance of submission of a full proposal. The predominant reason for its use is to help NSF program staff to gauge the size and range of the competition, enabling earlier selection and better management of reviewers and panelists. In addition, the information contained in a Letter of Intent is used to help avoid potential conflicts of interest in the review process.

A Letter of Intent normally contains the PI's and co-PI's names, a proposed title, a list of possible participating organizations (if applicable), and a synopsis that describes the work in sufficient detail to permit an appropriate selection of reviewers. A Letter of Intent is not externally evaluated or used to decide on funding. The requirement to submit a Letter of Intent will be identified in the program solicitation, and such letters are submitted electronically via the NSF FastLane System.[3]

2.   Preliminary Proposal

Some NSF program solicitations require or request submission of a preliminary proposal in advance of submission of a full proposal. The two predominant reasons for requiring submission of a preliminary proposal are to:

- reduce the proposers' unnecessary effort in proposal preparation when the chance of success is very small. This is particularly true of exploratory initiatives where the community senses that a major new direction is being identified, or competitions that will result in a small number of actual awards; and

- increase the overall quality of the full submission.

The NSF program solicitation will specify content and submission requirements when preliminary proposals are to be utilized. Preliminary proposals are prepared by the PI using the Proposal Preparation Module in FastLane. On the Cover Sheet, the PI clicks on the "preliminary proposal" check box. The PI completes only the sections appropriate to the preliminary proposal. The PI then forwards the proposal to his/her Sponsored Projects Office, which then submits the preliminary proposal to NSF.

One of the following two types of decisions may be received from NSF upon submission of a preliminary proposal. The program solicitation will specify the type of decision to be rendered for a particular program.

a.   Invite/Not Invite

This type of mechanism is used when the NSF decision made on the preliminary proposal is final, affecting the PI's eligibility to submit a full proposal. Only submitters of favorably reviewed preliminary proposals are invited and eligible to submit full proposals. Invite/Not Invite decisions are generally used where large, complex, or limited-award competitions are contemplated, such as those used for "centers." The PI and the organization's Sponsored Projects Office will be electronically notified of NSF's decision to either invite submission of a full proposal or decline NSF support.

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[3]The NSF FastLane system uses Internet/Web technology to facilitate the way NSF does business with the research, education, and related communities. The NSF FastLane system should be used for proposal preparation, update, submission and status checking, project reporting, and post-award administrative activities. All FastLane functions are accessed by using a Web browser on the Internet. Detailed information about the FastLane system is available from the FastLane Website at https://www.fastlane.nsf.gov/fastlane.jsp.

b.   Encourage/Discourage

This type of mechanism is used when the NSF decision made on the preliminary proposal is advisory only. This means that submitters of both favorably and unfavorably reviewed preliminary proposals are eligible to submit full proposals. Encourage/Discourage decisions are typically used when the preliminary proposal is very short, focused on the activity to be proposed, and where use of the preliminary proposal is intended to improve the overall quality of the full proposal. The PI and the organization's Sponsored Projects Office will be notified of NSF's decision to either encourage or discourage submission of a full proposal.

3.   Full Proposal

The full proposal should present the (1) objectives and scientific, engineering, or educational significance of the proposed work; (2) suitability of the methods to be employed; (3) qualifications of the investigator and the grantee organization; (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. The requisite proposal preparation instructions are contained in GPG Chapter II. Sufficient information should be provided to enable reviewers to evaluate the proposal in accordance with the two merit review criteria established by the National Science Board. (See GPG Chapter III for additional information on NSF processing and review of proposals.)

NSF expects strict adherence to the rules of proper scholarship and attribution. The responsibility for proper attribution and citation rests with authors of a proposal; all parts of the proposal should be prepared with equal care for this concern. Authors other than the PI (or any co-PI) should be named and acknowledged. Serious failure to adhere to such standards can result in findings of research misconduct. NSF policies and rules on research misconduct are discussed in *Grant Policy Manual* (GPM) Section 930 as well as in 45 CFR Part 689.

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 also are encouraged to use metric units in reports, publications and correspondence relating to proposals and awards.

Proprietary or Privileged Information

Patentable ideas, trade secrets, privileged or confidential commercial or financial information, disclosure of which may harm the proposer, should be included in proposals only when such information is necessary to convey an understanding of the proposed project. Such information must be clearly marked in the proposal and 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."

Such information also may be included as a separate statement. If this method is used, the statement must be submitted electronically as a single-copy document in the Proposal Preparation Module in the FastLane system. (See also Chapter II, Section C.1 for further information regarding submission of single-copy documents.)[4]

The box for "Proprietary or Privileged Information" must be checked on the proposal Cover Sheet when the proposal contains such information. While NSF will make every effort to prevent unauthorized access to such material, the Foundation is not responsible or in any way liable for the release of such material. (See also Chapter VI, Section K, "Release of Grantee Proposal Information.")

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[4]Detailed instructions for submission of proprietary or privileged information is available on the FastLane Website at https://www.fastlane.nsf.gov/a1/newstan.htm#proprietary.

E.   WHO MAY SUBMIT PROPOSALS

Scientists, engineers and educators usually initiate proposals that 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 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 predominantly undergraduate academic institutions.

Categories of Proposers

Except where a program solicitation establishes more restrictive eligibility criteria, individuals and organizations in the following categories may submit proposals:

1.   **Universities and colleges** — US universities and two- and four-year colleges (including community colleges) acting on behalf of their faculty members. Such organizations also are referred to as academic institutions.

2.   **Non-profit, non-academic organizations** — Independent museums, observatories, research laboratories, professional societies and similar organizations in the US that are directly associated with educational or research activities.

3.   **For-profit organizations** — US commercial organizations, especially small businesses with strong capabilities in scientific or engineering research or education. 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 commercial 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 US and US 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 applicable proposal-generating document;

- 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 that, in the opinion of the NSF Division of Grants & Agreements, 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 US and foreign organizations, provided support is requested only for the US portion of the collaborative effort.

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). A scientist, engineer or educator, however, who has a joint appointment with a university and a Federal agency (such as a Veterans Administration Hospital, or with a university and a 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.

F.   WHEN TO SUBMIT PROPOSALS

Proposers should allow adequate time for NSF review and processing of proposals (see Section H below). Many NSF programs accept proposals at any time. Other programs, however, establish due dates for submission of proposals. The following types of due dates are utilized by NSF:

- **Target dates:** dates after which proposals will still be accepted, although they may miss a particular panel or committee meeting.

- **Deadline dates:** dates after which proposals will not be accepted for review by NSF. The deadline date will be waived only in extenuating circumstances. Such a deviation only may be authorized in accordance with GPG, Chapter II. Section A.

- **Submission windows:** designated periods of time during which proposals will be accepted for review by NSF. For purposes of NSF, the end date of a submission window converts to, and follows the same policies as, a deadline date.

These target dates, deadlines, and submission windows are published in specific program descriptions, program announcements and solicitations that can be obtained from the NSF Clearinghouse at pubs@nsf.gov or electronically through the NSF Website.[5] Unless otherwise stated in a program announcement or solicitation, proposals must be received by the specified date. If the deadline 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 business day. Unless otherwise specified in a program solicitation that has an identified deadline date, proposals must be received by 5 p.m. submitter's local time on the established deadline date.[6]

G.   HOW TO SUBMIT PROPOSALS

1.   Electronic Requirements

Proposals to NSF must be submitted electronically via the FastLane system. For proposers who cannot submit electronically, a deviation must be approved in advance of submission of the paper proposal in accordance with GPG Chapter II, Section A, Conformance with Instructions for Proposal Preparation.

Special instructions for proposals that contain high-resolution graphics or other graphics where exact color representations are required for proper interpretation by the reviewer

For cost and technical reasons, the Foundation cannot, at this time, reproduce proposals containing color. PIs, therefore, generally should not rely on colorized objects to make their arguments. PIs who must include in their project descriptions high-resolution graphics, or other graphics where exact color representations are required for proper interpretation by the reviewer, must submit the required number of copies of the entire paper proposal, including the proposal Cover Sheet, for use in the review process. This submission is in addition to, not in lieu of, the electronic submission of the proposal via FastLane. Given that many NSF programs have converted to use of a primarily electronic review process, PIs are strongly encouraged to contact the cognizant Program Officer prior to submission of the paper copies of a proposal. The cognizant NSF Program Officer is ultimately responsible for reviewing the color materials submitted and making a determination of whether or not to send the paper copies out for merit review.

Upon submission of the proposal, the proposing organization will be notified of the required number of paper copies of the proposal that must be submitted to NSF. The exact number of copies required will appear in an

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[5]A listing of upcoming target dates and deadlines, sorted by date and by program area is available electronically on the NSF Website at https://www.nsf.gov/home/deadline/deadline.htm.

[6]Program solicitations that require letters of intent or preliminary proposals, unless otherwise specified, also follow the 5 p.m. submitter's local time standard.

electronic message at the time of FastLane submission and will depend on the NSF Division selected.[7] Such proposals must be postmarked (or provide a legible proof of mailing date assigned by the carrier) within five working days following the electronic submission of the proposal.

2.   Submission Instructions

The same work cannot be funded twice, so a proposal should be submitted only once to NSF. If the proposer envisions review by multiple programs, more than one program may be designated on the proposal Cover Sheet.   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 Chapter IV, Section B, Return Without Review, for further information.)

In submission of a proposal for funding, the Authorized Organizational Representative (AOR)[8] is required to provide certain proposal certifications. (See Chapter II, Section C.1.e for listing.) This process can occur concurrently with submission of the proposal for those organizations where the individual authorized to submit a proposal to NSF also is a designated AOR, or as a separate function for those organizations that choose to keep the certification process separate from the submission function. For those organizations that designate separate authorities in FastLane for these functions, the AOR must provide the required certifications within 5 working days following the electronic submission of the proposal.[9]

A proposal may not be processed until NSF has received the complete proposal (including the electronic certifications from the AOR.)

3.   Proposal Receipt

Once the proposal is submitted, PIs can access the number assigned to the proposal via the "Submitted Proposals" list in the FastLane Proposal Preparation Module. If a proposal number is not reflected in the FastLane System, contact the FastLane Help Desk at (800) 673-6188, or (703) 292-8142 or by e-mail to fastlane@nsf.gov.

When the proposal is assigned to an NSF program, the cognizant program information is available through the FastLane "Proposal Status Inquiry" function for PIs and through the "Recent Proposals" report for sponsored projects offices. Communications about the proposal should be addressed to the cognizant Program Officer with reference to the proposal number. Proposers are strongly encouraged to use FastLane to verify the status of their submission to NSF.

H.   PROPOSAL PROCESSING

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 be accepted for review only 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 costs incurred by the proposing organization.

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[7]Detailed instructions for submission of proposals that include high-resolution graphics or exact color representations that are required for proper interpretation by reviewers are available on the FastLane Website at https://www.fastlane.nsf.gov/a1/newstan.htm#color.

[8]As defined in the NSF *Grant Policy Manual*, Chapter II, Section 210a. the Authorized Organizational Representative is the administrative official who, on behalf of the proposing organization, is empowered to make certifications and assurances and can commit the organization to the conduct of a project that NSF is being asked to support as well as adhere to various NSF policies and grant requirements.

[9]Further instructions for this process are available on the FastLane Website.

II.   Proposal Preparation Instructions

Each proposing organization that has not received an NSF grant within the previous two years should be prepared to submit basic organization and management information and certifications, when requested, to the Division of Grants and Agreements. The required information is described in the *NSF Prospective New Awardee Guide*,[10] available electronically on the NSF Website. The information contained in this Guide will assist the organization in preparing documents that the National Science Foundation requires to conduct administrative and financial reviews of the organization. This Guide also serves as a means of highlighting the accountability requirements associated with Federal awards.

To facilitate proposal preparation, Frequently Asked Questions (FAQs) regarding proposal preparation and submission are available electronically on the NSF Website.[11]

A.   CONFORMANCE WITH INSTRUCTIONS FOR PROPOSAL PREPARATION

It is important that all proposals conform to the instructions provided in the GPG. Conformance is required and will be strictly enforced unless a deviation has been approved. NSF may return without review proposals that are not consistent with these instructions. See Chapter IV.B, for additional information. NSF must authorize any deviations from these instructions in advance of proposal submission. Deviations may be authorized in one of two ways:

1.   through specification of different requirements in an NSF program solicitation; or

2.   by the written approval of the cognizant NSF Assistant Director/Office Head or designee. These deviations may be in the form of 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 solicitation number that authorized the deviation in the appropriate block on the proposal Cover Sheet; or (b) for individual deviations, by identifying the name, date and title of the NSF official authorizing the deviation.[12] Further instructions are available on the FastLane Website.

B.   FORMAT OF THE PROPOSAL

Prior to electronic submission, it is strongly recommended that proposers conduct an administrative review to ensure that proposals comply with the proposal preparation guidelines established in the GPG. Appendix A contains a proposal preparation checklist that may be used to assist in this review. This checklist is not intended to be an all-inclusive repetition of the required proposal contents and associated proposal preparation guidelines. It is, however, meant to highlight certain critical items so they will not be overlooked when the proposal is prepared.

1.   Proposal Pagination Instructions

Proposers are advised that FastLane does not automatically paginate a proposal. Each section of the proposal that is uploaded as a file must be individually paginated before upload to FastLane.

2.   Proposal Margin and Spacing Requirements

The proposal must be clear, readily legible, and conform to the following four requirements:

a.   The height of the letters must not be smaller than 10 point, unless otherwise specified in the program solicitation to which the proposal is being submitted;

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[10] The *NSF Prospective New Awardee Guide* is available electronically on the NSF Website at https://www.nsf.gov/pubsys/ods/getpub.cfm?nsf03054.
[11]FAQs regarding FastLane proposal preparation and submission also are available electronically on the FastLane Website.
[12]Requests for approval of a deviation from NSF's electronic submission requirement must be forwarded to the cognizant NSF program for review and approval prior to submission of the paper proposal.

b.   Type density, including characters and spaces, must be no more than 15 characters per 2.5 cm. For proportional spacing, the average for any representative section of text must not exceed 15 characters per 2.5 cm;

c.   No more than 6 lines of type within a vertical space of 2.5 cm.; and

d.   Margins, in all directions, must be at least 2.5 cm.

While line spacing (single-spaced, double-spaced, etc.) is at the discretion of the proposer, established page limits must be followed. (Individual program solicitations, however, may eliminate this proposer option by requiring other type size, margin or line spacing requirements.)

The guidelines specified above establish the **minimum** type size requirements; however, PIs are advised that readability is of paramount importance and should take precedence in selection of an appropriate font for use in the proposal. **Small type size makes it difficult for reviewers to read the proposal; consequently, the use of small type not in compliance with the above guidelines may be grounds for NSF to return the proposal without review.** Adherence to type size and line spacing requirements also is necessary to ensure that no proposer will have an unfair advantage, by using smaller type or line spacing to provide more text in the proposal.

C.   PROPOSAL CONTENTS

1.   Single-Copy Documents

Certain categories of information that are submitted in conjunction with a proposal are for "NSF Use Only." As such, the information is not provided to reviewers for use in the review of the proposal. With the exception of proposal certifications (which are submitted via the Authorized Organizational Representative function[13]), these documents should be submitted electronically via the Proposal Preparation Module in the FastLane system. A summary of each of these categories follows:

a.   Information About Principal Investigators/Project Directors and co-Principal Investigators/co-Project Directors

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

b.   Deviation Authorization (if applicable)

Instructions for obtaining a deviation from NSF proposal preparation instructions are provided in Chapter II, Section A, Conformance with Instructions for Proposal Preparation.

c.   List of Suggested Reviewers or Reviewers Not to Include (optional)

Proposers may include a list of suggested reviewers who they believe are especially well qualified to review the proposal. Proposers also may designate persons they would prefer not review the proposal, indicating why. These suggestions are optional. GPG Appendix B, *Potentially Disqualifying Conflicts of Interest*, contains information on conflicts of interest that may be useful in preparation of this list.

The cognizant Program Officer handling the proposal considers the suggestions and may contact the proposer for further information. However, the decision whether or not to use the suggestions remains with the Program Officer.

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[13]Further instructions for this process are available electronically on the FastLane Website.

d.   Proprietary or Privileged Information (if applicable)

Instructions for submission of proprietary or privileged information are provided in Chapter I, Section D.3.

e.   Proposal Certifications

With the exception of the *Disclosure of Lobbying Activities (SF LLL)* identified below, the procedures for submission of the proposal certifications differ from those used with other single-copy documents. The AOR must use the "Authorized Organizational Representative function" in the FastLane system to electronically sign and submit the proposal certifications. It is the proposing organization's responsibility to assure that only properly authorized individuals sign in this capacity.[14]

The required proposal certifications are as follows:

- **Certification for Authorized Organizational Representative or Individual Applicant:** The AOR is required to complete certifications regarding the accuracy and completeness of statements contained in the proposal, as well as to certify that the organization (or individual) agrees to accept the obligation to comply with award terms and conditions.

- **Certification Regarding Conflict of Interest:** The AOR is required to complete certifications stating that the institution[15] has implemented and is enforcing a written policy on conflicts of interest, consistent with the provisions of GPM 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 interest, 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 conflict of interest policy. Conflicts that cannot be satisfactorily managed, reduced or eliminated must be disclosed to NSF via use of the Notifications and Requests Module in the NSF FastLane System.

- **Drug-Free Workplace:** The AOR is required to complete a certification regarding the Drug-Free Workplace Act. See Appendix C for the full text of the Drug-Free Workplace Certification.

- **Debarment and Suspension:** The AOR is required to complete a certification regarding Debarment and Suspension. See Appendix D for the full text of the Debarment and Suspension Certification.

- **Certification Regarding Lobbying:** When the proposal exceeds $100,000, the AOR is required to complete a certification regarding lobbying restrictions. The *Certification for Contracts, Grants, Loans and Cooperative Agreements* is included in full text on the FastLane submission screen as well as in Appendix E. The box for "Disclosure of Lobbying Activities" must be checked on the proposal Cover Sheet only if, pursuant to paragraph 2 of the certification, submission of the SF LLL is required.[16]

2.   Sections of the Proposal

The sections described below represent the body of a proposal submitted to NSF. With the exception of "Special Information and Supplementary Documentation" and "Appendices," all sections are required parts of the proposal. These documents must be submitted electronically via the Proposal Preparation Module in the FastLane system.[17]

a.   Cover Sheet

Proposers are required to select the applicable program announcement, solicitation or program description. If the proposal is not submitted in response to a specific program announcement, solicitation, or program

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[14]Detailed instructions for completion of this process are available electronically on the FastLane Website.

[15]For consistency with the Department of Health and Human Services conflict of interest policy, in lieu of "organization," NSF is using the term "institution" which includes all categories of proposers.

[16]Detailed instructions for submission of the SF LLL are available on the FastLane Website.

[17]Requests for approval of a deviation from NSF's electronic submission requirement must be forwarded to the cognizant NSF program for review and approval prior to submission of the paper proposal.

description, proposers should select "Grant Proposal Guide." Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Proposers must then follow instructions for selection of an applicable NSF Division and Program(s) to which the proposal should be directed.

Proposals with "Grant Proposal Guide" selected to Division and Program combinations with active program descriptions will default to the nearest target date. Proposers are advised to select "No Closing Date" when the proposal is not submitted in response to any relevant NSF funding opportunity (which includes program announcements, solicitations or program descriptions.)

A block is included for the proposer to enter its organization's Data Universal Numbering System (DUNS) number. Every organization that applies for NSF funding must include its DUNS number in every proposal. Unaffiliated individuals who apply for NSF funding are exempt from this requirement. This identifier will be used for tracking purposes, and to validate address and point of contact information. Proposing organizations should verify that they have a DUNS number or take steps needed to obtain one as soon as possible. Organizations that do not have a DUNS number may receive one at no cost by calling the dedicated toll-free DUNS number request line at (866) 705-5711. Proposers will need to provide the following information to obtain the DUNS number:

- Proposing Organization name;

- Proposing Organization address;

- Local phone number;

- Name of the CEO/Organization owner;

- Legal structure of the organization (corporation, partnership, proprietorship);

- Year the organization started;

- Primary line of business; and

- Total number of employees (full and part time).

As a result of obtaining a DUNS number, proposers will have the option to be included on the Dun and Bradstreet (D&B) marketing list that is sold to other companies. Proposers that do not want the name/organization included on this marketing list should request not to be listed when speaking with a D&B representative. Once the registration has been completed, the DUNS number should be available the next business from D&B.

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 must 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 prior to making an award.

The proposed duration for which support is requested must 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 of 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 must 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 organization's sponsored projects office.

Some NSF program solicitations require submission of both a preliminary and full proposal as part of the proposal process. In such cases, the following instructions apply:

- During the preliminary proposal stage, the proposing organization should identify the submission as a preliminary proposal by checking the block entitled, "Preliminary Proposal" on the proposal Cover Sheet;

- During the full proposal submission stage, the proposing organization should identify in the block entitled, "Show Related Preliminary Proposal Number", the related preliminary proposal number assigned by NSF.

Should any of the listed items on the proposal Cover Sheet apply to a proposal, the applicable box(es) must be checked.

Profit-making organizations must identify 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 also must 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.

b.   Project Summary

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 and methods to be employed. It must clearly address in separate statements (within the one-page summary): (1) the intellectual merit of the proposed activity; and (2) the broader impacts resulting from the proposed activity. (See Chapter III for further descriptive information on the NSF merit review criteria.) 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. **Proposals that do not separately address both merit review criteria within the one page Project Summary will be returned without review.**

c.   Table of Contents

A Table of Contents is automatically generated for the proposal by the FastLane system. The proposer cannot edit this form.

d.   Project Description (including Results from Prior NSF Support)

(i)   Content

All proposals to NSF will be reviewed utilizing the two merit review criteria described in greater length in Chapter III.

The Project Description should provide a clear statement of the work to be undertaken and must 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 Project Description should outline the general plan of work, including the broad design of activities to be undertaken, and, where appropriate, provide a clear description of experimental methods and procedures and plans for preservation, documentation, and sharing of data, samples, physical collections, curriculum materials and other related research and education products. It must describe as an integral part of the narrative, the broader impacts resulting from the proposed activities, addressing one or more of the following as appropriate for the project: how the project will integrate research and education by advancing discovery and understanding while at the same time promoting teaching, training, and learning; ways in which the proposed activity will broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.); how the project will enhance the infrastructure for research and/or education, such as facilities, instrumentation, networks, and partnerships; how the results of the project will be disseminated broadly to enhance scientific and technological understanding; and potential benefits of the proposed activity to society at large. Examples illustrating activities likely to demonstrate broader impacts are available electronically on the NSF Website[18].

(ii)   Page Limitations and Inclusion of Universal Resource Locators (URLs) within the Project Description

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. PIs are cautioned that the project description must be self-contained and that URLs that provide information related to the proposal should not be used because 1) the information could circumvent page limitations, 2) the reviewers are under no obligation to view the sites, and 3) the sites could be altered or abolished between the time of submission and the time of review.

Conformance to the 15-page limitation will be strictly enforced and may not be exceeded unless a deviation has been specifically authorized. (Chapter II, Section A, Conformance with Instructions for Proposal Preparation, contains information on deviations.)

(iii)   Results from Prior NSF Support

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

(a)   the NSF award number, amount and period of support;

(b)   the title of the project;

(c)   a 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;

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

(e)   a 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 the proposal may contain up to five pages to describe the results. Results may be summarized in fewer than five pages, which would give the balance of the 15 pages for the Project Description.

(iv)   Unfunded Collaborations

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 in the supplementary documentation section of the FastLane Proposal Preparation Module. Collaborative activities that are identified in the budget should follow the instructions in Chapter II, Section D.3.

(v)   Group Proposals

NSF encourages submission of proposals by groups of investigators; often these are submitted to carry out interdisciplinary projects. Unless stipulated in a specific program solicitation, however, such proposals will be subject to the 15 page Project Description limitation established in Section (ii) above. PIs who wish to exceed the established page limitations for the Project Description must request and receive a deviation in advance of proposal submission. (Chapter II, Section A, contains information on deviations.)

(vi)   Proposals for Renewed Support

A proposal for renewed support may be either a "traditional" proposal 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 Chapter V, Section B.2 for additional information on preparation of Renewal Proposals.)

e.   References Cited

Reference information is required. Each reference must include the names of all authors (in the same sequence in which they appear in the publication), the article and journal title, book title, volume number, page numbers, and year of publication. If the document is available electronically, the Website address also should be identified.[19] Proposers must be especially careful to follow accepted scholarly practices in providing citations for source materials relied upon when preparing any section of the proposal. While there is no established page limitation for the references, this section must include bibliographic citations only and must not be used to provide parenthetical information outside of the 15-page project description.

f.   Biographical Sketch(es)

(i)   Senior Personnel

A biographical sketch (limited to two pages) is required for each individual identified as senior project personnel. (See Appendix F for the definition of Senior Personnel.) The following information must be provided in the order and format specified below:

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[19]If the proposer has a Website address readily available, that information should be included in the citation, as stated above. It is not NSF's intent, however, to place an undue burden on proposers to search for the URL of every referenced publication. Therefore, inclusion of a Website address is optional. A proposal that includes reference citation(s) that do not specify a URL address is not considered to be in violation of NSF proposal-preparation guidelines and the proposal will still be reviewed.

(a)   Professional Preparation

A list of the individual's undergraduate and graduate education and postdoctoral training as indicated below:

Undergraduate Institution(s)   Major   Degree & Year
Graduate Institution(s)   Major   Degree & Year
Postdoctoral Institution(s)   Area   Inclusive Dates (years)

(b)   Appointments

A list, in reverse chronological order, of all the individual's academic/professional appointments beginning with the current appointment.

(c)   Publications

A list of: (i) up to 5 publications most closely related to the proposed project; and (ii) up to 5 other significant publications, whether or not related to the proposed project. Each publication identified must include the names of all authors (in the same sequence in which they appear in the publication), the article and journal title, book title, volume number, page numbers, and year of publication. If the document is available electronically, the Website address also should be identified.

For unpublished manuscripts, list only those submitted or accepted for publication (along with most likely date of publication).   Patents, copyrights and software systems developed may be substituted for publications. Additional lists of publications, invited lectures, etc., must not be included. Only the list of 10 will be used in the review of the proposal.

(d)   Synergistic Activities

A list of up to five examples that demonstrate the broader impact of the individual's professional and scholarly activities that focuses on the integration and transfer of knowledge as well as its creation. Examples could include, among others: innovations in teaching and training (e.g., development of curricular materials and pedagogical methods); contributions to the science of learning; development and/or refinement of research tools; computation methodologies, and algorithms for problem-solving; development of databases to support research and education; broadening the participation of groups underrepresented in science, mathematics, engineering and technology; and service to the scientific and engineering community outside of the individual's immediate organization.

(e)   Collaborators & Other Affiliations

- **Collaborators and Co-Editors.** A list of all persons in alphabetical order (including their current organizational affiliations) who are currently, or who have been collaborators or co-authors with the individual on a project, book, article, report, abstract or paper during the 48 months preceding the submission of this proposal. Also include those individuals who are currently or have been co-editors of a journal, compendium, or conference proceedings during the 24 months preceding the submission of the proposal. If there are no collaborators or co-editors to report, this should be so indicated.

- **Graduate and Postdoctoral Advisors.** A list of the names of the individual's own graduate advisor(s) and principal postdoctoral sponsor(s), and their current organizational affiliations.

- **Thesis Advisor and Postgraduate-Scholar Sponsor.** A list of all persons (including their organizational affiliations), with whom the individual has had an association as thesis advisor, or with whom the individual has had an association within the last five years as a postgraduate-scholar sponsor. The total number of graduate students advised and postdoctoral scholars sponsored also must be identified.

The information in section (e) above of the biographical sketch is used to help identify potential conflicts or bias in the selection of reviewers. See GPG Appendix B, *Potentially Disqualifying Conflicts of Interest* for additional information on potential reviewer conflicts.

(ii)   Other Personnel

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)

(iii)   Equipment Proposals

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

(a)   Short biographical sketch; and

(b)   List of up to five publications most closely related to the proposed acquisition.

g.   Budget

Each proposal must contain a budget for each year of support requested, unless a particular program solicitation stipulates otherwise. Completion of the budget does not eliminate the need to document and justify the amounts requested in each category. A budget justification of up to three pages is authorized to provide the necessary justification and documentation specified below.

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. Specific categories budgeted must be consistent with the organization's cost accounting practices used in accumulating and reporting costs.

A full discussion of the budget and the allowability of selected items of cost is contained in the GPG, the GPM, as well as other NSF program solicitations. Cost principles governing the allowability of costs are contained in OMB Circulars A-21, A-87 and A-122 and are available at http://www.whitehouse.gov/omb/circulars/index.html.

(i)   Salaries and Wages (Lines A and B on the Proposal Budget)[20]

(a)   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 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.

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[20]Only salaries and wages for employees of the proposing organization should be identified on Lines A and B of the proposal budget. Consultants and subawardee salaries and wages should be budgeted on Lines G. 3 and G.5 of the proposal budget, respectively.

These same principles apply to other types of non-academic organizations, such as research institutes. Since their employment periods are usually annual, salary must 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 (also known as Facilities and Administrative Costs (F&A) for Colleges and Universities). Salaries of administrative or clerical staff may be requested as direct costs, however, 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. Salaries for administrative or clerical staff shall be budgeted as a direct cost only if this type of cost is consistently treated as a direct cost in like circumstances for all other projects and cost objectives. The circumstances for requiring direct charging of these services must be clearly described in the budget justification. Such costs, if not clearly justified, may be deleted by NSF.

(b)   Procedures

The names of the PI(s), faculty, and other senior personnel and the estimated number of full-time-equivalent academic-year, summer, or calendar-year person-months for which NSF funding is requested and the total amount of salaries per year must be listed. For postdoctoral associates and other professionals, the total number of persons for each position must be listed, with the number of full-time-equivalent person-months and total amount of salaries per year. 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 justification should detail the rates of pay by individual for senior personnel, postdoctoral associates, and other professionals.

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 must be requested in the salaries and wages category.

(c)   Confidential Budgetary 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 such cases, 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, senior personnel salaries and person-months must be itemized in a separate statement, and forwarded to NSF in accordance with the instructions specified in Chapter I, Section D.3. This statement must include all of the information requested on the proposal budget 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. The box for "Proprietary or Privileged Information" must be checked on the proposal Cover Sheet when the proposal contains confidential budgetary information.[21]

(ii)   Fringe Benefits (Line C on the Proposal Budget)

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 fund fringe benefits as a direct cost.

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[21]Detailed instructions for submission of confidential budgetary information are available on the FastLane website.

(iii)   Equipment (Line D on the Proposal Budget)

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 must be listed individually by description and estimated cost, including tax, and adequately justified. Allowable items ordinarily will 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 also GPG Chapter VI, Section E, and GPM Section 612 for further information on equipment.)

(iv)   Travel (Line E on the Proposal Budget)

(a)   General

Travel and its relation to the proposed activities must be specified and itemized by destination and cost. Funds may be requested for field work, attendance at meetings and conferences, and other travel associated with the proposed work, including 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.

Allowance for air travel normally will not exceed the cost of round-trip, economy airfares. (See also GPM Section 614.) Persons traveling under NSF grants must travel by US-flag carriers, if available.[22]

(b)   Domestic Travel

For budget purposes, domestic travel includes travel in the US, its possessions, Puerto Rico, and travel to Canada and Mexico.

(c)   Foreign Travel

For budget purposes, travel outside the areas specified above is considered foreign. The proposal must include relevant information, including countries to be visited (also enter names of countries on the proposal budget), 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:

(i)   the individual is a key person who is essential to the research on a full-time basis;

(ii)   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

(iii)   the dependent's travel allowance is consistent with the policies of the organization administering the grant.

(v)   Participant Support (Line F on the Proposal Budget)

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.[23] (See Chapter II, Section D.7) Generally, indirect costs (F&A) are not allowed on participant support costs. The number of participants to be supported must be entered in the parentheses on the proposal budget. These costs also must be justified in the budget justification section of the proposal. Some programs, such as Research Experiences for Undergraduates, have special instructions for treatment of participant support.

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[22] See also the NSF Grant General Conditions (GC-1) for additional information on use of US Flag Air-Carriers at: http://www.nsf.gov/home/grants/grants_gac.htm
[23] Proposers are advised that the GC-1 require the grantee to obtain written authorization from the cognizant NSF program officer prior to the reallocation of funds budgeted for participant support.

(vi) Other Direct Costs (Lines G1 through G6 on the Proposal Budget)

Any costs charged to an NSF grant must be reasonable and directly allocable to the supported activity. The budget must identify and itemize other anticipated direct costs not included under the headings above, including materials and supplies, publication costs, computer services and consultant services. Examples include 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 are specifically required for the project.

(a) Materials and Supplies (Line G1 on the Proposal Budget)

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

(b) Publication/Documentation/Dissemination (Line G2 on the Proposal Budget)

The proposal 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 databases; development, documentation and debugging of software; and storage, preservation, documentation, indexing, etc., of physical specimens, collections or fabricated items.

(c) Consultant Services (Line G3 on the Proposal Budget)

Anticipated consultant services must 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, including subsistence, also may 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.[24]

(d) Computer Services (Line G4 on the Proposal Budget)

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 must be included. The proposal budget also may request costs, which must be shown to be reasonable, for leasing of computer equipment. Special purpose computers or associated hardware and software, other than general purpose PCs, may be requested as items of equipment and justified in terms of their necessity for the activity proposed.

(e) Subawards[25] (Line G5 on the Proposal Budget)

Except for the procurement of such items 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 must be disclosed in the proposal. At a minimum, the disclosure must include a clear description of the work to be performed, and the basis for selection of the subawardee (except for collaborative/joint arrangements) and a separate budget for each subaward.

(f) Other (Line G6 on the Proposal Budget)

Any other direct costs not specified in Lines G1 through G5 must be identified on Line G6. Such costs must be itemized and justified in the budget justification.

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[24]The current maximum consultant daily rate is available electronically on the NSF website at http://www.nsf.gov/bfa/dias/policy/start.htm.
[25]The term "subaward" also includes contracts, subcontracts and other arrangements.

(vii)   Total Direct Costs (Line H on the Proposal Budget)

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

(viii)   Indirect Costs (also known as Facilities and Administrative Costs (F&A) for Colleges and Universities) (Line I on the Proposal Budget)

The 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 Institution & Award Support. An organization may obtain guidelines for submitting rate proposals from that Branch, telephone (703) 292-8244.

Within Government guidelines, unless otherwise indicated in a specific program 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).

(ix)   Total Direct and Indirect Costs (F&A) (Line J on the Proposal Budget)

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

(x)   Residual Funds (Line K on the Proposal Budget)

This line is used only for budgets for incremental funding requests on continuing grants. Grantees must provide a rationale for residual funds in excess of 20% as part of the annual project report.

(xi)   Amount of This Request (Line L on the Proposal Budget)

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.

(xii)   Cost Sharing (Line M on the Proposal Budget)

(a)   Statutory Cost Sharing Requirement. In accordance with Congressional requirements (see GPM 330), NSF requires that each grantee share in the cost of research projects resulting from unsolicited proposals. In addition to proposals submitted solely in response to the *Grant Proposal Guide*, proposals submitted in response to NSF program announcements are considered unsolicited[26] and are subject to the statutory cost sharing requirement.

The grantee may meet the statutory cost sharing requirement by choosing either of two alternatives:

- by cost sharing a minimum of one percent on the project; or

- by cost sharing a minimum of one percent on the aggregate costs of all NSF-supported projects requiring cost sharing.

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[26] Proposals submitted in response to program solicitations are considered "solicited." This means that the resulting awards are not subject to statutory cost sharing.

The statutory cost sharing 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 solicitation:

- international travel;

- construction, improvement or operation of facilities;

- acquisition of research equipment;

- ship operations;

- education and training;

- publication, distribution and translation of scientific data and information;

- symposia, conferences and workshops; and

- special studies authorized or required by Subsections 3a(5) through 3a(7) of the NSF Act, as amended.

In accordance with Important Notice 128, *Revision of the NSF Cost Sharing Policy*, for unsolicited proposals submitted in response to the Grant Proposal Guide and for proposals submitted in response to NSF program announcements, only the statutory cost sharing amount (1%) is required. For these proposals, proposers are advised **NOT** to identify cost sharing amounts on Line M of the proposal budget. A set of Frequently Asked Questions (FAQs) regarding the cost sharing issue is available for use by the proposer and awardee community on the NSF Website.

(b)   Cost Sharing Requirements Under NSF Program Solicitations. Proposals submitted in response to NSF solicitations may be subject to special cost sharing requirements. In cases where cost sharing is required, NSF has determined that proposals submitted in response to the solicitation provide a tangible benefit to the award recipient(s) (normally beyond the immediate term or scope of the NSF-supported activity). Benefit is defined in terms of capacity building, potential dollar revenues, time frames, or third party users. NSF-funded activities that are characterized by such benefits are awards for infrastructure-building purposes (instrumentation/equipment/centers/facilities) or for awards where there is clear potential to make profit or generate income (e.g., curriculum development). In accordance with Important Notice 128, proposers are advised not to exceed the cost sharing level or amount specified in the solicitation.

When cost sharing is required, it is considered an eligibility rather than a review criterion. In order to retain this concept, NSF has modified the FastLane system to ensure that Line M is masked from peer reviewers during the review process.

Proposers are advised that all proposed cost sharing commitments, if incorporated into the award, are subject to audit. When applicable, 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 also must be provided in the budget justification.[27] It should be noted that contributions derived from other Federal funds or 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. 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 by the grantee.

(xiii)   Unallowable Costs

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

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

(a)   Entertainment

Costs of entertainment, amusement, diversion and social activities and any costs directly associated with such activities (such as tickets to shows or sporting 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.)

(b)   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.

(c)   Alcoholic Beverages

No NSF funds may be spent on alcoholic beverages.

h.   Current and Pending Support

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, local or foreign government agencies, public or 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 must be included, even if they receive no salary support from the project(s). The total award amount for the entire award period covered (including indirect costs) must be shown as well as the number of person-months per year to be devoted to the project, regardless of source of support. Similar information must be provided for all proposals already submitted or submitted concurrently to other possible sponsors, including NSF. Concurrent submission of a proposal to other organizations will not prejudice its review by NSF. Note the Biological Sciences Directorate exception to this policy, however, delineated in Chapter I, Section A.

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

i.   Facilities, Equipment and Other Resources

This section of the proposal is used to assess the adequacy of the organizational resources available to perform the effort proposed. Proposers must describe only those resources that are directly applicable.

j.   Special Information and Supplementary Documentation

Except as specified below, special information and supplementary documentation must be included as part of the project description (or part of the budget justification), if it is relevant to determining the quality of the proposed work. Information submitted in the following areas is not considered part of the 15-page project description limitation. This Special Information and Supplementary Documentation section also 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 Chapter II, Section D.3)

- Environmental impact statement for activities that have an actual or potential impact on the environment. (GPM Section 830)

- 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 and GPM 715)

- Research in Greenland. (GPM Section 763)

- Antarctic proposals to *any* NSF program require operational worksheets by the first Wednesday of June in the year before any proposed fieldwork. See "proposals with fieldwork" in Chapter V.A, of Antarctic Research. Special budget considerations also apply. See Chapter V.B, of Antarctic Research).

- Research in a location designated, or eligible to be designated, a registered historic place. (GPM Section 840) Where applicable, the box for "Historic Places" must be checked on the proposal Cover Sheet.

- Research involving field experiments with genetically engineered organisms. (GPM Section 712)

- Documentation regarding research involving the use of human subjects, hazardous materials, vertebrate animals, or endangered species. (GPM Section 710, GPG Chapter II, Sections D.5 and D.6) Where applicable the box for "Human Subjects" or "Vertebrate Animals" must be checked on the proposal Cover Sheet.

- Projects that involve technology utilization/transfer activities, that require a management plan, or that involve special reports or final products.

- Special components in new proposals or in requests for supplements, such *as Facilitation Awards for Scientists and Engineers with Disabilities (FASED), Research Opportunity Awards or Research Experiences for Undergraduates*. (See GPG Chapter II, Section D.2 for information on FASED, and for the other programs identified, consult the relevant program solicitation.)

- *Research in Undergraduate Institutions*. (See program solicitation for information.)

- *Research Experiences for Undergraduates*. (See program solicitation for REU site proposals for further information.)

In addition, the supplementary documentation section 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.

k.   Appendices

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

D.   Special Guidelines

1.   Small Grants for Exploratory Research (SGER) Proposals

Proposals 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 and potentially transformative research ideas;

- 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 or anthropogenic disasters and similar unanticipated events; or

- efforts of similar character likely to catalyze rapid and innovative advances.

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. The project description must be brief (no more than 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 must list no more than five significant publications or other research products. The box for "Small Grant for Exploratory Research" must be checked on the proposal Cover Sheet.

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 that will be subject to full merit review. The maximum SGER award amount will not exceed $200,000. Although the maximum award amount is $200,000, 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.

At the discretion of the Program Officer, and 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 must be submitted one to two months before the expiration date of the initial award. A project report and outline of proposed research, not to exceed five pages, must be included.

2. Facilitation Awards for Scientists and Engineers with Disabilities (FASED)

As part of its effort to promote full utilization of highly qualified scientists, mathematicians, and engineers, and to develop scientific and technical talent, the Foundation has the following goals:

- to reduce or remove barriers to participation in research and training by physically disabled individuals by providing special equipment and assistance under awards made by NSF; and

- to encourage disabled individuals to pursue careers in science and engineering by stimulating the development and demonstration of special equipment that facilitates their work performance.

Individuals with disabilities eligible for facilitation awards include principal investigators, other senior project personnel, and graduate and undergraduate students. The cognizant NSF Program Officer will make decisions regarding what constitutes appropriate support on a case-by-case basis. The specific nature, purpose, and need for equipment or assistance should be described in sufficient detail in the proposal to permit evaluation by knowledgeable reviewers.

There is no separate program for funding of special equipment or assistance. Requests are made in conjunction with regular competitive proposals, or as a supplemental funding request to an existing NSF award. Specific instructions for each type of request are provided below.

a. Requests as part of a competitive proposal submission

Funds may be requested to purchase special equipment, modify equipment or provide services required specifically for the work to be undertaken. Requests for funds for equipment or assistance that compensate in a

general way for the disabling condition are not permitted. For example, funds may be requested to provide: prosthetic devices to manipulate a particular apparatus; equipment to convert sound to visual signals, or vice versa, for a particular experiment; access to a special site or to a mode of transportation (except as defined below); a reader or interpreter with special technical competence related to the project; or other special-purpose equipment or assistance needed to conduct a particular project. Items, however, such as standard wheel chairs, prosthetics, hearing aids, TDD/text-phones, or general readers for the blind would not be supported because the need for them is not specific to the proposed project. Similarly, ramps, elevators, or other structural modifications of research facilities are not eligible for direct support under this program.

No maximum funding amount has been established for such requests. It is expected, however, that the cost (including equipment adaptation and installation) will not be a major component of the total proposed budget for the project. Requests for funds for special equipment or assistance to facilitate the participation of individuals with disabilities should be included in the proposed budget for the project and documented in the budget justification. The specific nature, purpose and need for such equipment or assistance should be described in sufficient detail in the Project Description to permit evaluation of the request by knowledgeable reviewers.

b.   Supplemental funding requests to existing NSF grants

Supplemental funds for special equipment or assistance to facilitate participation in NSF-supported projects by persons with disabilities may be provided under existing NSF grants. Normally, title is vested in the grantee organization for equipment purchased in conjunction with NSF-supported activities. In accordance with the Grant General Conditions (GC-1),[28] the grantee organization guarantees use of the equipment for the specific project during the period of work funded by the Foundation, and assures its use in an appropriate manner after project completion. In instances involving special equipment for persons with disabilities, the need for such may be unique to the individual. In such cases, the grantee organization may elect to transfer title to the individual to assure appropriate use after project completion.

Supplemental requests should be submitted electronically by using the "Supplemental Funding Request" function in FastLane and should include a brief description of the request, a budget and a budget justification. Requests must be submitted at least two months before funds are needed. Funding decisions will be made on the basis of the justification and availability of program funds with any resultant funding provided through a formal amendment of the existing NSF grant.

3.   Collaborative Proposals

A collaborative proposal is one in which investigators from two or more organizations wish to collaborate on a unified research project. Collaborative proposals may be submitted to NSF in one of two methods: as a single proposal, in which a single award is being requested (with subawards administered by the lead organization); or by simultaneous submission of proposals from different organizations, with each organization requesting a separate award. In either case, the lead organization's proposal must contain all of the requisite sections as a single package to be provided to reviewers (that will happen automatically when procedures below are followed.) All collaborative proposals must clearly describe the roles to be played by the other organizations, specify the managerial arrangements, and explain the advantages of the multi-organizational effort within the project description.   PIs are strongly encouraged to contact the cognizant NSF Program Officer prior to submission of a collaborative proposal.

a.   Submission of a collaborative proposal from one organization

The single proposal method allows investigators from two or more organizations who have developed an integrated research project to submit a single, focused proposal.   A single investigator bears primary responsibility for the administration of the grant and discussions with NSF, and, at the discretion of the organizations involved, investigators from any of the participating organizations may be designated as co-PIs.

By submission of the proposal, the organization has determined that the proposed activity is administratively manageable. NSF may request a revised proposal, however, if it considers that the project is so complex that it

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[28] See the NSF Grant General Conditions, Article 6.

will be too difficult to review or administer as presented. (See Chapter II, Section C.2.g.(vi)(e) for additional instructions on preparation of this type of proposal.)

b.   Submission of a collaborative proposal from multiple organizations

In many instances, simultaneous submission of proposals that contain the same project description from each organization might be appropriate. For these proposals, the project title must begin with the words "Collaborative Research:" The lead organization's submission will include a proposal Cover Sheet, project summary, project description, references cited, biographical sketches, budgets and budget justification, current and pending support, and facilities, equipment and other resources for their organization. Non-lead organization submissions will include all of the above for their organization except the project summary, project description, and references cited which are the same for all collaborating organizations. FastLane will combine the proposal submission for printing or electronic viewing.

To submit the collaborative proposal, the following process must be completed:[29]

(i)   Each non-lead organization must assign their proposal a proposal PIN. This proposal PIN and the temporary proposal ID generated by FastLane when the non-lead proposal is created must be provided to the lead organization before the lead organization submits its proposal to NSF.

(ii)   The lead organization must then enter each non-lead organization(s) proposal PIN and temporary proposal ID into the FastLane lead proposal by using the "Link Collaborative Proposals" option found on the FastLane "Form Preparation" screen.

Given that such separately submitted collaborative proposals constitute a "single" proposal submission to NSF, it is imperative that the proposals be submitted within a reasonable timeframe to one another. Failure to submit all components of the collaborative proposal on a timely basis may impact the review of the proposal.

4.   Proposals for Equipment

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 must 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 that may include special guidelines such as cost sharing or other requirements. It is important to use the applicable guidelines in these competitions. The appropriate program should be consulted.

Instrumentation and equipment proposals must follow the format of research proposals. Each potential major user must describe the project(s) for which the equipment will be used. These descriptions must be succinct, not necessarily as detailed as in an individual research proposal, and must 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 must be described in sufficient detail to allow comparison of its capabilities with the needs of the proposed activities. Equipment proposals also must 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 must discuss arrangements for acquisition, maintenance and operation, including:

- overall acquisition plan;

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[29]Detailed instructions for the electronic preparation and submission of collaborative proposals are available on the FastLane Website at https://www.fastlane.nsf.gov/a1/newstan.htm#collaborative.

- 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 particularly related equipment; and

- brief description of other support services available 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.[30] Equipment proposals must include the information described above within the 15-page project description. These proposals normally compete with proposals for research or education projects.

5. Proposals Involving Vertebrate Animals

For proposals involving the use of vertebrate animals[31], sufficient information must be provided within the 15-page project description to enable reviewers to evaluate the choice of species, number of animals to be used, and any necessary exposure of animals to discomfort, pain, or injury.

Consistent with the requirements of the Animal Welfare Act [7 U.S.C. 2131 et seq] and the regulations promulgated by the Secretary of Agriculture [9 CFR, 1.1-4.11], NSF requires that proposed projects involving use of any vertebrate animal for research or education be approved by the submitting organization's Institutional Animal Care and Use Committee (IACUC) before an award can be made. For this approval to be accepted by NSF, the organization must have a current Institutional Animal Welfare Assurance established with the Public Health Service (PHS).

If the organization does not have such an Assurance in place, then approval of the project by the IACUC of an organization with a current PHS Assurance will be acceptable, if the IACUC agrees to provide the required oversight of facilities and activities during the award. Alternatively, the submitting organization may create its own IACUC by establishing a single-project Institutional Animal Welfare Assurance with NSF. In any case, IACUC approval must be received prior to an award. Questions regarding this requirement should be directed to the cognizant NSF Program Officer.

The box for "Vertebrate Animals" must be checked on the proposal Cover Sheet with the IACUC approval date (if available) identified in the space provided. If IACUC approval has not been obtained prior to submission, the proposer should indicate "Pending" in the space provided for the approval date.

These same rules apply to awards to individuals (fellowships) for activities that involve use of vertebrate animals. The "Vertebrate Animals" box should be checked on the proposal Cover Sheet. Evidence of IACUC approval can be provided in a letter giving the date of IACUC approval with the appropriate organizational signature.[32]

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[30]See GPM 542 for additional information on vesting of title to equipment.
[31] In addition to vertebrate animals covered by the Animal Welfare Act, the requirements specified in this GPG coverage also are extended to rats, birds and mice.
[32]Such letters should be provided as supplementary documentation and should be submitted electronically via the Proposal Preparation Module in the FastLane system.

6.   Proposals Involving Human Subjects

Projects involving research with human subjects must ensure that subjects are protected from research risks in conformance with the relevant federal policy known as 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) must affirm that the IRB or an appropriate knowledgeable authority previously designated by the organization (not the Principal Investigator) has declared the research exempt from IRB review, in accordance with the applicable subsection, as established in section 101(b) of the Common Rule. The box for "Human Subjects" must be checked on the Cover Sheet with the IRB approval date (if available) or exemption subsection from the Common Rule identified in the space provided. If IRB approval has not been obtained prior to submission, the proposer should indicate "Pending"   in   the   space   provided   for   the   approval   date.   Advice   is   available   at http://www.nsf.gov/bfa/dias/policy/start.htm.

7.   Proposals for 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 US of major international conferences, symposia and workshops. 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 and engineering societies, they also may 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. Proposals for Conferences, Symposia and Workshops 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 (that complies with the page and font size instructions in Chapter II, Section B, Format of the Proposal) must contain the following elements:

- Cover Sheet;

- A statement of the objectives of the project (summarized in one page or less);

- A statement of the need for such a gathering and a list of topics;

- A listing of recent meetings on the same subject, including dates and locations;

- The 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;

- A 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;

- A plan for recruitment of and support for speakers and other attendees, that includes participation of groups underrepresented in science and engineering (e.g., underrepresented minorities, women, and persons with disabilities);

- An estimated total budget for the conference, together with an itemized statement of the amount of support requested from NSF (the NSF budget may include participant support for transportation (when appropriate), *per diem* costs, stipends, publication and other conference-related costs. (Note:

participant support costs must be excluded from the indirect cost base.) See Chapter II, Section C.2.g.(v); and

- The support requested or available from other Federal agencies and other sources. (Chapter II, Section C.2.h should be consulted to prepare this portion of the proposal.)

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

8. Proposals to Support International Travel

Proposals for travel support for US participation in international scientific and engineering meetings held abroad are handled by the NSF organizational unit with program responsibility for the area of 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 US participation in one or more international scientific meeting(s) abroad. Proposals submitted for this purpose should address the same items as those indicated for conferences, symposia, and workshops (see Section 7 above), with particular attention to plans for composition and recruitment of the travel group. Information on planned speakers should be provided where available from the conference organizer.

Group travel proposals may request support only for the international travel costs of the proposed activity. However, in addition, group travel proposals also 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.

9. Proposals for 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 Office of International Science and Engineering. The thesis advisor or concerned faculty member submits proposals on behalf of the graduate student. Further information can be obtained from the cognizant program office.

III.   NSF Proposal Processing and Review

Proposals received by the NSF Proposal Processing Unit are assigned to the appropriate NSF program for acknowledgement 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 fields represented by the proposal. Proposers are invited to suggest names of persons they believe are especially well qualified to review the proposal and/or persons they would prefer not review the proposal. These suggestions may serve as one source in the reviewer selection process at the Program Officer's discretion. Program Officers may obtain comments from assembled review panels or from site visits before recommending final action on proposals. Senior NSF staff further review recommendations for awards.

A.   REVIEW CRITERIA

All NSF proposals are evaluated through use of two National Science Board approved merit review criteria. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities. For example, proposals for large facility projects also might be subject to special review criteria outlined in the program solicitation.

The two merit review criteria are listed below. The criteria include considerations that help define them. These considerations are suggestions, and not all will apply to any given proposal. While proposers must address both merit review criteria, reviewers will be asked to address only those considerations that are relevant to the proposal being considered and for which the reviewer 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?[33]

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

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

Integration of Research and Education

One of the principal strategies in support of NSF's goals is to foster integration of research and education through the programs, projects and activities it supports at academic and research institutions. These institutions provide abundant opportunities where individuals may concurrently assume responsibilities as researchers, educators, and students, and where all can engage in joint efforts that infuse education with the excitement of discovery and enrich research through the diversity of learning perspectives.

Integrating Diversity into NSF Programs, Projects, and Activities

Broadening opportunities and enabling the participation of all citizens, women and men, underrepresented minorities, and persons with disabilities, are essential to the health and vitality of science and engineering. NSF

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

is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports.

B.   PROPOSAL FILE UPDATES

It is the responsibility of the proposing organization to thoroughly review each proposal prior to submission. On occasion, however, a problem is identified with a portion of the proposal after the proposal has been submitted electronically to NSF.

The FastLane Proposal File Update Module allows the organization to request the replacement of files or revision of other Proposal Attributes, associated with a previously submitted proposal. A request for a proposal file update must be submitted by an individual who is authorized to submit proposals on behalf of the organization, and electronically signed by the Authorized Organizational Representative (AOR). An update request must contain a justification that addresses:

1.   why the changes or file replacements are being requested; and

2.   any differences between the original and proposed replacement files.

A request for a proposal file update automatically will be accepted if submitted **prior to:**

•   the deadline date specified in a program solicitation;

•   initiation of external peer review in cases when a target date is utilized; [34] and

•   initiation of external peer review in the case of an unsolicited proposal.

A request for a proposal file update **after** the timeframes specified above will require acceptance by the cognizant NSF Program Officer. Such requests may be submitted only to correct a technical problem with the proposal (i.e., formatting or print problems). Changes in the content of the proposal should not be requested after the timeframes specified above. When a request is accepted, the proposed files or revisions to proposal attributes will immediately replace the existing files and become part of the official proposal.

PIs can access the Proposal File Update Module via the "Proposal Functions" section of FastLane. Authorized individuals in the organization's Sponsored Projects Office (or equivalent) can initiate or review requests for proposal file updates using the "Submit Proposals/Supplements/File Updates/Withdrawals" Module via the FastLane "Research Administration Functions."[35]

NSF will consider only one request for a proposal file update per proposal at a time. It is anticipated that it will be a rare occurrence for more than one file update request to be submitted for a proposal.

C.   REVISIONS TO PROPOSALS MADE DURING THE REVIEW PROCESS

In the event of a significant development (e.g., research findings, changed circumstances, unavailability of PI or other senior personnel, etc.) that might materially affect the outcome of the review of a pending proposal, the proposer must contact the cognizant Program Officer to discuss the issue. Submitting additional information must not be used as a means of circumventing page limitations or stated deadlines.

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.

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[34]The status of a proposal may be found via the "Proposal Functions" section of FastLane.
[35]Detailed instructions on submitting Proposer-initiated proposal file updates are available on the FastLane Website at: https://www.fastlane.nsf.gov/documents/pfu/pfu.jsp.

Negotiating budgets generally involves discussing a lower or higher amount of total support for the proposed project. The NSF Program Officer may suggest reducing or eliminating costs for specific budget items that are clearly unnecessary or unreasonable for the activities to be undertaken, especially when the review process supports such changes; however, this would generally not include faculty salaries, salary rates, fringe benefits, or tuition. Note: indirect cost rates are not subject to negotiation. The NSF Program Officer may discuss with PIs the "bottom line" award amount, i.e., the total NSF funding that will be recommended for a project. NSF Program Officers may not renegotiate cost sharing or other organizational commitments.

When such discussions result in a budget reduction of 10% or more from the amount originally proposed, a corresponding reduction should be made in the scope of the project. Proposers must use the FastLane Revised Proposal Budget Module to submit this information. A revised proposal budget also must include a Budget Impact Statement that describes the impact of the budget reduction on the scope of the project.

Note: Revised proposal budgets must be electronically signed by the AOR. Paper copies of the revised budget should not be mailed to NSF.

D.   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. 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. For example, proposals for large facility projects also might require review in accordance with NSF's *Guidelines for Planning and Managing the Major Research Equipment Account.* 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 cooperative agreement.   The 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.

Proposers are cautioned that only an appointed NSF Grants Officer 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.

E.   COPIES OF REVIEWS

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

IV.   Withdrawals, Returns and Declinations

A.   WITHDRAWALS

A proposal may be withdrawn at any time before a funding recommendation is made by the cognizant NSF Program Officer. Proposals must be electronically withdrawn via the FastLane Electronic Proposal Withdrawal System. This module in Fastlane automates the proposal withdrawal process and provides a mechanism that will help organizations to more effectively manage their proposal portfolio, as well as to help eliminate the submission of duplicate proposals to NSF. The Electronic Proposal Withdrawal System includes three processes:

- *Principal Investigator's Proposal Withdrawal* allows a PI to initiate a proposal withdrawal and forward it to the organization's sponsored projects office (or equivalent) for submission to NSF.

- *Sponsored Projects Office (SPO) Proposal Withdrawal* allows an authorized individual in the organization's sponsored projects office (or equivalent) to initiate a proposal withdrawal for submission to NSF.

- *Proposal Submission Duplicate Withdrawal* prevents a SPO official from submitting a new proposal if a duplicate (a proposal from the same organization with the same title and same PI and co-PIs) already has been submitted to NSF within the last two weeks prior to the current submission. If these conditions are met, the system will allow the authorized SPO official to either withdraw the previous duplicate and then proceed with the submission of the new proposal, or to modify the new proposal so it is different from the previous proposal.

Principal Investigators can access the Proposal Withdrawal utility via the "Submitted Proposals" screen under the FastLane Proposal Preparation Functions Module. Authorized individuals[36] in the organization's sponsored projects office (or equivalent) can initiate or review a proposal withdrawal using the "Submit Proposals/Supplements/File Updates/Withdrawals" Module via the FastLane "Research Administration Functions".[37]

In cases where NSF already has made a funding decision, proposals will not be permitted to be withdrawn via the electronic proposal withdrawal system. When a PI or SPO representative attempts to prepare a proposal withdrawal for such a proposal, a message will be displayed to contact the cognizant NSF Program Officer for further assistance.

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 to the PI and the SPO without waiting for the official withdrawal notification.

If a proposal withdrawal is submitted for a proposal that is part of a collaborative effort, regardless of whether the organization is the lead or non-lead, the electronic proposal withdrawal system will withdraw that proposal along with the other remaining proposals that are identified as part of the collaborative effort. If the remaining organizations in the collaborative determine that the project can still proceed, a new collaborative proposal must be submitted.

Copies of reviews received by NSF before a proposal is withdrawn will be provided to the PI. NSF provides notice of a withdrawal, return, declination, or reconsideration to both the PI and the SPO.

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[36] Authorized Organizational Representatives with "submit" permission also can initiate a proposal withdrawal.
[37] Detailed instructions on the Electronic Proposal Withdrawal System are available on the FastLane Website at: https://www.fastlane.nsf.gov/documents/epw/epw.jsp.

B.   RETURN WITHOUT REVIEW

Proposals may not be considered by NSF for the following reasons.

The proposal:

1.   is inappropriate for funding by the National Science Foundation;
2.   is submitted with insufficient lead-time before the activity is scheduled to begin;
3.   is a full proposal that was submitted by a proposer that has received a "not invited" response to the submission of a preliminary proposal;
4.   is a duplicate of, or substantially similar to, a proposal already under consideration by NSF from the same submitter;
5.   does not meet NSF proposal preparation requirements, such as page limitations, formatting instructions, and electronic submission, as specified in the *Grant Proposal Guide* or program solicitation[38];)
6.   is not responsive to the GPG or program announcement/solicitation;
7.   does not meet an announced proposal deadline date (and time, where specified);
8.   was previously reviewed and declined and has not been substantially revised.

C.   DECLINATIONS

A PI whose proposal for NSF support has been declined generally will receive information and an explanation of the reason(s) for declination (via paper or e-mail form) along with copies of the reviews considered in making the decision. If that explanation does not satisfy the PI, he/she may request additional information from the cognizant NSF Program Officer or Division Director.

PIs and co-PIs may access review information electronically via FastLane after the decision has received the concurrence of the cognizant Division Director, when all the review information has been released for their proposal.

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 also may 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, including the categories of actions that are subject to the NSF reconsideration policy.

E.   RESUBMISSION

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

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[38]Unless a deviation has been authorized in advance of the paper submission. See Chapter II, Section A, for further information.

V.   The Award and Continued Support

A.   TYPES OF NSF GRANTS

NSF awards the following 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.

NSF grants are electronically signed by an NSF Grants Officer, and transmitted to the organization via e-mail. An NSF grant consists of:

a.   the award, which includes any special provisions applicable to the grant and any numbered amendments thereto;
b.   the budget that 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);
c.   the proposal referenced in the award;
d.   the applicable grant conditions[39], such as Grant General Conditions (NSF GC-1) or Federal Demonstration Partnership (FDP) Terms and Conditions; and
e.   any NSF issuance that may be incorporated by reference in the award.

In addition to the e-mail notification, grantees can access their NSF awards via FastLane. Sponsored projects offices are able to view, print and/or download NSF awards for their organizations.

Effective/Expiration Dates and Preaward Costs. The grant period begins on the effective date specified in the award or, in its absence, the date of the award, and runs until the expiration date indicated. Expenditures 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 only may be made 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 annual project reports and does not require submission of a new proposal. NSF must receive an annual project report for each increment of funding at least three months prior to the end of the current funding period. See Chapter VI, Section H.1, for information on NSF's electronic reporting system available via the FastLane system. Continuing grant increments will be approved by the cognizant Program Officer. The sponsored projects office and PI will be notified by the cognizant NSF Program Officer of NSF's approval via an electronic notification. The grantee community can access award notifications immediately after NSF's approval via the FastLane system.

2.   Renewal Proposals

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

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[39]Additional coverage on the NSF grant conditions (e.g., GC-1 and FDP) is contained in GPM Section 240.

All proposals for renewed support of research projects, from academic institutions *only*, must include information on human-resources development at the postdoctoral, graduate and undergraduate levels as part of Results from Prior NSF Support.[40] 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 non-academic organizations.

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 the following two formats for preparation of a renewal proposal. Both types of renewal proposals must be submitted electronically via the NSF FastLane system.

- **Traditional Renewal**. 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.

- **Accomplishment-Based Renewal**.   In an "Accomplishment-Based Renewal" (ABR) proposal, the Project Description (including the Results from Prior NSF Support) is replaced with the following items:

  o   copies of no more than six reprints[41] 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;

  o   information on human resources development at the postdoctoral, graduate and undergraduate levels; and

  o   a brief summary (not to exceed four pages) of plans for the proposed support period.

All other information required for NSF proposal submission remains the same.

It must be clearly indicated in the proposal that it is an ABR submission and the box for "Accomplishment-Based Renewal" must be checked on the proposal Cover Sheet. ABR proposals may not be submitted for consecutive renewals.

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 for a period of up to two years. 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. Documentation necessary for processing of special creativity extensions should be submitted electronically via the "Supplemental Funding Request" function in FastLane.

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 must submit a request for supplemental funding at least two months before funds are needed. Requests for supplemental

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[40]This requirement applies to both types of renewal proposals: Traditional Renewal and Accomplishment-Based Renewal.
[41]Reprints should be provided as supplementary documentation and should be submitted electronically via the Proposal Preparation Module in the FastLane system.

funding may be initiated in the FastLane system by using the "Supplemental Funding Request" function.[42] Such requests must include a summary of the proposed work, a brief justification, and a budget for the requested funds.

Program officers may make decisions regarding whether or not to recommend a small supplement without merit review of the supplemental funding request. Requests for larger supplements, or for more than six months, may require additional merit review. 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 NSF Program Officer prior to submitting a request for supplemental funding.

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 NSF, providing supporting reasons for the extension and the revised expiration date, at least ten days prior to the expiration date specified in the grant to ensure accuracy of NSF's grant data.   All grantee-authorized extension notifications must be submitted electronically via the FastLane system. For grantee-authorized extensions, no amendment will be issued.

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 electronically via the NSF Fastlane system. The request must be submitted to NSF at least 45 days prior to 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, the fact 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. The first no-cost extension request will be subject to the approval of the cognizant Program Officer. The sponsored projects office and PI will be electronically notified of the disposition of this request by the cognizant NSF Program Officer. The second no-cost extension will continue to be subject to the approval of an NSF Grants Officer, and, if approved, will be 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.

If no funds remain on the project, neither a grantee-authorized no-cost extension notification nor a no-cost extension request for NSF approval may be submitted. The status of all post-award requests submitted to NSF can be tracked on FastLane by the Sponsored Projects Office as well as by the PIs.

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[42]Detailed instructions for preparation and submission of supplemental funding requests are available on the FastLane Website at https://www.fastlane.nsf.gov/documents/sfr/sfr.jsp.

VI.   Grant Administration Highlights

The administration of grants is governed by the actual conditions of the grant. (See Chapter V, Section A, Standard and Continuing Grants) 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*.   Frequently Asked Questions (FAQs) regarding grant administration are available on the Policy Office Website at: http://www.nsf.gov/pubs/gpg/faqs.htm.

The grantee organization has primary responsibility for general supervision of all grant activities and for notifying NSF of significant problems relating to research misconduct 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.

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 research misconduct; Drug-Free Workplace requirements; restrictions on lobbying; patent and copyright requirements; cost sharing; and the use of US-flag carriers for international travel. These are identified in the GPM and are summarized in the NSF Grant Conditions.

B.   GRANTEE RESPONSIBILITIES AND FEDERAL REQUIREMENTS

1.   The grantee organization has full responsibility for the conduct of the project or activity supported under the award and for adherence to the grant conditions. Although the grantee is encouraged to seek the advice and opinion of NSF on special problems that may arise, such advice does not diminish the grantee's responsibility for making sound scientific and administrative judgments and should not imply that the responsibility for operating decisions has shifted to NSF. The grantee is responsible for notifying NSF about: (1) any allegation of research misconduct that it concludes has substance and requires an investigation in accordance with NSF research misconduct regulations published at 45 CFR 689; or (2) any significant problems relating to the administrative or financial aspects of the award.

2.   The requirements of the grant are contained in the NSF Grant General Conditions unless otherwise specified in the award instrument. Certain applicable Federal administrative standards are incorporated by reference. The applicable requirements are contained in:

a.   OMB Circular A-110 for grantees that are institutions of higher education, hospitals, and non-profit organizations; NSF has determined that OMB Circular A-110 standards also will be applicable to commercial organizations, including small businesses; and

b.   45 CFR 602 (the Common Rule implementing OMB Circular A-102), for units of State and Local Government.

3.   By acceptance of the grant, the grantee agrees to comply with the applicable Federal requirements for grants (and cooperative agreements, when applicable) and to the prudent management of all expenditures and actions affecting the award. Documentation for each expenditure or action affecting the grant must reflect appropriate organizational reviews or approvals that should be made in advance of the action.

C.   PRIOR APPROVAL REQUIREMENTS

During the performance of a project, it may be appropriate for funds to be reallocated to support advancement of the project. Grantees have broad discretion to rebudget within the cost and administrative principles. Unless otherwise stated in the grant or as noted below, the grantee is authorized to transfer funds among various budget categories for allowable expenditures without prior NSF approval.

Prior written authorization from NSF is required only for the following:

1. transfer of the project effort;
2. change in objectives or scope;
3. change in PI or co-PI;
4. a substantial change in PI effort;
5. reduction in the cost sharing amount identified on Line M of the grant budget;
6. reallocation of funds budgeted for participant support; or
7. renovation/alteration (construction) activities costing $25,000 or more.

Changes in participant support costs require only Program Officer approval; all the other changes listed above require Program Officer and Grants Officer approval. (See also GPM Exhibit III-1, http://www.nsf.gov/pubs/2002/nsf02151/ex3_1.pdf, which highlights grantee notifications to, and requests for approval from, NSF.) All requests for prior approval to NSF must be submitted electronically via the NSF FastLane system.

D.   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, request that the grant be terminated, or transfer the grant (via NSF) to the PI's new organization. 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, a grant transfer request shall be submitted via the Notification and Request Module in the FastLane system.[43]

The transfer request shall include a:

1. brief summary of progress to date;

2. description of work yet to be accomplished;

3. budget, including total estimated disbursements to date (transfer amount will be automatically calculated, based on the amount entered in total estimated disbursements.) The original organization is responsible for including in the total estimated disbursements, any anticipated costs yet to be incurred against the original award. The transfer request cannot be submitted to NSF unless the original organization's Federal Cash Transactions Report (FCTR) for the most recent quarter has been received by NSF and the expenditures posted in the Financial Accounting System. The new organization is responsible for entering the appropriate budget line items prior to submission to NSF, and,

4. additional information for certain types of proposals, such as those that involve human subjects or vertebrate animals. Such proposals may require supplementary documents be submitted in conjunction with the transfer request. The capability exists within FastLane to provide such additional documents.

Special terms and conditions, as appropriate, cited in the original award automatically will convey to the new grantee organization. Note that if the PI's original award was submitted in response to a program solicitation that required cost sharing as part of the award, this cost sharing requirement also must addressed by the new organization in the budget portion of the transfer request. The cost sharing will be reflected as a condition in the award at the new grantee organization.

In those rare instances where:

• there are no funds remaining in the award account, but, outyear increments remain; or

• the award is to be transferred to a foreign organization or to a Federal agency,

the Authorized Organizational Representative of the original award must contact the cognizant Program Officer.

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[43]Detailed instructions on submission of a grant transfer request are available electronically on the FastLane Website.

Upon transfer of the grant to the new organization, any monetary discrepancies must be resolved between the original and the new grantee, and NSF will not intervene in any disputes between the two organizations regarding the transferred amount.

See GPM 312.8 for additional information on PI transfers.

E.   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 normally will 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.

F.   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 & Records 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 must be cited.

G.   SUSPENSION OR TERMINATION OF GRANTS

NSF grants may be suspended or terminated in accordance with the procedures contained in the Grant General Conditions.[44] 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. (See GPM Section 910)

H.   GRANT REPORTS

1.   Annual and Final Project Reports

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

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

PIs are required to use NSF's electronic project-reporting system, available through FastLane, for preparation and submission of annual and final project reports. Such reports provide information on project participants (individual and organizational); activities and findings; publications; and, other specific products and contributions. Submission of the report via FastLane constitutes certification by the PI that the contents of the report are accurate and complete.

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[44]NSF Grant Conditions are available electronically at http://www.nsf.gov/home/grants/grants_gac.htm.

2. Quarterly and Final Expenditure Reports

Quarterly and final expenditure information is provided by grantees through the *Federal Cash Transaction Report,* SF 272. The report must be submitted by the grantee's financial officer through the Financial Administration functions in FastLane. Contact the Institutional Ledger Section of the Division of Financial Management for additional information at http://www.nsf.gov/bfa/dfm/cmeab.htm#il_pers.

I. 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.

J. ACKNOWLEDGMENT OF SUPPORT AND DISCLAIMER

An acknowledgment of NSF support and a disclaimer must appear in publications (including World Wide Web sites) 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 must enter NSF grant number)."

NSF support also must be orally acknowledged during all news media interviews, including popular media such as radio, television and news magazines.

Except for articles or papers published in scientific, technical or professional journals, the following disclaimer must 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."

K. 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 Chapter I, Section D.3, The Full Proposal.) 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.

L.   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: PROPOSAL PREPARATION CHECKLIST

As stated in Chapter II, Section A, it is important that all proposals conform to the proposal preparation and submission instructions provided in the GPG. Conformance is required and will be strictly enforced unless a deviation has been approved. NSF may return without review proposals that are not consistent with these instructions. See Chapter IV.B, Return Without Review, for additional information.

Prior to electronic submission, it is strongly recommended that an administrative review be conducted to ensure that proposals comply with the instructions, in the format specified. This checklist is not intended to be an all-inclusive repetition of the required proposal contents and associated proposal preparation guidelines. It is, however, meant to highlight certain critical items so they will not be overlooked when the proposal is prepared.

[ ] Proposal is responsive to the program announcement/solicitation or to the GPG. If previously declined, proposal has been revised to take into account the major comments from the prior NSF review.
[ ] Proposed work is appropriate for funding by NSF, and is not a duplicate of, or substantially similar to, a proposal already under consideration by NSF from the same submitter.
[ ] Proposal Format (ensure compliance with font, margin and spacing requirements, bearing in mind that proposal readability is of utmost importance)
[ ] Information About Principal Investigators/Project Directors (except for the required information regarding current or previous Federal research support and the name(s) of the PI/co-PI, submission of the information is voluntary)
[ ] List of suggested reviewers, or reviewers not to include (optional)
[ ] Deviation Authorization (if applicable)
[ ] Proprietary or Privileged Information Statement (if applicable)
[ ] SF LLL, *Disclosure of Lobbying Activities* (if applicable) (one copy only, scanned as a single copy document)
[ ] Cover Sheet
    [ ] Program Announcement/Solicitation No./Closing Date (If the proposal is not submitted in response to a specific program announcement/solicitation, proposers must enter NSF 04-23)
    [ ] Specific NSF program(s) identified (if known)
    [ ] For renewal proposal, previous award number entered
    [ ] Related preliminary proposal number entered (if applicable)
    [ ] Appropriate boxes on Cover Sheet checked
[ ] Project Summary (one page only with both merit review criteria separately addressed within the body of the Summary)
[ ] Project Description (15-page limitation)
    [ ] Results from Prior NSF Support (required only for PIs and Co-PIs who have received NSF support within last 5 years)
    [ ] Merit Review Criteria (ensure both merit review criteria are described as an integral part of the narrative.[45])
    [ ] Human-resource information (required for renewal proposals from academic institutions only)
[ ] References Cited (No page limitation, however, this section must include bibliographic citations only and must not be used to provide parenthetical information outside of the 15-page Project Description. Each reference must be in the specified format.)
[ ] Biographical Sketch(es) (2-page limitation, required for all senior project personnel. The required information must be provided in the order and format specified.)
[ ] Proposal Budget (cumulative and annual)
    [ ] Budget Justification (3-page limitation per proposal)
    [ ] Cost Sharing
        [ ] For proposals submitted in response to the GPG or an NSF program announcement, only the statutory cost sharing amount (1%) is required. In such cases, proposers are advised **NOT** to identify cost sharing amounts on Line M of the proposal budget.

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

[ ]   For proposals submitted in response to solicitations that require cost sharing, proposers are advised not to exceed the cost sharing level or amount specified in the solicitation.

[ ]   Current and Pending Support (required for all senior project personnel)

[ ]   Facilities, Equipment and Other Resources

[ ]   Special Information and Supplementary Documentation (See Chapter II, Section C.2.j for types of information appropriate for submission in this section, as required.)

[ ]   Any additional items specified in a relevant program solicitation

[ ]   Proposal Certifications (submitted by the Authorized Organizational Representative within 5 working days following the electronic submission of the proposal.)

APPENDIX B: POTENTIALLY DISQUALIFYING CONFLICTS OF INTEREST

Unless a waiver has been granted by NSF, a reviewer cannot review a proposal if:

- the reviewer, the reviewer's spouse, minor child, or business partner,

- the organization where the reviewer is employed, has an arrangement for future employment or is negotiating for employment, or

- the organization where the reviewer is an officer, director, trustee, or partner,

has a financial interest in the outcome of the proposal.

Unless a waiver has been granted by NSF, a potential reviewer also may be barred from reviewing a proposal, if it involves individuals with whom he/she has a personal relationship, such as a close relative, current or former collaborator, or former thesis student/advisor.

Unless a waiver has been granted by NSF, a disqualifying conflict may exist, if a proposal involves an institution or other entity with which the potential reviewer has a connection. Such potentially disqualifying connections include:

- a reviewer's recent former employer,

- an organization in which the reviewer is an active participant,

- an institution at which the reviewer is currently enrolled as a student, or at which he/she serves as a visiting committee member, or

- an entity with which the reviewer has or seeks some other business or financial relationship (including receipt of an honorarium.)

APPENDIX C: DRUG-FREE WORKPLACE CERTIFICATION

INSTRUCTIONS FOR CERTIFICATION

1. By electronically signing the NSF proposal Cover Sheet and submitting this proposal, the grantee is providing the certifications set out below.

2. The certification set out below is a material representation of fact upon which reliance was placed when the agency determined to award the grant. If it is later determined that the grantee knowingly rendered a false certification, or otherwise violates the requirements of the Drug-Free Workplace Act, the agency, in addition to any other remedies available to the Federal Government, may take action authorized under the Drug-Free Workplace Act.

3. For grantees other than individuals, Alternate I applies.

4. For grantees who are individuals, Alternate II applies.

CERTIFICATION REGARDING DRUG-FREE WORKPLACE REQUIREMENTS

Alternate I (Grantees Other Than Individuals)

The grantee certifies that it will or will continue to provide a drug-free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;

(b) Establishing an ongoing drug-free awareness program to inform employees about --

   (1) The dangers of drug abuse in the workplace;

   (2) The grantee's policy of maintaining a drug-free workplace;

   (3) Any available drug counseling, rehabilitation and employee assistance programs; and

   (4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a);

(d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will --

   (1) Abide by the terms of the statement; and

   (2) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace, no later than five calendar days after such conviction;

(e) Notifying the agency in writing, within 10 calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction.

   Employers of convicted employees must provide notice, including position title, to every grant officer or other designee on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notice shall include the identification number(s) of each affected grant;

(f)   Taking one of the following actions, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted--

      (1)   Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or

      (2)   Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;

(g)   Making a good faith effort to continue to maintain a drug-free workplace through implementation of paragraphs (a), (b), (c), (d), (e) and (f).

Alternate II (Grantees Who Are Individuals)

(a)   The grantee certifies that, as a condition of the grant, he or she will not engage in the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance in conducting any activity with the grant.

(b)   If convicted of a criminal drug offense resulting from a violation occurring during the conduct of any grant activity, he or she will report the conviction, in writing, within 10 calendar days of the conviction, to every grant officer or other designee, unless the Federal agency designates a central point for the receipt of such notices. When notice is made to such a central point, it shall include the identification number(s) of each affected grant.

(For NSF, grantee notification should be made to the Cost Analysis & Audit Resolution Branch, Division of Institution & Award Support, NSF, Arlington, VA 22230)

APPENDIX D: DEBARMENT AND SUSPENSION CERTIFICATION

INSTRUCTIONS ON CERTIFICATION REGARDING DEBARMENT AND SUSPENSION

1. By electronically signing and submitting this proposal, the prospective primary participant is providing the certification set out below.

2. The inability of a person to provide the certification required below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such person from participation in this transaction.

3. The certification in this clause is any material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

4. The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if at any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

5. The terms covered transaction, debarred, suspended, ineligible, lower tier covered transaction, participant, person, primary covered transaction, principal, proposal, and voluntarily excluded, as used in this clause, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is being submitted for assistance in obtaining a copy of those regulations.

6. The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

7. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transaction", provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions.

8. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.

9. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

10. Except for transactions authorized under paragraph 6 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

CERTIFICATION

(1)   The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals: (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from a covered transaction by any Federal department or agency; (b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property; (c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification; and (d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

(2)   Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall include an explanation with this proposal.

APPENDIX E: LOBBYING CERTIFICATION

INSTRUCTIONS ON CERTIFICATION REGARDING LOBBYING

This certification is required for an award of a Federal contract, grant or cooperative agreement exceeding $100,000 and for an award of a Federal loan or a commitment providing for the United States to insure or guarantee a loan exceeding $150,000. The *Certification for Contracts, Grants, Loans and Cooperative Agreements* also is included in full text on the FastLane submission screen.

CERTIFICATION FOR CONTRACTS, GRANTS, LOANS AND COOPERATIVE AGREEMENTS

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1)   No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2)   If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, and officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form LLL, "Disclosure of Lobbying Activities," in accordance with its instructions.

(3)   The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

APPENDIX F: 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.   (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 of reports.

2.   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.   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.   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.   Undergraduate Student -- a student who is enrolled in a degree program (part-time or full-time) leading to a bachelor's or associate'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 must indicate, in the parentheses provided on the Proposal Budget, 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.

PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

The information requested on proposal forms and project reports is solicited under the authority of the National Science Foundation Act of 1950, as amended. The information on proposal forms will be used in connection with the selection of qualified proposals; and project reports submitted by awardees will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the proposal review process; to proposer institutions/grantees to provide or obtain data regarding the proposal review process, award decisions, or the administration of awards; to government contractors, experts, volunteers and researchers and educators as necessary to complete assigned work; to other government agencies or other entities needing information regarding applicants or nominees as part of a joint application review process, or in order to coordinate programs or policy; and to another Federal agency, court, or party in a court or Federal administrative proceeding if the government is a party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See Systems of Records, NSF-50, "Principal Investigator/Proposal File and Associated Records," 69 Federal Register 26410 (May 12, 2004), and NSF-51, "Reviewer/Proposal File and Associated Records, " 69 Federal Register 26410 (May 12, 2004). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

An agency may not conduct or sponsor, and a person is not required to respond to, an information collection unless it displays a valid OMB control number. The OMB control number for this collection is 3145-0058. Public reporting burden for this collection of information is estimated to average 120 hours per response, including the time for reviewing instructions. Send comments regarding the burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to:

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