



THE NATIONAL SCIENCE FOUNDATION

PROPOSAL AND AWARD
POLICIES
AND
PROCEDURES GUIDE

**Part I - Proposal Preparation &
Submission Guidelines
GPG**

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Grant Proposal Guide

Summary of Significant Changes

Overall Document – Internal and external references and links have been updated as necessary, including a link to the new NSF merit review website. References to the Federal Demonstration Partnership (FDP) Terms and Conditions have been superseded by the Research Terms and Conditions (RTCs). RTCs are applicable to all organizations that are subject to 2CFR Part 215 (OMB Circular A-110). 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 D.1, Letter of Intent, has been supplemented to make it clear that Letters of Intent are not binding on the proposer. The Foundation realizes that changes may need to be made to the information or the plans outlined in the Letter of Intent, should a full proposal be submitted.

Chapter I – Section D.3, Full Proposal, has been clarified to state that proper scholarship and attribution is the responsibility of the authors of the proposal. All parts of the proposal should be prepared with equal care for this concern. Serious failure to adhere to this standard may result in a research misconduct finding. A definition of research misconduct has been added as a footnote.

Chapter I – Section G.4, NSF ID, is an entirely new section which explains that NSF IDs are being issued to PIs and proposers and are replacing the use of Social Security numbers in the NSF systems. The NSF ID is a unique numerical identifier assigned to FastLane users by NSF. The NSF ID will be used throughout FastLane as a login ID and identification verification. References to social security numbers in other parts of the *Grant Proposal Guide* have been replaced with information on the NSF ID.

Chapter II – Section C.1e, Proposal Certifications, has been expanded with regard to Nondiscrimination Certifications. Proposers are advised that these obligations also apply to subrecipients, subgrantees, and subcontractors under the award. Procedures that the proposer should follow to obtain the NSF Nondiscrimination Certification from their subrecipients are then discussed. Exhibit II-6 also has been updated accordingly.

Chapter II – Section C.2d(i), Project Description, has had entirely new guidance added regarding mentoring activities. This was done to address the mentoring requirement of the America COMPETES Act. Each proposal that requests funding to support postdoctoral researchers must include, as a separate section within the 15-page project description, a description of the mentoring activities that will be provided for such individuals. Examples of such activities are provided and the mentoring plan will be evaluated during the merit review process, under the Broader Impacts criterion. Proposals that do not include a separate section on mentoring activities within the Project Description will be returned without review. The Proposal Preparation Checklist (Exhibit II-1) and Chapter IV.B. on Return without Review have been updated to reflect that.

Chapter II – Section C.2g(i), Salaries and Wages, has undergone a major revision of NSF's salary reimbursement policy. In general, the Foundation will now limit salary compensation for senior project personnel to no more than two months of their regular salary in any one year. This limit includes salary compensation received **from all NSF-funded grants**. This change moves away from the concept of summer salary and allows for reimbursement of two months of salary per year whenever appropriate during the year.

Chapter II – Sections D.1 and 2, Grants for Rapid Response Research (RAPID) and EARly-concept Grants for Exploratory Research (EAGER) will replace the Small Grants for Exploratory Research (SGER) program beginning January 5, 2009. RAPID is a funding mechanism to support quick-response research on natural or anthropogenic disasters and similar unanticipated events. Requests may be for up to \$200K and of one year duration. The EAGER mechanism supports high-risk, exploratory and potentially transformative research. Requests may be for up to \$300K and of up to two years duration. RAPID and EAGER proposals are only required to be reviewed internally at NSF; further submission information is contained in these sections.

Chapter II – Section D.7, Proposals Involving Human Subjects, has been updated to reflect that, for projects that will be performed outside of the United States and involve human subjects, evidence of IRB approval is required. If such approval is not provided, NSF may decline to support the project.

Chapter II – Section D.13, Projects Requiring High-Performance Computing Resources, Large Amounts of Data Storage, or Advanced Visualization Resources is an entirely new section of the GPG. For projects that require access to large amounts of computational, data storage or visualization resources in order to complete the work proposed, NSF provides the TeraGrid. It is a collection of very powerful supercomputers, a high-throughput computing environment, high-volume data storage facilities, and advanced visualization services, connected by a high-bandwidth private network. Further information on the TeraGrid and how to access it can be found by referring to this section and the accompanying link.

Exhibit II-7 – Definitions of Categories of Personnel, has had the (co) Principal Investigator definition clarified to state that NSF does not infer any distinction in scientific stature among multiple PIs, whether referred to as PI or co-PI. All of the senior personnel are equally responsible for the conduct of the project and submission of the requisite project reports.

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Chapter I: Pre-Submission Information

A. NSF Proposal Preparation and Submission Mechanisms

The following two electronic mechanisms are available for use by proposers in the preparation and submission of proposals to the NSF:

1. NSF FastLane System. 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 may be used for proposal preparation, file 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>. Proposals submitted via FastLane should be prepared and submitted in accordance with this Guide.

2. Grants.gov. Grants.gov provides a single Government-wide portal for finding and applying for Federal grants online. Proposals submitted via Grants.gov must be prepared and submitted in accordance with the *NSF Grants.gov Application Guide*, available through Grants.gov as well as on the NSF website at: <http://www.nsf.gov/bfa/dias/policy/docs/grantsgovguide.pdf>. The *Grants.gov Application Guide* contains important information on:

- general instructions for submission via Grants.gov, including, the Grants.gov registration process and Grants.gov software requirements;
- NSF-specific instructions for submission via Grants.gov, including creation of PDF files;
- grant application package instructions;
- required SF 424 (R&R) forms and instructions; and
- NSF-specific forms and instructions.

Upon successful insertion of the Grants.gov submitted proposal in the NSF FastLane system, no further interaction with Grants.gov is required. All further interaction is conducted via the NSF FastLane system.

Except where specifically noted in the funding opportunity, all NSF funding opportunities (including program descriptions, announcements and solicitations) will either authorize, or, in some cases require, use of Grants.gov to prepare and submit proposals. In determining whether to utilize Grants.gov or the NSF FastLane system for the electronic preparation and submission of a proposal, proposers should note that all collaborative proposals submitted as separate submissions from multiple organizations must be submitted via FastLane. (See GPG Chapter II.D.4 for additional information on collaborative proposals.)

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

B. NSF Programs and Funding Opportunities

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. For further information about the National Science Foundation, see the *Proposal & Award Policies & Procedures Guide* Introduction Section A, *About the National Science Foundation*.

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, "My NSF" 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. "My NSF" is available on NSF's website at: <http://www.nsf.gov/mynsf/>.

Grants.gov provides an additional electronic capability to search for Federal government-wide grant opportunities. NSF funding opportunities may be accessed via this 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 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/Offices and Divisions. 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 (GPG)*, as well as the National Science Board (NSB) approved merit review criteria. See GPG Chapter III for additional information.

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 NSB approved merit review criteria.

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, and proposals received compete directly with each other for NSF funding. 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;
- 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;¹
- Specifies additional award conditions or reporting requirements;
- Anticipates use of a cooperative agreement; or
- Permits inclusion of the payment of fees to awardees, when appropriate.

D. Types of Submissions

1. Letter of Intent

Some NSF program solicitations require or request submission of a letter of intent (LOI) in advance of submission of a full proposal. A LOI is not binding. 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 LOI is used to help avoid potential conflicts of interest in the review process.

A LOI 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 LOI is not externally evaluated or used to decide on funding. The requirement to submit a LOI will be identified in the program solicitation, and such letters are submitted electronically via the NSF FastLane System.

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 Decisions

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.

¹Unless otherwise specified, the term "organization" refers to all categories of proposers.

b. Encourage/Discourage Decisions

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 scholarship and attribution rests with the 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 misconduct² are discussed in the AAG Chapter VII.C, as well as 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 GPG Chapter II.C.1 for further information regarding submission of single-copy documents.)³

The box for "Proprietary or Privileged Information" must be checked on the 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 GPG Chapter III.G.)

² Research misconduct refers to fabrication, falsification, or plagiarism in proposing or performing research funded by NSF, reviewing research proposals submitted to NSF, or in reporting research results funded by NSF.

³Detailed instructions for submission of proprietary or privileged information is available on the FastLane Website at <http://www.fastlane.nsf.gov/help/proprietary.htm>.

E. Who May Submit Proposals

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.

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.

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 — Universities and two- and four-year colleges (including community colleges) accredited in, and having a campus located in the U.S., acting on behalf of their faculty members. Such organizations also are referred to as academic institutions. Institutions located outside the U.S. fall under paragraph 6. below.

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

3. For-profit organizations — U.S. commercial organizations, especially small businesses with strong capabilities in scientific or engineering research or education. 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 U.S. and U.S. citizens may be eligible for support, provided that the individual is not employed by, or affiliated with, an organization, and:

- the 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 U.S. and foreign organizations, provided support is requested only for the U.S. 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). Under unusual circumstances, other Federal agencies and FFRDCs may submit proposals directly to NSF. A proposed project is only eligible for support if it meets one or more of the following exceptions, as determined by a cognizant NSF Program Officer:

- **Special Projects.** Under exceptional circumstances, research or education projects at other Federal agencies or FFRDCs that can make unique contributions to the needs of researchers elsewhere or to other specific NSF objectives may receive NSF support.
- **National and International Programs.** The Foundation may fund research and logistic support activities of other Government agencies or FFRDCs directed at meeting the goals of special national and international research programs for which the Foundation bears special responsibility, such as the U.S. Antarctic Research Program.
- **International Travel Awards.** In order to ensure appropriate representation or availability of a particular expertise at an international conference, staff researchers of other Federal agencies may receive NSF international travel awards.

Proposers who think their project may meet one of the exceptions listed above should contact a cognizant NSF Program Officer before preparing a proposal for submission. In addition, a scientist, engineer or educator who has a joint appointment with a university and a Federal agency (such as a Veterans Administration Hospital, or with a university and 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. 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 GPG Chapter I.H for further information). 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:

1. **Target Dates:** dates after which proposals will still be accepted, although they may miss a particular panel or committee meeting.
2. **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 may be authorized only in accordance with GPG Chapter II.A.

Special Exceptions to NSF's Deadline Date Policy

In the event of a natural or anthropogenic disaster that interferes with an organization's ability to meet a proposal submission deadline, NSF has developed the following guidelines for use by impacted organizations.

Flexibility in meeting announced deadline dates because of a natural or anthropogenic disasters may be granted with the **prior approval** of the cognizant NSF Program Officer. Proposers should contact the cognizant NSF Program Officer in the Division/Office to which they intend to submit their proposal and request authorization to submit a "late proposal." Such contact should be via e-mail (or telephone, if e-mail is unavailable). Proposers should then follow the written or verbal guidance provided by the cognizant NSF Program Officer. Generally, NSF permits extension of the deadline by 5 business days. The Foundation, however, will work with each impacted organization on a case-by-case basis to address their specific issue(s).

3. **Submission Windows:** designated periods of time during which proposals will be accepted for review by NSF. It is NSF's policy that the end date of a submission window converts to, and is subject to, 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 pubs@nsf.gov or electronically through the NSF website.⁴ 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.⁵

G. How to Submit Proposals

1. Electronic Requirements

Proposals to NSF must be submitted electronically via either the NSF FastLane System or Grants.gov. Those programs that require electronic submission via Grants.gov⁶ will be so noted in the applicable NSF funding opportunity. For proposers who cannot submit electronically, an authorization to deviate from the electronic submission requirements must be approved in advance of submission of the paper proposal in accordance with GPG Chapter II.A.

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 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 electronic message at the time of FastLane submission and will depend on the NSF Division/Office 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/proposal cannot be funded twice. If the proposer envisions review by multiple programs, more than one program may be designated on the 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 GPG Chapter IV.B for further information.)

Research proposals to the Biological Sciences Directorate ONLY (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) or co-principal investigator

⁴A listing of upcoming target dates and deadlines, sorted by date and by program area is available electronically on the NSF Website at: http://nsf.gov/funding/pgm_list.jsp?org=NSF&ord=date.

⁵ Letters of intent or preliminary proposals, unless otherwise specified, also follow the 5 p.m. submitter's local time standard.

⁶ Proposals using Grants.gov should be prepared in accordance with the NSF *Grants.gov Application Guide*.

⁷Detailed 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 under Technical FAQs at <http://www.fastlane.nsf.gov/help/color.htm>.

(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 Cover Sheet.

In submission of a proposal for funding, the Authorized Organizational Representative (AOR) is required to provide certain proposal certifications. (See GPG Chapter II.C.1e for a 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.⁸

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

3. Registering in the Central Contractor Registration

The *Federal Funding Accountability and Transparency Act* (FFATA) of 2006 (P.L. 109-282) requires agencies to make award and subaward information available for search by the public. Agencies must make award data available beginning January 1, 2008 and subaward data available beginning January 1, 2009. FFATA specifies requisite information that must be included for each award and subaward, one of which is the unique identifier for the entity. OMB Memorandum, "Reporting of Data Elements Required by the Federal Funding Accountability and Transparency Act," (dated March 30, 2007) defines the unique identifier for the entity as the Data Universal Numbering System (DUNS) number. In accordance with OMB policy, NSF collects DUNS numbers for all awardees.

In order to meet the legislative mandate and Congressional intent of FFATA, NSF must be able to validate the accuracy of the DUNS number provided by the organization. NSF has identified the Central Contractor Registration (CCR) database as the most complete and accurate data source. CCR is the primary registrant database for the U.S. Government. CCR collects, validates, stores, and disseminates data in support of agency acquisition missions, including Federal agency contract and assistance awards.

Any organization that registers with the CCR must have a valid DUNS number. To ensure each organization receiving an NSF award and/or subaward has a valid DUNS number, potential proposers must register in the CCR prior to proposal submission. To register in the CCR, go to <http://www.ccr.gov>. Proposers are advised that it takes approximately two business days to complete the registration process. Failure to complete the CCR registration process prior to proposal submission may impact the processing of your proposal.

4. NSF ID

The NSF ID is a unique numerical identifier assigned to FastLane users by NSF. It is a random nine-digit number beginning with three zeroes. (Note: actual Social Security Numbers (SSNs) do not begin with three zeros.) The NSF ID will be used throughout FastLane as a login ID and identification verification.

SSN submission will only be requested where it is necessary for business purposes, e.g., financial reimbursement. SSN is solicited under NSF Act of 1950, as amended.

5. 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.

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

⁸Further instructions for this process are available on the FastLane Website.

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 GPG 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/office 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.

Chapter II: Proposal Preparation Instructions

Each proposing organization that is new to NSF or 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 applicable award making division within BFA. The requisite information is described in the *NSF Prospective New Awardee Guide*. The information contained in this Guide will assist the organization in preparing documents which 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.⁹

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 an authorization to deviate from standard proposal preparation requirements has been approved. NSF may return without review proposals that are not consistent with these instructions. See GPG 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 approvals to deviate from NSF proposal preparation instructions may cover 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 include an authorization to deviate from standard NSF proposal preparation instructions has been received in one of the following ways, as appropriate: (a) by identifying the solicitation number that authorized the deviation in the appropriate block on the Cover Sheet; or (b) for individual deviations, by identifying the name, date and title of the NSF official authorizing the deviation.¹⁰ 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. GPG Exhibit II-1 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 prior to upload to the electronic system.

2. Proposal Margin and Spacing Requirements

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

⁹FAQs regarding FastLane proposal preparation and submission also are available electronically on the FastLane Website.

¹⁰Requests for approval of a deviation from NSF's electronic submission requirement (including both FastLane and Grants.gov) must be forwarded to the cognizant NSF program for review and approval prior to submission of the paper proposal.

- a. Use one of the following typefaces identified below:
 - Arial¹¹, Courier New, or Palatino Linotype at a font size of 10 points or larger
 - Times New Roman at a font size of 11 points or larger
 - Computer Modern family of fonts at a font size of 11 points or larger

A font size of less than 10 points may be used for mathematical formulas or equations, figure, table or diagram captions and when using a Symbol font to insert Greek letters or special characters. PIs are cautioned, however, that the text must still be readable;

- b. No more than 6 lines of text within a vertical space of 1 inch; and
- c. Margins, in all directions, must be at least an inch.

These requirements apply to all uploaded sections of a proposal, including supplementary documentation.

3. Page Formatting

Since many reviewers will be reviewing proposals electronically, proposers are strongly encouraged to use only a standard, single-column format for the text. Avoid using a two-column format since it can cause difficulties when reviewing the document electronically.

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 function¹²), 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.

¹¹ In addition to the typefaces identified above, Macintosh users also may use Helvetica and Palatino typefaces.

¹² Further instructions for this process are available electronically on the FastLane Website.

b. Authorization to Deviate from NSF Proposal Preparation Requirements (if applicable)

Instructions for obtaining authorization to deviate from NSF proposal preparation instructions are provided in GPG Chapter II.A.

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 Exhibit II-2 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.

d. Proprietary or Privileged Information (if applicable)

Instructions for submission of proprietary or privileged information are provided in GPG Chapter I.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.¹³

The required proposal certifications are as follows:

- **Certification for Authorized Organizational Representative or Individual Proposer:** 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 institution¹⁴ has implemented and is enforcing a written policy on conflicts of interest, consistent with the provisions of AAG Chapter IV.A.; 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 GPG Exhibit II-3 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 GPG Exhibit II-4 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

¹³Detailed instructions for completion of this process are available electronically on the FastLane Website.

¹⁴For 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.

GPG Exhibit II-5. The box for "Disclosure of Lobbying Activities" must be checked on the Cover Sheet only if, pursuant to paragraph 2 of the certification, submission of the SF LLL is required.¹⁵

- **Certification Regarding Nondiscrimination:** The AOR is required to complete a certification regarding compliance with NSF Nondiscrimination regulations and policies. See GPG Exhibit II-6 for the full text of the Nondiscrimination Certification. This certification sets forth the nondiscrimination obligations with which all grantees must comply. These obligations also apply to subrecipients, subgrantees, and subcontractors under the award. The proposer, therefore, shall obtain the NSF Nondiscrimination Certification from each organization that applies to be, or serves as a subrecipient, subgrantee or subcontractor under the award (for other than the provision of commercially available supplies, materials, equipment or general support services) prior to entering into the subaward arrangement.
- **Certification Regarding Flood Hazard Insurance:** Two sections of the National Flood Insurance Act of 1968 (42 USC §4012a and §4106) bar Federal agencies from giving financial assistance for acquisition or construction purposes in any area identified by the Federal Emergency Management Agency (FEMA) as having special flood hazards unless the:
 - (1) community in which that area is located participates in the national flood insurance program; and
 - (2) building (and any related equipment) is covered by adequate flood insurance.

By electronically signing the Cover Sheet, AORs for prospective grantees located in FEMA-designated special flood hazard areas are certifying that adequate flood insurance has been or will be obtained in the following situations:

- (1) for NSF grants for the construction of a building or facility, regardless of the dollar amount of the grant; and
- (2) for other NSF grants when more than \$25,000 has been budgeted in the proposal for repair, alteration or improvement (construction) of a building or facility.¹⁶

Prospective grantees should contact their local government or a federally-insured financial institution to determine what areas are identified as having special flood hazards and the availability of flood insurance in their community.

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

There are four major components of the Cover Sheet. A number of the boxes contained on the Cover Sheet are electronically prefilled as part of the FastLane login process. The information requested on the Cover Sheet is as follows:

- (1) Awardee and Performing/Research Organization:

This information is pre-filled on the Cover Sheet based on the login information entered.

- (2) Program Announcement/Solicitation/Description Number:

¹⁵Detailed instructions for submission of the SF LLL are available on the FastLane Website.

¹⁶ See Grant General Conditions (GC-1) Article 11 for additional information.

¹⁷Requests 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.

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 description, proposers should select "Grant Proposal Guide." Compliance with this requirement is critical in determining the relevant proposal processing guidelines.

Proposals submitted with "Grant Proposal Guide" selected that are directed to Division/Program combinations with active program descriptions will default to the nearest target date for that program. 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).

(3) NSF Unit of Consideration:

Proposers must follow instructions for selection of an applicable NSF Division/Office and Program(s) to which the proposal should be directed.

(4) Remainder of the Cover Sheet:

(a) Title of Proposed Project

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.

(b) Budget and Duration Information

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 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.

(c) PI Information and co-PI Information

Information (including address information) regarding the PI is derived from login information and is not entered when preparing the Cover Sheet. The proposal also may identify up to four additional co-Principal Investigators.

Each individual's name and either NSF ID or primary registered e-mail address, must be entered in the boxes provided.

(d) Previous NSF Award

If the proposal is a renewal proposal, or an accomplishment-based renewal proposal, the applicable box must be checked. If yes, the proposer will be requested to select the applicable previous award number.

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:

(i) 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 Cover Sheet;

(ii) 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.

(e) Other Federal Agencies

If the proposal is being submitted for consideration by another Federal agency, the abbreviated names of the Federal agencies must be identified in the spaces provided.

(f) Awardee Organization Information

The awardee organization name, address, DUNS number and Employer Identification Number/Taxpayer Identification Number are derived from the login information and are not entered when preparing the Cover Sheet via FastLane.

Profit making organizations must identify their status by checking the appropriate boxes on the Cover Sheet, using the following guidelines:

- 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.
- 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.
- 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.

(g) Performing/Research Organization

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

(h) Other Information

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

- Beginning Investigator (See GPG I.G.2)
- Disclosure of Lobbying Activities (See GPG II.C.1e)
- Proprietary or Privileged Information (See GPG I.D.3 & II.C.1d)
- Historic Places (See GPG II.C.2j)
- Rapid Response Grants (See GPG II.D.1)
- EARly-concept Grants for Exploratory Research (EAGER) (See GPG II.D.2)
- Vertebrate Animals¹⁸ (See GPG II.D.6)

¹⁸ If the proposal includes use of Vertebrate Animals, supplemental information is required. See GPG Chapter II.D.6 for additional information.

- Human Subjects¹⁹ (See GPG II.D.7)
- High Resolution Graphics/Other Graphics Where Exact Color Representation is Required for Proper Interpretation (See GPG I.G.1)
- International Cooperative Activities Country Name(s) (See GPG II.C.2j)

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):

- the intellectual merit of the proposed activity; and
- the broader impacts resulting from the proposed activity.

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 GPG 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.

Each proposal that requests funding to support postdoctoral researchers must include, as a separate section within the 15-page Project Description, a description of the mentoring activities that will be provided for such individuals. Examples of mentoring activities include, but are not limited to: career counseling; training in

¹⁹ If the proposal includes use of Human Subjects, supplemental information is required. See GPG Chapter II.D.7 for additional information.

preparation of grant proposals, publications and presentations; guidance on ways to improve teaching and mentoring skills; guidance on how to effectively collaborate with researchers from diverse backgrounds and disciplinary areas; and training in responsible professional practices. The proposed mentoring activities will be evaluated as part of the merit review process under the Foundation's broader impacts merit review criterion. Proposals that do not include a separate section on mentoring activities within the Project Description will be returned without review.

(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. (GPG Chapter II.A 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;
- (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 GPG Chapter II.D.4.

(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. (GPG Chapter II.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 GPG Chapter V 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.²⁰ 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 GPG Exhibit II-7 for the definitions of Senior Personnel.) The following information must be provided in the order and format specified below.

Do not submit personal information such as **home** address; **home** telephone, fax, or cell phone numbers; **home** e-mail address; date of birth; citizenship; drivers’ license numbers; marital status; personal hobbies; and the like. Such personal information is irrelevant to the merits of the proposal. If such information is included, NSF will make every effort to prevent unauthorized access to such material, but the Foundation is not responsible or in any way liable for the release of such material. (See also GPG Chapter III.G).

(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

²⁰If 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.

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.

(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 the 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 Advisors and Postdoctoral Sponsors.** 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 Exhibit II-2 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. The amounts requested for each budget line item should be documented and justified in the budget justification as specified below. The budget justification should be no more than three pages.

The proposal may request funds under any of the categories listed so long as the item and amount are considered necessary, reasonable, allocable, and allowable under the applicable cost principles, NSF policy, and/or the program solicitation. Amounts and expenses budgeted also must be consistent with the proposing organization's policies and procedures and cost accounting practices used in accumulating and reporting costs.

A discussion of the budget and the allowability of selected items of cost is contained in both the GPG (from a budget preparation perspective) and in the Award & Administration Guide (AAG) (from an allowability and administration perspective), as well as NSF program solicitations. In preparation of the budget, however, proposers are encouraged to consult the AAG to determine whether a certain category of cost is allowable under an NSF award.

Cost principles governing the allowability of costs are contained in OMB Circulars A-21 (Colleges & Universities), A-87 (State, Local, & Indian Tribal Governments), and A-122 (Non-Profit Organizations) and are available at <http://www.whitehouse.gov/omb/circulars/index.html>. Cost Principles applicable to for-profit organizations can be found in the Federal Acquisition Regulations (FAR), Part 31.

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

(a) Senior Project Personnel Salaries & Wages Policy

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.

As a general policy, NSF limits salary compensation for senior project personnel to no more than two months of their regular salary in any one year. This limit includes salary compensation received **from all NSF-funded grants**. This effort must be documented in accordance with the applicable cost principles. If anticipated, any compensation for such personnel in excess of two months must be disclosed in the proposal budget, justified in the budget justification, and must be specifically approved by NSF in the award notice.

These same general principles apply to other types of non-academic organizations.

NSF award funds may not be used to augment the total salary or salary rate 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 programs, e.g., science and engineering education programs for weekend and evening classes, or work at remote locations. If anticipated, any intent to provide salary compensation above the base salary must be disclosed in the proposal budget, justified in the budget justification, and must be specifically approved by NSF in the award notice.

(b) Administrative and Clerical Salaries & Wages Policy

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 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. See OMB Circular A-21 (CFR Part 220), for examples of where direct charging of administrative salaries may be appropriate.

Additional information on the charging of salaries and wages to an NSF award is available in AAG Chapter V.B.1.

(c) Procedures

The names of the PI(s), faculty, and other senior personnel and the estimated number of full-time-equivalent person-months for which NSF funding is requested and the total amount of salaries requested 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 requested 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 requested 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.

(d) 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 GPG Chapter I.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 Cover Sheet when the proposal contains confidential budgetary information.²¹

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

If the proposer's usual accounting practices provide that its contributions to employee benefits (social security, retirement, other payroll-related taxes and time off including vacation, sick, and other leave, etc.) be treated as direct costs, NSF grant funds may be requested to fund fringe benefits as a direct cost. These are typically determined by application of a calculated fringe benefit rate for a particular class of employee (full time or part-time) applied to the salaries and wages requested. Although, they also may be paid based on actual costs for individual employees, if that institutional policy has been approved by the cognizant federal agency.

(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. It is important to note that the acquisition cost of equipment includes modifications, attachments, and accessories necessary to make the property usable for the purpose for which it was purchased. Items of needed equipment must be adequately justified, listed individually by description and estimated cost.

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 and office furnishings, are not eligible for support unless primarily or exclusively used in the actual conduct of scientific research.

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

Additional information on the charging of equipment to an NSF award is available in AAG Chapter V.B.2.

(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 be necessary to accomplish proposal objectives, or disseminate its results.

Allowance for air travel normally will not exceed the cost of round-trip, economy airfares. Persons traveling under NSF grants must travel by U.S.-Flag Air carriers, if available.²²

Additional information on charging travel costs to an NSF award is available in AAG Chapter V.B.4.

(b) Domestic Travel

For budget preparation purposes, domestic travel includes travel in the U.S., 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 GPG Chapter II.D.8) For some educational projects conducted at local school districts, however, the participants being trained are employees. In such cases, the costs must be classified as participant support if payment is made through a stipend or training allowance method. The school district must have an accounting mechanism in place (i.e., sub-account code) to differentiate between regular salary and stipend payments.

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.

Additional information on charging participant support costs to an NSF award is available in AAG Chapter V.B.8.

²² See also the NSF Grant General Conditions (GC-1), Article 10, for additional information on use of U.S.-Flag Air Carriers.

²³ Proposers are advised GC-1, Article 7, requires 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 proposed to an NSF grant must be allowable, 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 allocable to the project being supported by NSF.

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

The proposal budget justification should indicate the general types of expendable materials and supplies required. Materials and supplies are defined as tangible personal property, other than equipment, costing less than \$5,000, or other lower threshold consistent with the policy established by the proposing organization. Cost estimates must be included for items that represent a substantial amount of the proposed line item cost.

(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.

Additional information on charging publication/documentation/dissemination costs to an NSF award is available in AAG Chapter V.B.7.

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

Anticipated 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, may be included. If requested, the proposer must be able to justify that the proposed rate of pay is reasonable.²⁴

Additional information on charging consultant costs to an NSF award is available in AAG Chapter V.B.6.

(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 only where it is institutional policy to charge such costs as direct charges. A justification based on the established computer service rates at the proposing organization must be included. The proposal budget also may request costs for leasing of computer equipment. General purpose (word processing, spreadsheets, communication) computer equipment should not be requested. Special purpose or scientific use computers or associated hardware and software, however, may be requested as items of equipment when necessary to accomplish the project objectives and not otherwise reasonably available.

Additional information on charging computer services to an NSF award is available in AAG Chapter V.B.5.

²⁴ For all funds awarded prior to March 15, 2006, payment for a consultant's services may not exceed the daily equivalent of the then current maximum rate paid to an Executive Schedule Level IV Federal employee (exclusive of indirect cost, travel, per diem, clerical services, fringe benefits and supplies).

(e) Subawards²⁵ (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, and a separate budget should be provided for each subawardee, if already identified, along with a description of the work to be performed. Otherwise, the disclosure should include a clear description of the work to be performed, and the basis for selection of the subawardee (except for collaborative/joint arrangements).

(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 detailed in the budget justification.²⁶

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

The total amount of direct costs requested in the budget, 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 negotiating agency must be used in computing indirect costs (F&A) for a proposal. The amount for indirect costs should be calculated by applying the current negotiated indirect cost rate(s) to the approved base(s). Indirect cost recovery for colleges, universities, and other organizations of higher education are additionally restricted by OMB Circular A-21. The Circular stipulates in section G.7.a. that Federal agencies are required to use the negotiated F&A rates that are in effect at the time of the initial award throughout the life of the sponsored agreement. Additional information on the charging of indirect costs to an NSF award is available in AAG Chapter V.D.

For proposing organizations that do not have a current negotiated rate agreement with a cognizant Federal agency, its business officer should prepare an indirect cost proposal based on expenditures for its most recently ended fiscal year. If the proposal is recommended for funding, the proposing organization will be required to provide its indirect cost proposal to support the budgeted indirect rate. The contents and financial data included in indirect cost proposals vary according to the make-up of the proposing organization. A sample indirect cost proposal is available at: <http://www.nsf.gov/bfa/dias/caar/indirect.htm>. Proposing organizations submitting a proposal to NSF for the first time are encouraged to request guidance from the Cost Analysis & Audit Resolution Branch of NSF's Division of Institution & Award Support at (703) 292-8244.

Within Government guidelines, 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. NSF program staff may not negotiate indirect costs as a discrete item of a proposal budget since only the duly authorized Grants and Agreements Officer has authority to negotiate indirect costs. NSF program staff are not authorized to suggest or request that PI/PDs seek reductions or waivers of indirect costs except as explicitly specified in applicable NSF program solicitations.

²⁵The term "subaward" also includes contracts, subcontracts and other arrangements.

²⁶ See AAG Chapter V.C.4 for specific instructions and requirements regarding the allowability of relocation costs under NSF awards.

Exceptions to Basic Policy

No Indirect or Limited Reimbursement. In some cases, however, NSF program solicitations may indicate no or limited reimbursement for indirect costs. In addition, NSF generally provides no amounts for indirect costs for the following:

- grants to individuals;
- grants solely for the support of travel, equipment, construction of facilities, or doctoral dissertation research;
- grants in which NSF support is exclusively in the form of fellowships, traineeships or other fixed amounts such as cost-of-education allowances;
- participant support costs. However, an allowance for indirect costs associated with participant support costs may be established or negotiated in advance when circumstances indicate that the grantee could be expected to incur significant expenses in administering participant payments (other than salary or other direct expenses being reimbursed under the award). or,
- foreign grantees (unless the foreign grantee has a previously negotiated rate agreement with a U.S. Federal agency that has a practice of negotiating rates with foreign entities).

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

The total amount of funds requested by the proposer should be the same as the amount entered on Line J. If disapproved, Line L will be equal to Line J minus Line K.

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

Since issuance of the NSF Cost Sharing Policy in 1999, the Foundation's cost sharing policy has continued to be an issue widely discussed by the community, as well as within NSF and the National Science Board (NSB). Cost sharing was most recently discussed formally at the NSB's 382nd meeting on October 13-14, 2004, when the Board approved a revision to the Foundation's policy on cost sharing to eliminate NSF program-specific cost sharing requirements.

In implementation of the Board's policy, there is no expectation by the Foundation that proposals submitted for funding will include a cost sharing component. When cost sharing is included on Line M, it is solely at the discretion of the proposing institution and will not be a factor in the Foundation's decision to make an award. However, once cost sharing is proposed on Line M, and accepted by the Foundation, the commitment of funds becomes legally binding and is subject to audit.²⁷

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.

(xii) Unallowable Costs

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

²⁷ If proposed, 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. 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. Travel, meal and hotel expenses of grantee employees who are not on travel status are unallowable. Costs of employees on travel status are limited to those allowed under the governing cost principles for travel expenses.

(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.

Additional information on charging certain types of costs generally associated with meetings and conferences to NSF awards is available in AAG Chapter V.C.5.

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 GPG Chapter I.G.2.

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. (See AAG Chapter V.D.1)
- Documentation of collaborative arrangements of significance to the proposal through letters of commitment. (See GPG Chapter II.C.2.d.(iv))

- The National Environmental Policy Act of 1969 (NEPA) (42 USC §4332). NEPA requires that Federal agencies consider the environmental impacts of major Federal actions significantly affecting the quality of the human environment. If a proposed project might have an environmental impact, the proposal should furnish sufficient information to assist Foundation officials in assessing the environmental consequences of supporting the project. NSF will determine:
 1. the adequacy of the information submitted;
 2. whether or not additional information is needed; and
 3. whether or not an environmental assessment or environmental impact statement will be necessary.
- 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. (See AAG Chapter VI.B.4 and VI.G.3 and the Research Terms and Conditions, NSF Agency Specific Requirements Article 26, and NSF Grant General Conditions Article 39.)
- Research in Greenland. (See AAG Chapter VI.G.3)
- 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 the Antarctic Research solicitation. Special budget considerations also apply. See also Chapter V.B, of the Antarctic Research solicitation.
- Research in a location designated, or eligible to be designated, a registered historic place. (See AAG Chapter VI.K). Where applicable, the box for “Historic Places” must be checked on the Cover Sheet.
- Research involving field experiments with genetically engineered organisms. (See AAG Chapter VI.B.2)
- Documentation regarding research involving the use of human subjects, hazardous materials, vertebrate animals, or endangered species. (See AAG Chapter VI.B and GPG Chapter II.D.5 and II.D.6).
- Projects that involve technology utilization/transfer activities, that require a management plan, or that involve special reports or final products. Please note that some program solicitations provide specific guidance on preparation and inclusion of management plans in proposals submitted to NSF.
- Special components in new proposals or in requests for supplements, such as *Facilitation Awards for Scientists and Engineers with Disabilities (FASSED)*, *Research Opportunity Awards (ROAs)* or *Research Experiences for Undergraduates (REUs)*. (See GPG Chapter II.D.3 for information on FASSED, and for the other programs identified, consult the relevant program solicitation.)
- *Research in Undergraduate Institutions*. (See RUI program solicitation for information.)
- *Research Experiences for Undergraduates*. (See the REU program solicitation for 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.

Proposers are reminded that, unless required by a specific program solicitation, letters of support should not be submitted as they are not a standard component of an NSF proposal, and, if included, a reviewer is under no obligation to review these materials. Letters of support submitted in response to a program solicitation

requirement must be unique to the specific proposal submitted and cannot be altered without the author's explicit prior approval. NSF may return without review proposals that are not consistent with these instructions.

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.** GPG Chapter II.A contains further information.

D. Special Guidelines

1. Grants for Rapid Response Research (RAPID)

The RAPID funding mechanism is used for proposals 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. PI(s) must contact the NSF program officer(s) whose expertise is most germane to the proposal topic before submitting a RAPID proposal. This will facilitate determining whether the proposed work is appropriate for RAPID funding.

- The Project Description is expected to be brief (two to five pages) and include clear statements as to why the proposed research is of an urgent nature and why a RAPID award would be the most appropriate mechanism for supporting the proposed work. Note this proposal preparation instruction deviates from the standard proposal preparation instructions contained in this Guide; RAPID proposals must otherwise be compliant with the GPG.
- The box for "RAPID" must be checked on the Cover Sheet.
- Only internal merit review is required for RAPID proposals. Under rare circumstances, program officers may elect to obtain external reviews to inform their decision. If external review is to be obtained, then the PI will be so informed in the interest of maintaining the transparency of the review and recommendation process. The two standard NSF-approved merit review criteria will apply.
- Requests may be for up to \$200K and of one year duration. The award size, however, will be consistent with the project scope and of a size comparable to grants in similar areas.
- No-cost extensions, and requests for supplemental funding, will be processed in accordance with standard NSF policies and procedures.
- Renewed funding of RAPID awards may be requested only through submission of a proposal that will be subject to full external merit review. Such proposals would be designated as "RAPID renewals."

Proposers may begin submitting to the RAPID mechanism January 5, 2009.

2. EARly-concept Grants for Exploratory Research (EAGER)

The EAGER funding mechanism may be used to support exploratory work in its early stages on untested, but potentially transformative, research ideas or approaches. This work may be considered especially "high risk-high payoff" in the sense that it, for example, involves radically different approaches, applies new expertise, or engages novel disciplinary or interdisciplinary perspectives. These exploratory proposals may also be submitted directly to an NSF program, but the EAGER mechanism should not be used for projects that are appropriate for submission as "regular" (i.e., non-EAGER) NSF proposals. PI(s) must contact the NSF program officer(s) whose expertise is most germane to the proposal topic prior to submission of an EAGER proposal. This will aid in determining the appropriateness of the work for consideration under the EAGER mechanism; this suitability must be assessed early in the process.

- The Project Description is expected to be brief (five to eight pages) and include clear statements as to why this project is appropriate for EAGER funding, including why it does not "fit" into existing programs and why it is a "good fit" for EAGER. Note this proposal preparation instruction deviates from the

standard proposal preparation instructions contained in this Guide; EAGER proposals must otherwise be compliant with the GPG.

- The box for “EAGER” must be checked on the Cover Sheet.
- Only internal merit review is required for EAGER proposals. Under rare circumstances, program officers may elect to obtain external reviews to inform their decision. If external review is to be obtained, then the PI will be so informed in the interest of maintaining the transparency of the review and recommendation process. The two standard NSB-approved merit review criteria will apply.
- Requests may be for up to \$300K and of up to two years duration. The award size, however, will be consistent with the project scope and of a size comparable to grants in similar areas.
- No-cost extensions, and requests for supplemental funding, will be processed in accordance with standard NSF policies and procedures.
- Renewed funding of EAGER awards may be requested only through submission of a proposal that will be subject to full external merit review. Such proposals would be designated as “EAGER renewals.”

Proposers may begin submitting to the EAGER mechanism January 5, 2009.

3. Facilitation Awards for Scientists and Engineers with Disabilities (FASSED)

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 applicable general terms and conditions²⁸, 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.

4. 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. Please note, however, that if awarded, a single award would be made to the submitting organization, with any collaborators listed as subawards.

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

b. Submission of a collaborative proposal from multiple organizations²⁹

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 Cover Sheet, Project Summary,

²⁸ The Research Terms and Conditions and the Grant General Conditions are available on the NSF website at: <http://www.nsf.gov/bfa/dias/policy/rtc/index.jsp>, and http://www.nsf.gov/awards/managing/general_conditions.jsp, respectively.

²⁹ Separately submitted collaborative proposals must be submitted via FastLane as Grants.gov does not currently support this type of functionality.

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:³⁰

- (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 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.

5. 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.

Instrumentation and equipment proposals must follow the standard proposal preparation guidelines contained in this Guide. 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 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;
- 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

³⁰Detailed instructions for the electronic preparation and submission of collaborative proposals are available on the FastLane website at https://www.fastlane.nsf.gov/NSFHelp/flashhelp/fastlane/FastLane_Help/fastlane_help.htm#proposal_functions_introduction.htm.

- brief description of other support services available and the annual budget for their operation, maintenance and administration.

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.³¹

6. Proposals Involving Vertebrate Animals

a. Any project proposing **use of vertebrate animals for research or education** shall comply with the Animal Welfare Act [7 U.S.C. 2131 et seq.] and the regulations promulgated thereunder by the Secretary of Agriculture [9 CFR 1.1-4.11] pertaining to the humane care, handling, and treatment of vertebrate animals held or used for research, teaching or other activities supported by Federal awards. In accordance with these requirements, proposed projects involving use of any vertebrate animal for research or education must 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 Public Health Service (PHS) Approved Assurance.

b. 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.

c. Research facilities subject to the Animal Welfare Act using or intending to use live animals in research and who receive Federal funding are required to register the facility with the Animal and Plant Health Inspection Service (APHIS), U.S. Department of Agriculture. A current listing of licensed animal dealers may also be obtained from APHIS. The location of the nearest APHIS Regional Office, as well as information concerning this and other APHIS activities may be obtained at <http://www.aphis.usda.gov/>.

d. Projects involving the care or use of vertebrate animals at a foreign organization or foreign field site also require approval of research protocols by the U.S. grantee's IACUC. If the project is to be funded through an award to a foreign organization or through an individual fellowship award that will support activities at a foreign organization, NSF will require a statement of compliance that the activities will be conducted in accordance with all applicable laws in the foreign country and that the *International Guiding Principles for Biomedical Research Involving Animals* (see <http://www.cioms.ch/>) will be followed.

e. The following information regarding the organization's intention to utilize vertebrate animals as part of the project should be provided on the NSF Cover Sheet:

(1) The box for "Vertebrate Animals" must be checked on the Cover Sheet if use of vertebrate animals is envisioned.

(2) The IACUC approval date (if obtained) must be 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.

(3) If a date is provided, the PHS Approved Animal Welfare Assurance Number must be entered in the space provided.

f. These same requirements apply to awards to individuals (fellowships) for activities that involve use of vertebrate animals. If an IACUC approval date is entered on the Cover Sheet, a copy of the approval letter from the IACUC with Assurance Number and organizational signature should be included in the Supplementary Documentation section of the proposal or sent directly to the cognizant program.

See also AAG Chapter VI.B.3 for additional information on the administration of awards that utilize vertebrate animals.

³¹See AAG Chapter IV.D for additional information on the administration of equipment awards.

7. Proposals Involving Human Subjects

a. 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 has declared the research exempt from IRB review, in accordance with the applicable subsection, as established in section 101(b) of the Common Rule.

If the project involves human subjects and is to be performed outside of the U.S., evidence of IRB approval also is required. If there is no IRB approval provided, and the foreign country is not included in the 2008 HHS OHRP International Compilation of Human Research Protections (<http://www.hhs.gov/ohrp/international/HSPCompilation.pdf>), nor is an Assurance on file with OHRP (<http://ohrp.cit.nih.gov/search/asearch.asp#ASUR>), NSF may decline to support the project.

b. The following information regarding the organization's intention to utilize human subjects as part of the project should be provided on the NSF Cover Sheet:

- (1) The box for "Human Subjects" must be checked on the Cover Sheet if use of human subjects is envisioned.
- (2) If human subject activities are exempt from IRB review, provide the exemption number(s) corresponding to one or more of the exemption categories. The six categories of research that qualify for exemption from coverage by the regulations are defined in the Common Rule for Protection of Human Subjects.
- (3) If the research is not designated as exempt, the IRB approval date should be identified in the space provided. This date, at minimum, should cover the period at which the project is initiated. If IRB approval has not been obtained prior to submission, the proposer should indicate "Pending" in the space provided for the approval date.
- (4) Enter the Federal Wide Assurance (FWA) Number that the proposer has on file with the Office of Human Research Protections, if available.

See also AAG Chapter VI.B.1 for additional information on the administration of awards that utilize human subjects.

8. 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 U.S. 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 proposal³² (that complies with the page and font size instructions in GPG Chapter II.B) must contain the elements identified below. Note the proposal preparation instructions for these types of proposals deviate from the standard proposal preparation instructions contained in this Guide.

³² Costs associated with conferences, symposia, workshops or other meetings supported by an NSF grant must be specifically and clearly identified in the proposed scope of work and budget, and approved by NSF. Additional information on the charging of conference, symposia and workshops is contained in the AAG Chapter V.C.5.

- 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 GPG Chapter II.C.2g(v); and
- The support requested or available from other Federal agencies and other sources. (GPG Chapter II.C.2h 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 AAG Chapter V.C.5.

9. Proposals to Support International Travel

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

Group travel awards are encouraged as the primary means of support for international travel. A university, professional society or other non-profit organization may apply for funds to enable it to coordinate and support U.S. participation in one or more international scientific meeting(s) abroad. 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 AAG Chapter VI.G.5)

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.

10. 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. Deadlines for these programs vary by Directorate. Consult the NSF website for additional information.

11. Support for Development of NSF Centers

NSF provides support for a variety of individual Centers and Centers programs that contribute to the Foundation's vision as outlined in the NSF Strategic Plan. Centers exploit opportunities in science, engineering and technology in which the complexity of the research problem(s) or the resources needed to solve the problem(s) require the advantages of scope, scale, change, duration, equipment, facilities, and students that can only be provided by an academic research center. They focus on investigations at the frontiers of knowledge not normally attainable through individual investigations, at the interfaces of disciplines and/or by incorporating fresh approaches to the core of disciplines. Centers focus on integrative learning and discovery and demonstrate leadership in broadening participation through focused investments in a diverse set of partner institutions and individuals. In doing so, they draw upon, and contribute to, the development of the Nation's full intellectual talent. Most Center awards are limited to a maximum duration of ten years and are often subject to mid-course external merit review. Proposers interested in learning more about current or future NSF Centers are encouraged to contact the appropriate disciplinary Program Officer.

12. Support for Development of Major Facilities and Equipment

As an integral part of its stewardship of the science and engineering infrastructure of the country, NSF provides support for major research equipment and facilities construction. NSF depends on the research communities to provide input for the planning, development, and implementation of Large Facility Projects. This normally occurs through National Academy of Science studies, community workshop reports, professional society activities, and many other methods to ensure community input funded by interested NSF programs on the basis of merit-reviewed proposals. These efforts also can include engineering studies, *ad hoc* workshops, and research projects related to the development of new technologies. Proposers are strongly encouraged to contact the appropriate disciplinary program officer to discuss potential funding and mechanisms in advance of proposal submission.

13. Projects Requiring High-Performance Computing Resources, Large Amounts of Data Storage, or Advanced Visualization Resources

Many research projects require access to computational, data storage or visualization resources in order to complete the work proposed. For those projects that require such resources at a scale that is beyond that typically available locally, NSF provides the TeraGrid. The TeraGrid is a collection of very powerful supercomputers, a high-throughput computing environment, high-volume data storage facilities, and advanced visualization services, connected by a high-bandwidth private network. TeraGrid services available to researchers also include consulting support.

The TeraGrid's computational resources support parallel computations at scales ranging from a few processor cores to tens of thousands of processor cores, as well as ensembles of serial or parallel computations. The TeraGrid provides a variety of system architectures that support shared-memory, distributed-memory, and grid-computing programming models. Users may also submit jobs using the Condor high-throughput computing paradigm. Projects that need to store very large volumes of data may do so in the TeraGrid's high-capacity data storage facilities. The TeraGrid includes visualization hardware and software designed for the exploration of large complex datasets. Workflow tools are available to facilitate the composition and execution of complicated computational or data-processing pipelines.

Allocations of TeraGrid resources are available to PI(s) of funded research projects at no additional cost. A simple on-line process may be used to request an allocation. Requests are reviewed to help the TeraGrid operators determine how best to allocate resources. This review process does **not** re-review the science or

engineering research content of the project. Computing allocations typically range from a few thousand processor-hours to several tens of millions of processor-hours, according to need. Similarly, a range of storage allocations is possible. The TeraGrid provides consulting and training services to help researchers to make effective use of the resources available. For more information on how to request an allocation, please see <http://portal.teragrid.org> or <http://www.teragrid.org>.

Exhibit II-1: Proposal Preparation Checklist

It is imperative that all proposals conform to the proposal preparation and submission instructions specified in this Guide. Proposals also must comply with NSF font, spacing and margin requirements. The guidelines specified in GPG Chapter II.B establish minimum requirements; however, readability is of utmost importance and should take precedence in selection of an appropriate font. Conformance with all preparation and submission instructions is required and will be strictly enforced unless a deviation has been approved in advance of proposal submission. NSF may return without review proposals that are not consistent with these instructions. See GPG Chapter IV.B 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.

General:

- Proposal is responsive to the program announcement/solicitation or to the GPG.
- If a proposal has been previously declined and is being resubmitted, 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.

Single Copy Documents:

- 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).
- Authorization to Deviate from NSF Proposal Preparation Requirements (if applicable).
- List of Suggested Reviewers, or Reviewers Not to Include (optional).
- Proprietary or Privileged Information Statement (if applicable).
- Proposal Certifications (submitted by the Authorized Organizational Representative within 5 working days following the electronic submission of the proposal.) (See GPG Chapter II.C.1e for a complete listing of proposal certifications.)
- 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 Grant Proposal Guide.")
- Specific NSF program(s) identified (if known).
- For renewal proposal, previous award number entered.
- Related preliminary proposal number entered (if applicable).
- Check Appropriate Box(es), and provide requisite information, if the proposal includes any of the items identified. Note in particular, proposals that include use of human subjects or vertebrate animals require additional information to be submitted with these types of proposals.

[] **Project Summary:**

Note limitation of one page, and the requirement that both merit review criteria be separately addressed within the body of the Summary.

[] **Project Description:**

[] Note limitation of 15 pages

[] Merit Review Criteria: Ensure both merit review criteria are described as an integral part of the narrative.³³

[] Proposals that include funding to support postdoctoral researchers must describe, as a separate section within the 15-page Project Description, the mentoring activities provided for such individuals. **Proposals that do not describe in the Project Description the mentoring activities that will be provided to postdoctoral researchers supported on the project will be returned without review.**

[] Inclusion of Universal Resource Locators (URLs): PIs are advised that the Project Description must be self-contained and are cautioned that URLs (Internet addresses) that provide information necessary to the review of the proposal should not be used because reviewers are not obligated to view such sites.

[] Results from Prior NSF Support: Required only for PIs and co-PIs who have received NSF support within the last 5 years.

[] 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):**

[] Note limitation of 2 pages per individual; 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 (Note limitation of 3 pages **per proposal**.)

[] **Current and Pending Support:** Required for all senior project personnel.

[] **Facilities, Equipment and Other Resources**

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>.

[] **Special Information and Supplementary Documentation:**

[] See GPG Chapter II.C.2j for the types of information appropriate for submission in this section, as required.

[] Any additional items specified in a relevant program solicitation.

[] **Special Guidelines:**

[] Note that GPG Chapter II.D contains special proposal preparation instructions for certain types of proposals.

Exhibit II-2: 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).

Exhibit II-3: Drug-Free Workplace Certification

Instructions for Certification

1. By electronically signing the NSF 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.

Exhibit II-4: Debarment and Suspension Certification

Instruction 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.

Exhibit II-5: 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, an 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.

Exhibit II-6: Nondiscrimination Certification

Instructions for Nondiscrimination Certification

1. In accordance with NSF policy, by electronically signing the proposal, the Authorized Organizational Representative is providing the requisite Certification of Compliance with National Science Foundation Nondiscrimination Regulations and Policies. This Certification sets forth the nondiscrimination obligations with which all awardee must comply. These obligations also apply to subrecipients, subgrantees, and subcontractors under the award. The proposer therefore, shall obtain the NSF Nondiscrimination Certification from each organization that applies to be, or serves as a subrecipient, subgrantee or subcontractor under the award (for other than the provision of commercially available supplies, materials, equipment or general support services) prior to entering into the subaward arrangement.

2. The proposer shall provide immediate notice to the Foundation if at any time the proposer learns that its certification was erroneous when submitted, or has become erroneous by reason of changed circumstances.

Certification of Compliance with National Science Foundation Nondiscrimination Regulations and Policies

By electronically signing the proposal, the Authorized Organizational Representative hereby certifies that the organization will comply with Title VI of the Civil Rights Act of 1964 (42 USC § 2000d), Title IX of the Education Amendments of 1972 (20 USC §§ 1681 *et seq.*), the Rehabilitation Act of 1973 (29 USC § 794), the Age Discrimination Act of 1975 (42 USC §§ 6101 *et seq.*) and all regulations and policies issued by NSF pursuant to these statutes.

To that end, in accordance with the above-referenced nondiscrimination statutes, and NSF's implementing regulations and policies, no person in the United States shall, on the ground of race, color, national origin, sex, disability, or age, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity for which the Proposer receives Federal financial assistance from the Foundation; and HEREBY CERTIFIES THAT it will immediately take any measures necessary to effectuate this agreement.

If any real property or structure thereon is provided or improved with the aid of Federal financial assistance extended to the Proposer by the Foundation, this Certification shall obligate the Proposer, or in the case of any transfer of such property, the transferee, for the period during which the real property or structure is used for a purpose for which the Federal financial assistance is extended or for another purpose involving the provision of similar services or benefits. If any personal property is so provided, this Certification shall obligate the Proposer for the period during which it retains ownership or possession of the property. In all other cases, this Certification shall obligate the Proposer for the period during which the Federal financial assistance is extended to it by the Foundation.

THIS CERTIFICATION is given in consideration of and for the purpose of obtaining any and all Federal grants, cooperative agreements, loans, contracts, property, discounts or other Federal financial assistance extended after the date hereof to the Proposer by the Foundation, including installment payments after such date on account of applications for Federal financial assistance which were approved before such date. The Proposer recognizes and agrees that such Federal financial assistance will be extended in reliance on the representations and agreements made in this Certification, and that the United States shall have the right to seek judicial enforcement of this Certification. This Certification is binding on the Proposer, its successors, transferees, and assignees.

Exhibit II-7: 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 proposer, and approved by NSF, who will be responsible for the scientific or technical direction of the project. NSF does not infer any distinction in scientific stature among multiple PIs, whether referred to as PI or co-PI. If more than one, the first one listed will serve as the contact PI, with whom all communications between NSF program officials and the project relating to the scientific, technical, and budgetary aspects of the project should take place. The PI and any identified co-PIs, however, will be jointly responsible for submission of the requisite project 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 Scholar -- An individual who has received a doctoral degree (or equivalent) and is engaged in a temporary and defined period of mentored advanced training to enhance the professional skills and research independence needed to pursue his or her chosen career path. Postdoctoral scholars not identified under Senior Personnel above should be listed as Other Personnel.
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 scholar 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.

Chapter 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 flowchart that depicts the entire NSF proposal and award process (and associated timeline) is included as GPG Exhibit III-1.

A comprehensive description of the Foundation's merit review process is available on the NSF website at: <http://www.nsf.gov/bfa/dias/policy/meritreview/>.

A. Review Criteria

The National Science Foundation strives to conduct a fair, competitive, transparent merit-review process for the selection of projects. 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, original, or potentially transformative concepts? How well conceived and organized is the proposed activity? Is there sufficient access to resources?

What are the broader impacts of the proposed activity?³⁴

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?

Mentoring activities provided to postdoctoral researchers supported on the project, as described in the Project Description section of the proposal, will be evaluated under the Broader Impacts criterion.

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

³⁴Examples illustrating activities likely to demonstrate broader impacts are available electronically on the NSF website at <http://www.nsf.gov/pubs/gpg/broaderimpacts.pdf>.

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.

See GPG Chapter II.C.2d for information on mentoring activities.

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

B. Selection of Reviewers

The NSF guidelines for the selection of reviewers are designed to ensure selection of experts who can give program officers the proper information needed to make a recommendation in accordance with the NSF approved criteria for selection of projects. Optimally, reviewers should have:

1. Special knowledge of the science and engineering subfields involved in the proposals to be reviewed to evaluate competence, intellectual merit, and utility of the proposed activity. Within reasonable limits, reviewers' fields of specialty should be complementary within a reviewer group.
2. Broader or more generalized knowledge of the science and engineering subfields involved in the proposals to be reviewed to evaluate the broader impacts of the proposed activity. Reviewers with broad expertise are required for proposals involving substantial size or complexity, broad disciplinary or multidisciplinary content, or significant national or international implications.
3. Broad knowledge of the infrastructure of the science and engineering enterprise, and its educational activities, to evaluate contributions to societal goals, scientific and engineering personnel, and distribution of resources to organizations and geographical areas.
4. To the extent possible, diverse representation within the review group. The goal is to achieve a balance among various characteristics. Important factors to consider include: type of organization represented, reviewer diversity, age distribution and geographic balance.

C. 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;³⁵ 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."³⁶

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.

D. 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.

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.

Revised proposal budgets must be electronically signed by the AOR.

E. 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/office 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. If the program recommendation is for an award and final division/office 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/office

³⁵The status of a proposal may be found via the "Proposal Functions" section of FastLane.

³⁶Detailed instructions on submitting proposer-initiated proposal file updates are available on the FastLane website at <https://www.fastlane.nsf.gov/documents/pfu/pfu.jsp>.

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 and Agreements Officer may make commitments, obligations or awards on behalf of NSF or authorize the expenditure of funds. No commitment on the part of NSF 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 and Agreements Officer does so at its own risk.

F. Review Information Provided to PI

When a decision has been made (whether an award or a declination), the following information is released electronically to the PI through FastLane:

- description of the context in which the proposal was reviewed;
- copies of all reviews used in the decision (with any reviewer-identifying information redacted);
- copy of panel summary, if the proposal was reviewed by a panel at any point in the process;
- site-visit reports, if applicable.

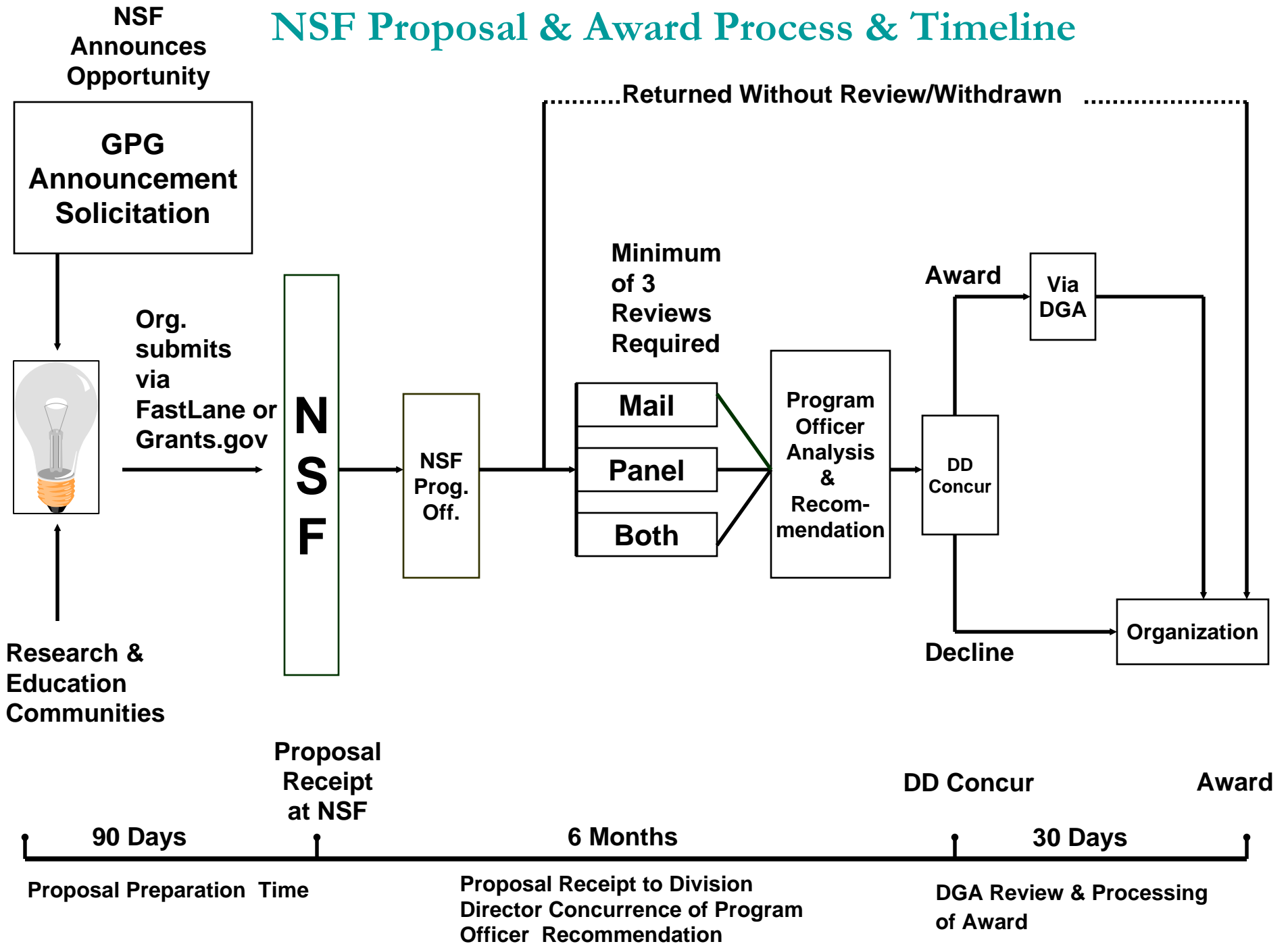
In addition, if not otherwise provided in the panel summary, the PI is provided an explanation (written or telephoned) of the basis for the declination. A PI also may request and obtain any other releasable material in NSF's file on his/her proposal. Everything in the file, except information that identifies either reviewers or other pending or declined proposals is usually releasable to the PI.

G. 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 GPG Chapter I.D.3) 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.

NSF Proposal & Award Process & Timeline



Chapter IV: Non-Award Decisions and Transactions

A. Proposal Withdrawal

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 individuals³⁷ 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".³⁸

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.

³⁷ Authorized Organizational Representatives with "submit" permission also can initiate a proposal withdrawal.

³⁸ 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 electronic³⁹ submission, as specified in the *Grant Proposal Guide* or program solicitation;
6. is not responsive to the GPG or program announcement/solicitation;
7. does not meet an announced proposal deadline date;
8. was previously reviewed and declined and has not been substantially revised; and
9. duplicates another proposal that was already awarded.

Proposals **will be** returned without review for the reasons outlined in the “Project Summary” section (Chapter II.C.2b) and the “Project Description” section (Chapter II.C.2d) of the GPG.

C. Declinations

A PI whose proposal for NSF support has been declined will receive information and an explanation of the reason(s) for declination 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. See GPG Chapter III.F for additional information.

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

1. Overview

a. A proposer whose proposal has been declined may ask the cognizant NSF Program Officer or the cognizant Division Director for information over and above the explanatory materials received with the declination notice. If the PI/PD is not satisfied that the proposal was fairly handled and reasonably reviewed, he/she may request reconsideration by the responsible Assistant Director (AD) or Office Head. An organization (or an unaffiliated PI/PD) still not satisfied after reconsideration by the responsible AD/Office Head may request further reconsideration by the Deputy Director of the Foundation. The decision made by the Deputy Director is final.

b. If a proposal has been declined after review by the NSB, only an explanation will be available.

c. The aim of any reconsideration is to ensure that NSF’s review has been fair and reasonable, both substantively and procedurally. The scientific and technical merits may be examined within the context of budget availability and program priorities. Reconsideration also may address any procedural errors in peer review or other aspects of proposal review, including unaccounted-for conflict of interests or inappropriate consideration of records, information or rumor.

d. Award of NSF assistance is discretionary and reconsideration is not an adversarial process. A formal hearing, therefore, is not provided. Because factors such as program budget and priorities factor into the

³⁹ Unless has been authorized in advance of the paper submission. See GPG Chapter II.A for further information.

decision on a proposal, NSF cannot ensure proposers that reconsideration will result in an award even if error is established in connection with the initial review.

e. No revisions made to the proposal after declination will be considered in connection with the original proposal. A substantially revised proposal, however, may be submitted for review as a new proposal under standard procedures. NSF reserves the right to return without review a proposal that is substantially the same as one that was previously reviewed and declined whether or not a request for reconsideration was made.

2. Applicability

NSF's reconsideration process is available to individuals and organizations concerning proposals for grant funding. It does not apply to:

- a. "discourage" (i.e., non-binding) decisions resulting from submission of a preliminary proposal;
- b. proposals for:
 - (1) fellowships;
 - (2) travel grants;
 - (3) Small Grants for Exploratory Research (SGER);
 - (4) Rapid Response Grants;
 - (5) EARly-concept Grants for Exploratory Research (EAGER); or
 - (6) Phase I proposals submitted under the Small Business Innovation Research (SBIR) program.
- c. proposals returned without review by NSF for failure to:
 - (1) be submitted with sufficient lead time before the activity is to begin;
 - (2) meet an announced proposal deadline date; or
 - (3) meet NSF proposal preparation requirements, such as page limitations, formatting instructions, and electronic submission, as specified in the *Grant Proposal Guide* or program solicitation.

3. Reconsideration Process

The following paragraphs highlight the various stages of the NSF Reconsideration Process, including the necessary procedural aspects of each stage of the process:

a. Explanations by the NSF Program Officer or Division Director

When a proposal is declined, the PI/PD receives verbatim but unattributed copies of any *ad hoc* reviews and the panel summary (if applicable), a description of how the proposal was reviewed, and, if not otherwise provided in the panel summary, an explanation (written or telephoned) of the basis for the declination. A returned proposal also will be accompanied by an explanation. A PI/PD who is considering asking for reconsideration should first contact the cognizant NSF Program Officer or Division Director, who will afford the PI/PD an opportunity to present his/her point of view, provide additional information if any exists, and take any further action that seems appropriate.

b. Reconsideration by the Cognizant Assistant Director

(1) If dissatisfied with the explanation provided by the NSF Program Officer or Division Director, the PI/PD may request in writing that NSF reconsider its action. Such a request will be considered only if the PI/PD has first sought and obtained an explanation from the cognizant NSF Program Officer or Division Director, and only if the request is received by the Foundation within 90 days after the declination or the return. The request should be addressed to the AD/Office Head for the directorate or office that handled the proposal and should explain why the PI/PD believes that the declination or return was unwarranted.

(2) The AD/Office Head will reconsider the record to determine whether NSF's review of the declined proposal was fair and reasonable, substantively and procedurally, taking into account availability of funds and the policies and priorities of the program and NSF. In the case of a returned proposal, the record will be

reviewed to determine whether the proposed project was inappropriate for NSF consideration. The AD/Office Head may request additional information from the PI/PD and may obtain additional reviews. If additional reviews are sought, they are subject to standard review procedures (e.g., instructions must be provided to reviewers and conflicts-of-interest policies must be followed). The AD/Office Head may conduct the reconsideration personally or may designate another NSF official who had no part in the initial review to do so. As used here, "AD/Office Head" includes such a designated official.

(3) Within 45 days after the date of the request, the AD/Office Head will furnish the results of the reconsideration, in writing, to the PI/PD. If results cannot be furnished within 45 days, the AD/Office Head will send the PI/PD a written explanation of the need for more time, indicating the date when the results can be expected. If the AD/Office Head reaffirms the declination or return, he/she will inform the PI/PD that the PI/PD's organization may obtain further reconsideration by the Deputy Director of NSF as provided below.

c. Further Reconsideration by the Deputy Director

(1) Within 60 days after the AD/Office Head has notified the PI/PD of the results of the reconsideration, the proposing organization or an unaffiliated PI/PD may request further reconsideration by the Deputy Director of NSF.

(2) A request for further reconsideration need not be in any particular format, but it must be in writing, and must be signed by the organization's president or other chief executive officer and by the PI/PD. For declinations, it should explain why the organization believes that an error may have occurred in the initial evaluation and why it is not entirely satisfied with the reconsideration by the responsible AD/Office Head. For returned proposals, it should explain why the organization believes that an error may have occurred in the initial determination that the proposal was inappropriate for NSF consideration.

(3) The Deputy Director will review the request for further reconsideration and the record of earlier NSF actions, including the original review and the reconsideration by the AD/Office Head, to determine whether NSF's review of the declined proposal was fair and reasonable, or, in the case of a returned proposal, whether the proposed project was inappropriate for NSF consideration. The Deputy Director may request additional information from the PI/PD or the proposing organization and may obtain additional reviews. If additional reviews are sought, they are subject to standard review procedures (e.g., instructions must be provided to reviewers and conflicts-of-interest policies must be followed).

(4) The Deputy Director may conduct the further reconsideration personally or may designate another NSF official who had no part in the initial evaluation of the proposal or the earlier reconsideration to do so. As used here, "Deputy Director" includes such a designated official.

(5) Within 30 days after a request for further reconsideration is received at NSF, the Deputy Director will furnish the results of the further reconsideration, in writing, to the organization. If results cannot be furnished within 30 days, the Deputy Director will send the organization a written explanation of the need for more time, indicating the date when the results can be expected.

(6) The decision made by the Deputy Director is final.

E. Resubmission

A declined proposal may be resubmitted, but only after it has undergone substantial revision. A resubmitted 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.

Chapter V: Renewal Proposals

A renewal proposal is a request for additional funding for a support period subsequent to that provided by a standard or continuing grant. A renewal proposal competes 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 previously submitted versions of the proposal.

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 may 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.

A. 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.

B. 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:

1. copies of no more than six reprints⁴¹ 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;
2. information on human resources development at the postdoctoral, graduate and undergraduate levels; and
3. 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 Cover Sheet. ABR proposals may not be submitted for consecutive renewals.

PIs are advised that the ABR is a special type of renewal proposal appropriate only for an investigator who has made significant contributions, over a number of years, in the area of research addressed by the proposal. Investigators are strongly urged to contact the cognizant Program Officer prior to developing a proposal using this format.

Descriptions of other forms of additional funding support, including continuing grants and supplemental funding requests, are contained in AAG Chapter I.

⁴⁰This requirement applies to both types of renewal proposals: Traditional Renewal and Accomplishment-Based Renewal.

⁴¹Reprints should be provided as supplementary documentation and should be submitted electronically via the Proposal Preparation Module in the FastLane System.

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