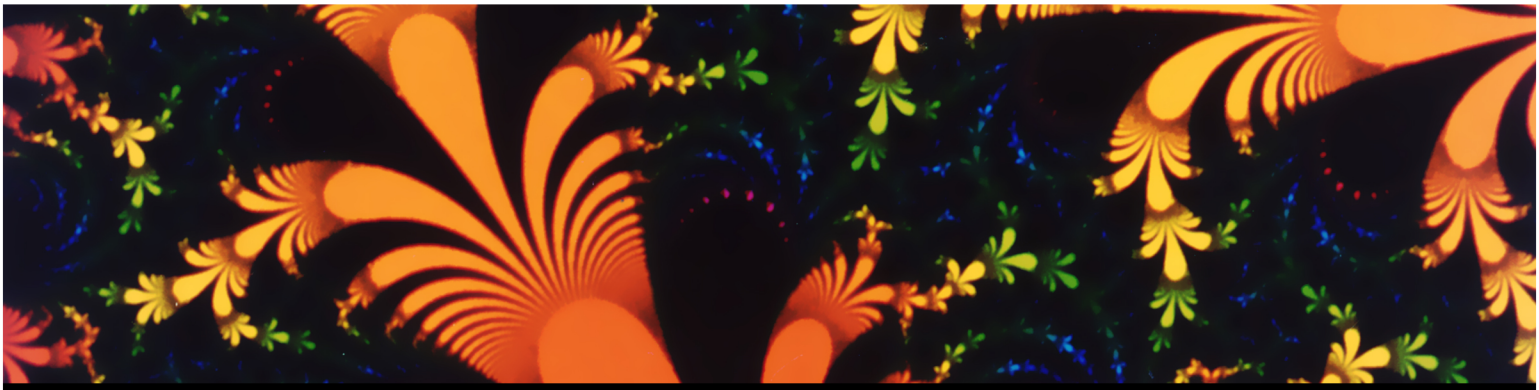
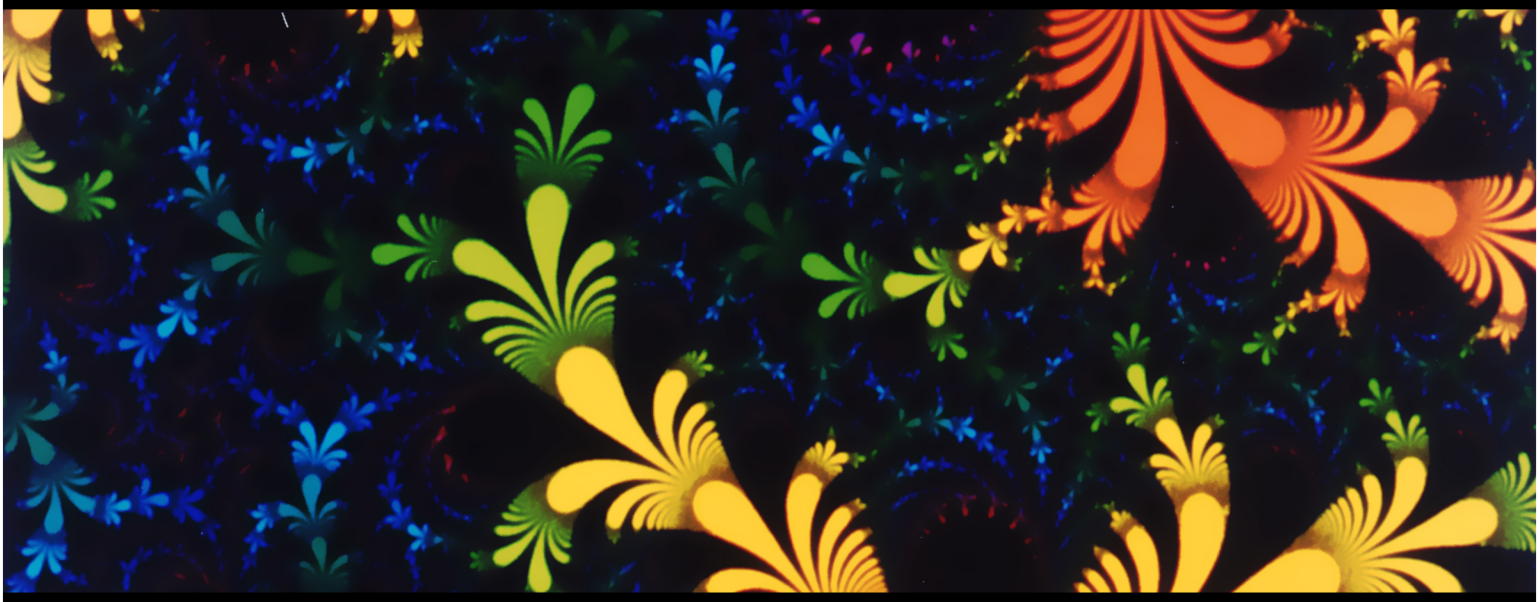


THE NATIONAL SCIENCE FOUNDATION

PROPOSAL AND AWARD POLICIES AND PROCEDURES GUIDE

Part I - Grant Proposal Guide



EFFECTIVE JANUARY 2016
NSF 16-1
OMB Control Number 3145-0058

GRANT PROPOSAL GUIDE

Table of Contents

Chapter I: Pre-Submission Information I-1

A. NSF Proposal Preparation and Submission I-1
B. NSF Programs and Funding Opportunities I-1
C. Categories of Funding Opportunities I-2
1. Dear Colleague Letters I-2
2. Program Descriptions I-2
3. Program Announcements I-2
4. Program Solicitations I-2
D. Types of Submissions I-3
1. Letters of Intent I-3
2. Preliminary Proposals I-3
a. Invite/Not Invite Decisions I-3
b. Encourage/Discourage Decisions I-3
3. Full Proposals I-4
Proprietary or Privileged Information I-4
E. Who May Submit Proposals I-5
Categories of Proposers I-5
1. Universities and Colleges I-5
2. Non-profit, non-academic organizations I-5
3. For-profit organizations I-5
4. State and Local Governments I-5
5. Unaffiliated Individuals I-5
6. Foreign organizations I-5
7. Other Federal agencies I-6
F. When to Submit Proposals I-6
1. Target Dates I-6
2. Deadline Dates I-6
Special Exceptions to NSF's Deadline Date Policy I-6
Natural or Anthropogenic Disasters I-6
Closure of NSF I-7
3. Submission Windows I-7
G. How to Submit Proposals I-7
1. Electronic Requirements I-7
2. Submission Instructions I-7
3. Requirements Relating to Data Universal Numbering System (DUNS) Numbers and Registration in the System for Award Management (SAM) I-7
4. NSF ID I-8
5. Proposal Receipt I-8
H. Proposal Processing I-8

Chapter II: Proposal Preparation Instructions II-1

A. Conformance with Instructions for Proposal Preparation II-1
B. Format of the Proposal II-2
1. Proposal Pagination Instructions II-2
2. Proposal Margin and Spacing Requirements II-2
3. Page Formatting II-3
C. Proposal Contents II-3
1. Single-Copy Documents II-3
a. Authorization to Deviate from NSF Proposal Preparation Requirements II-3
b. List of Suggested Reviewers or Reviewers Not to Include II-3

c. Proprietary or Privileged Information II-3
d. Proposal Certifications II-3
e. Collaborators & Other Affiliations Information II-6
2. Sections of the Proposal II-6
a. Cover Sheet II-7
b. Project Summary II-9
c. Table of Contents II-9
d. Project Description II-9
(i) Content II-9
(ii) Page Limitations and Inclusion of Uniform Resource Locators (URLs) within the Project Description II-10
(iii) Results from Prior NSF Support II-10
(iv) Unfunded Collaborations II-11
(v) Group Proposals II-11
(vi) Proposals for Renewed Support II-11
e. References Cited II-11
f. Biographical Sketch(es) II-11
(i) Senior Personnel II-11
(a) Professional Preparation II-12
(b) Appointments II-12
(c) Products II-12
(d) Synergistic Activities II-12
(ii) Other Personnel II-12
(iii) Equipment Proposals II-13
g. Budget and Budget Justification II-13
(i) Salaries and Wages II-13
(a) Senior Personnel Salaries & Wages Policy II-13
(b) Administrative and Clerical Salaries & Wages Policy II-14
(c) Procedures II-14
(d) Confidential Budgetary Information II-14
(ii) Fringe Benefits II-14
(iii) Equipment II-15
(iv) Travel II-15
(a) General II-15
(b) Domestic Travel II-15
(c) Foreign Travel II-15
(v) Participant Support II-15
(vi) Other Direct Costs II-16
(a) Materials and Supplies (including Costs of Computing Devices) II-16
(b) Publication/Documentation/Dissemination II-16
(c) Consultant Services (also referred to as Professional Service Costs) II-16
(d) Computer Services II-17
(e) Subawards II-17
(f) Other II-17
(vii) Total Direct Costs II-17
(viii) Indirect Costs II-17
(ix) Total Direct and Indirect Costs II-18
(x) Amount of This Request II-18
(xi) Cost Sharing II-18
(xii) Allowable and Unallowable Costs II-19
(a) Entertainment II-19
(b) Meals and Coffee Breaks II-19
(c) Alcoholic Beverages II-19
h. Current and Pending Support II-19
i. Facilities, Equipment and Other Resources II-20
j. Special Information and Supplementary Documentation II-20
k. Appendices II-22

D. Special Guidelines II-23
1. Rapid Response Research (RAPID) Proposals II-23
2. EArly-concept Grants for Exploratory Research (EAGER) Proposals II-23
3. Ideas Lab II-24
4. Facilitation Award for Scientists and Engineers with Disabilities (FASED) II-25
5. Collaborative Proposals II-26
6. Equipment Proposals II-27
7. Proposals Involving Vertebrate Animals II-28
8. Proposals Involving Human Subjects II-30
9. Conference Proposals II-31
10. International Travel Proposals II-32
11. Support for Development of NSF Centers II-33
12. Support for Development of Major Research Equipment and Facilities II-33
13.1 Projects Requiring High-Performance Computing Resources, Large Amounts of Data Storage, or Advanced Visualization Resources II-33
14. Dual Use Research of Concern II-34
Exhibit II-1: Proposal Preparation Checklist II-35
Exhibit II-2 Potentially Disqualifying Conflicts of Interest II-38
Exhibit II-3: Drug-Free Workplace Certification II-39
Exhibit II-4 Debarment and Suspension Certification II-41
Exhibit II-5 Lobbying Certification II-43
Exhibit II-6 Nondiscrimination Certification II-44
Exhibit II-7: Definitions of Categories of Personnel II-45

Chapter III: NSF Proposal Processing and Review III-1

A. Merit Review Principles and Criteria III-1
Intellectual Merit III-2
Broader Impacts III-2
B. Selection of Reviewers III-2
C. Proposal File Updates III-3
D. Revisions to Proposals Made During the Review Process III-4
E. Funding Recommendation III-4
F. NSF's Risk Management Framework and the Decision to Award or Decline Proposals III-4
G. Review Information Provided to PI III-6
H. Release of Grantee Proposal Information III-7
Exhibit III-1: NSF Proposal & Award Process & Timeline III-8

Chapter IV: Non-Award Decisions and Transactions IV-1

A. Proposal Withdrawal IV-1
B. Proposals Not Accepted or Returned Without Review IV-2
C. Declinations IV-2
D. Reconsideration IV-2
E. Resubmission IV-4

Chapter V: Renewal Proposals V-1

A. Traditional Renewal V-1
B. Accomplishment-Based Renewal V-1

Subject Index .....

Chapter I: Pre-Submission Information

A. NSF Proposal Preparation and Submission

Unless specified in an NSF program solicitation, proposals submitted to NSF must be submitted via use of either the NSF FastLane System or Grants.gov. Further information on each system is provided below.

- **Proposal Preparation and Submission via the NSF FastLane System.** The policy and procedural guidance contained in the *Grant Proposal Guide* (GPG) relates specifically to proposals submitted via the NSF FastLane System. FastLane may be used for proposal preparation, submission, file updates, and postaward administrative activities. Detailed information about the FastLane System is available from the FastLane website at https://www.fastlane.nsf.gov.

- **Proposal Preparation and Submission via Grants.gov.** The policy and procedural guidance contained in the NSF *Grants.gov Application Guide* relates specifically to proposals submitted via Grants.gov. Grants.gov was established as a governmental resource to electronically find grant opportunities as well as to apply for federal awards. Grants.gov is a central storehouse for information on over 1,000 grant programs from the 26 Federal grant-making agencies and provides access to approximately $500 billion annually in awards. Detailed information about Grants.gov is available from the Grants.gov website at http://www.grants.gov.

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 GPG and/or the *Grants.gov Application Guide*, 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.

The NSF website provides the most comprehensive source of information on NSF Directorates/Offices (including contact information), programs and funding opportunities. Use of this website by potential proposers is strongly encouraged. In addition, "NSF Update" 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 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. "NSF Update" is available on NSF's website at: https://public.govdelivery.com/accounts/USNSF/subscriber/new?qsp=823.

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 communicate opportunities for research and education support, as well as to generate proposals. A brief description of each category of funding opportunity follows.

1. Dear Colleague Letters

Dear Colleague Letters (DCLs) 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, DCLs are often used to draw attention to an impending change in NSF policies or programs.

2. Program Descriptions

The term "program description" includes broad, general descriptions of programs and activities in NSF Directorates/Offices and Divisions. Program descriptions are 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 GPG, as well as the National Science Board (NSB)-approved merit review criteria. See GPG Chapter III for additional information.

3. Program Announcements

The term "program announcement" refers to formal NSF publications that announce NSF programs. Program announcements utilize the generic eligibility and proposal preparation guidelines specified in the GPG and incorporate the NSB-approved merit review criteria.

4. Program Solicitations

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 GPG;
- contains additional review criteria relevant to the program;
- requires submission of a letter of intent (see GPG Chapter I.D.1) or preliminary proposal (see GPG Chapter I.D.2);
- 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]
- requires cost sharing;
- requires a limitation in indirect (F&A) costs;
- specifies additional award conditions or reporting requirements;
- anticipates use of a cooperative agreement; or

[1]Unless otherwise specified, the term “organization” refers to all categories of proposers.

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

D. Types of Submissions

1. Letters of Intent

Some NSF program solicitations require or request submission of a letter of intent (LOI) in advance of submission of a full proposal. An LOI is not a binding document. The predominant reason for its use is to help NSF program staff gauge the size and range of the competition, enabling earlier selection and better management of reviewers and panelists. In addition, the information contained in an LOI is used to help avoid potential conflicts of interest in the review process.

An LOI normally contains the Principal Investigator's (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. An LOI is not externally evaluated or used to decide on funding. The requirement to submit an LOI will be identified in the program solicitation, and such letters are submitted electronically to NSF. Failure to submit a required LOI identified in a program solicitation will result in a full proposal not being accepted or returned without review.

2. Preliminary Proposals

Some NSF program solicitations require or request submission of a preliminary proposal in advance of submission of a full proposal. The three 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 when the community senses that a major new direction is being identified, or competitions that will result in a small number of awards;

- increase the overall quality of the full submission; and

- assist NSF program staff in managing the review process and in the selection of reviewers.

The NSF program solicitation will specify content and submission requirements when preliminary proposals are to be used. 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 the appropriate office at his/her organization, and the Authorized Organizational Representative (AOR) signs and submits the preliminary proposal via use of NSF's electronic systems.

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. 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.

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. 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 Proposals

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, if applicable; and (5) amount of funding required. It should present the intellectual merit and broader impacts 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 misconduct[2] 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 as a single-copy document in the Proposal Preparation Module in FastLane. (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.H.)

[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. Organizations involved in international collaborations might find the following document provided by the Organisation for Economic Co-operation and Development (OECD) to be useful: "Best Practices for Ensuring Scientific Integrity and Preventing Misconduct"

[3] Detailed instructions for submission of proprietary or privileged information are available in FastLane 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 US acting on behalf of their faculty members. Such organizations also are referred to as academic institutions. Academic institutions located outside the US fall under paragraph 6. below.

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

3. For-profit organizations — US commercial organizations, especially small businesses with strong capabilities in scientific or engineering research or education. An unsolicited proposal from a commercial organization may be funded when the project is of special concern from a national point of view, special resources are available for the work, or the proposed project is especially meritorious. NSF is interested in supporting projects that couple industrial research resources and perspectives with those of universities; therefore, it especially welcomes proposals for cooperative projects involving both universities and the private commercial sector.

4. State and Local Governments — State educational offices or organizations and local school districts may submit proposals intended to broaden the impact, accelerate the pace, and increase the effectiveness of improvements in science, mathematics and engineering education in both K-12 and post-secondary levels.

5. Unaffiliated Individuals — Scientists, engineers or educators in the US and US citizens may be eligible for support, provided that the individual is not employed by, or affiliated with, an organization, and the individual:

- has demonstrated the capability and has access to any necessary facilities to carry out the project; and
- agrees to fiscal arrangements that, in the opinion of the NSF Division of Grants & Agreements, ensure responsible management of Federal funds.

Unaffiliated individuals must contact the appropriate program prior to preparing and submitting a proposal.

6. Foreign organizations — NSF rarely provides support to foreign organizations. NSF will consider proposals for cooperative projects involving US and foreign organizations, provided support is requested only for the US portion of the collaborative effort.

7. Other Federal agencies — NSF does not normally support research or education activities by scientists, engineers or educators employed by Federal agencies or Federally Funded Research and Development Centers (FFRDCs). 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 US 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 must 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 faculty member of the university, although part of his/her salary may be provided by the Federal agency. Preliminary inquiry must be made to the appropriate program before preparing a proposal for submission.

F. When to Submit Proposals

Proposers should allow adequate time for 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 or will be returned without 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, or when NSF is closed due to inclement weather or other reason that interferes with an organization's ability to meet a proposal submission deadline, NSF has developed the following guidelines for use by impacted organizations.

Natural or Anthropogenic Disasters - Flexibility in meeting announced deadline dates because of a natural or anthropogenic disaster that impacts a proposer's ability to submit a proposal to NSF may be granted with the approval of the cognizant NSF Program Officer. Where possible, such requests should be submitted in advance of the proposal deadline. The Foundation will work with each impacted organization on a case-by-case basis to address its specific issue(s). 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." Proposers should then follow the written or verbal guidance provided by the cognizant NSF Program Officer. Generally, NSF permits extension of the deadline by up to five business days.

Closure of NSF – When NSF is closed due to inclement weather or other reason[4], deadline(s) that occurred during the closure will be extended to the following business day after the closure ends.

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 through the NSF website.[5] Unless otherwise stated in a program announcement or solicitation, proposals must be received by the specified date. If the deadline date falls on a weekend, it will be extended to the following Monday; if the date falls on a Federal holiday, it will be extended to the following business day. Proposals must be received by 5 p.m. submitter's local time on the established deadline date.[6] Failure to submit by 5.p.m. submitter's local time will result in the proposal not being accepted. See GPG Chapter IV.B for additional information.

G. How to Submit Proposals

1. Electronic Requirements

Proposals to NSF must be submitted via the NSF FastLane System or via use of Grants.gov. For proposals prepared and submitted via Grants.gov, the guidelines specified in the NSF *Grants.gov Application Guide* apply.

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 will 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) cannot be duplicates of proposals to any other Federal agency for simultaneous consideration. The only exceptions to this rule are: (1) when the program officers at the 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 PI or 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 by the Authorized Organizational Representative (AOR), the AOR is required to provide certain proposal certifications. (See GPG Chapter II.C.1.d for a listing.) This certification process will occur concurrently with submission of the proposal.

3. Requirements Relating to Data Universal Numbering System (DUNS) Numbers and Registration in the System for Award Management (SAM)

Proposers must provide a Dun and Bradstreet (D&B) DUNS number when applying for a new award or renewal award. NSF requires that organizations registering to use NSF's electronic systems have a valid and active SAM registration and have a valid DUNS number. NSF will also validate that each proposer's DUNS number and SAM registration are active and valid prior to allowing submission of a proposal to NSF. Any subrecipients named in the proposal also are required to obtain a DUNS number and register in FastLane. Subrecipients named in the proposal, however, do not need to be registered in SAM.

[4] This policy is not intended to cover NSF closures due to lapses in appropriation. In such cases, specific guidance will be issued, as appropriate.
[5] A listing of upcoming target dates and deadlines, sorted by date and by program area is available on the NSF website at: http://nsf.gov/funding/pgm_list.jsp?org=NSF&ord=date.
[6] Letters of intent or preliminary proposals also follow the 5 p.m. submitter's local time standard.

The SAM is the primary registrant database for the US Government. SAM collects, validates, stores, and disseminates data in support of agency acquisition missions, including Federal agency contract and assistance awards. This SAM registration must be maintained with current information at all times during which the organization has an active award or a proposal under consideration by NSF. Failure to comply with the SAM registration requirement prior to proposal submission may impact the processing of the proposal. To register in the SAM, go to https://www.sam.gov. Proposers are advised that entity registration will become active after three to five days when the Internal Revenue Service (IRS) validates the Tax ID Number.

The organization also is responsible for updating all SAM registration information as it changes. Once an award is made, failure to maintain current and complete information within SAM will impact receipt of funding. To maintain an active status in SAM, an organization's registration must be renewed and revalidated at least every 12 months from the date of the previous registration. If the registration is not renewed, it will expire. An expired registration will impact the organization's ability to submit proposals or receive grant payments.

SAM is the NSF system of record for organizational information, including financial information. The Legal Business Name and Physical Address information are automatically input into the proposer's SAM registration from D&B, and it is the organization's responsibility to keep this information updated.

4. NSF ID

The NSF ID is a unique numerical identifier assigned to users by NSF. The NSF ID will be used throughout NSF's electronic systems[7] as a login ID and identification verification. Each individual user of NSF systems, (e.g., Fastlane and Research.gov) should not have more than one NSF ID. Users with more than one NSF ID should contact the Help Desk at (800) 673-6188 or (703) 292-8142 or by e-mail to fastlane@nsf.gov for assistance.

Submission of Social Security Numbers (SSNs) only will be requested where it is necessary for business purposes, e.g., financial reimbursement. An SSN is solicited under NSF Act of 1950, as amended.

5. Proposal Receipt

Once the proposal is submitted, PIs can check the status of the proposal via use of NSF's electronic systems. If a proposal number is not reflected in the electronic systems, contact the Help Desk at (800) 673-6188 or (703) 292-8142 or by e-mail to fastlane@nsf.gov.

Communications about the proposal should be addressed to the cognizant NSF Program Officer with reference to the proposal number. Proposers are strongly encouraged to use NSF's electronic systems 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 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 five 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 and group travel) 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.

[7] NSF has developed a matrix entitled, *Electronic Capabilities Modernization Status*, that lists NSF's grantee electronic capabilities, and whether they can be found in FastLane, Research.gov or both. This matrix will be updated as appropriate, independent of the PAPPG revision cycle. The *Electronic Capabilities Modernization Status* website is available at: http://www.nsf.gov/bfa/dias/policy/estatus_matrix.jsp.

Chapter II: Proposal Preparation Instructions

Each proposing organization that is new to NSF or has not had an active NSF assistance award within the previous five years should be prepared to submit basic organization and management information and certifications, when requested, to the applicable award-making division within the Office of Budget, Finance & Award Management (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 NSF 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 on the NSF website.[8]

Proposers should also be aware of core strategies that are essential to the fulfillment of NSF's mission, as articulated in *Investing in Science, Engineering, and Education for the Nation's Future: NSF Strategic Plan, 2014-2018*. These strategies are integrated in the program planning and implementation process, of which proposal review is one part. NSF's mission is particularly well-implemented through the integration of research and education and broadening participation in NSF programs, projects, and activities.

One of the strategic objectives in support of NSF's mission is to foster integration of research and education through the programs, projects, and activities it supports at NSF awardee organizations. These organizations recruit, train, and prepare a diverse science, technology, engineering, and mathematics (STEM) workforce to advance the frontiers of science and participate in the US technology-based economy. NSF's contribution to the national innovation ecosystem is to provide cutting-edge research under the guidance of the Nation's most creative scientists and engineers. NSF also supports development of a strong STEM workforce by investing in building the knowledge that informs improvements in STEM teaching and learning.

NSF's mission calls for the broadening of opportunities and expanding participation of groups, organizations, and geographic regions that are underrepresented in STEM disciplines, which is essential to the health and vitality of science and engineering. NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports.

A. Conformance with Instructions for Proposal Preparation

It is important that all proposals conform to the instructions provided in the GPG or the NSF *Grants.gov Application Guide*. Conformance is required and will be strictly enforced unless an authorization to deviate from standard proposal preparation requirements has been approved. NSF will not accept or will return without review proposals that are not consistent with these instructions. See GPG Chapter IV.B for additional information. NSF authorization to deviate from these instructions must be received prior to 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 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.

[8] FAQs regarding FastLane proposal preparation and submission also are available in FastLane.

B. Format of the Proposal

Prior to 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 or the NSF *Grants.gov Application Guide*. The Proposal Preparation Checklist (GPG Exhibit II-1) may be used to assist in this review. The 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.

Upon entering the proposal preparation module, the PI will be prompted to select information describing the nature and type of proposal being developed.

1. Whether the proposal is:

- A collaborative proposal from one organization (see GPG Chapter II.D.5.a);
- A collaborative proposal from multiple organizations (see GPG Chapter II.D.5.b); or
- Not a collaborative proposal.

2. The type of proposal being developed:

- Research - other than RAPID or EAGER (see GPG Chapter II);
- RAPID (see GPG Chapter II.D.1);
- EAGER (see GPG Chapter II.D.2);
- Ideas Lab (see GPG Chapter II.D.3);
- Conference (see GPG Chapter II.D.9);
- Equipment (see GPG Chapter II.D.6);
- International Travel (see GPG Chapter II.D.10);
- Facility/Center (see relevant funding opportunity); or
- Fellowship (see relevant funding opportunity).

The requested proposal information noted above will be used to determine the applicable proposal preparation business rules that must be followed. Proposers are strongly advised to review the applicable sections of the GPG pertinent to the type of proposal being developed **PRIOR** to submission.

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 should be individually paginated prior to being uploaded to the electronic system.

2. Proposal Margin and Spacing Requirements

The proposal must conform to the following requirements:

a. Use one of the following typefaces identified below:

- Arial[9], 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; or
- 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, figures, 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 six lines of text within a vertical space of one inch.

[9] Macintosh users also may use Helvetica and Palatino typefaces.

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

Proposers are strongly encouraged to use only a standard, single-column format for the text.

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

C. Proposal Contents

1. Single-Copy Documents

Certain categories of information that are submitted in conjunction with a proposal are for "NSF Use Only." As such, the information is not provided to reviewers for use in the review of the proposal. With the exception of proposal certifications (which are submitted via the Authorized Organizational Representative function[10]), these documents should be submitted via the FastLane Proposal Preparation Module. A summary of each of these categories follows:

a. 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.

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

Proposers may include a list of suggested reviewers (including email address and institutional affiliation) 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. The decision whether or not to use the suggestions, however, remains with the Program Officer.

c. Proprietary or Privileged Information (if applicable)

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

d. 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 FastLane to sign and submit the proposal, including the proposal certifications. It is the proposing organization's responsibility to assure that only properly authorized individuals perform this function.[11]

The required proposal certifications are as follows:

[10] Further instructions for this process are available in FastLane.
[11] Detailed instructions for completion of this process are available in FastLane.

- **Certification for Authorized Organizational Representative (AOR) 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 organization has implemented and is enforcing a written policy on conflicts of interest (COI), 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 organization's expenditure of any funds under the award, will be, satisfactorily managed, reduced or eliminated in accordance with the organization's conflict of interest policy. Conflicts that cannot be satisfactorily managed, reduced or eliminated, and research that proceeds without the imposition of conditions or restrictions when a conflict of interest exists, must be disclosed to NSF via use of NSF's electronic systems.

- **Drug-Free Workplace:** The AOR is required to complete a certification regarding the Drug-Free Workplace Act. See GPG Exhibit II-2 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-3 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 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.[12]

- **Certification Regarding Nondiscrimination:** The AOR is required to complete a certification regarding compliance with NSF nondiscrimination regulations and policies. See GPG Exhibit II-5 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 or contractors under the award. The proposer, therefore, shall obtain the NSF Nondiscrimination Certification from each organization that applies to be, or serves as a subrecipient or contractor under the award (for other than the provision of commercially available supplies, materials, equipment or general support services) prior to entering into the subaward or contract 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 signing the certification pages, 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.

[12] Detailed instructions for submission of the SF LLL are available in FastLane.

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.

- **Certification Regarding Responsible Conduct of Research (RCR)[13]:** The AOR is required to complete a certification that the institution has a plan to provide appropriate training and oversight in the responsible and ethical conduct of research to undergraduates, graduate students, and postdoctoral researchers who will be supported by NSF to conduct research.

  Additional information on NSF's RCR policy is available in the AAG Chapter IV.B. While training plans are not required to be included in proposals submitted to NSF, institutions are advised that they are subject to review upon request.

- **Certification Regarding Organizational Support:** The AOR is required to complete a certification that there is organizational support for the proposal as required by Section 526 of the *America COMPETES Reauthorization Act of 2010.* This support extends to the portion of the proposal developed to satisfy the broader impacts review criterion as well as the intellectual merit review criterion, and any additional review criteria specified in the solicitation. Organizational support will be made available, as described in the proposal, in order to address the broader impacts and intellectual merit activities to be undertaken.

- **Certification Regarding Federal Tax Obligations:** When the proposal exceeds $5,000,000, the AOR is required to complete a certification regarding Federal tax obligations. By signing the certification pages, the AOR certifies that, to the best of his/her knowledge and belief, the proposing organization:

  (1) has filed all Federal tax returns required during the three years preceding this certification;

  (2) has not been convicted of a criminal offense under the Internal Revenue Code of 1986; and

  (3) has not, more than 90 days prior to this certification, been notified of any unpaid Federal tax assessment for which the liability remains unsatisfied, unless the assessment is the subject of an installment agreement or offer in compromise that has been approved by the Internal Revenue Service and is not in default, or the assessment is the subject of a non-frivolous administrative or judicial proceeding.

- **Certification Regarding Unpaid Federal Tax Liability:** If the proposer is a corporation, the AOR (or equivalent) is required to complete a certification that the corporation has no unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted or lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability.

- **Certification Regarding Criminal Convictions:** If the proposer is a corporation, the AOR (or equivalent) is required to complete a certification that the corporation has not been convicted of a felony criminal violation under any Federal law within the 24 months preceding the date on which the certification is signed.

- **Certification Regarding Dual Use Research of Concern:** The AOR is required to complete a certification that the organization will be or is in compliance with all aspects of the *United States Government Policy for Institutional Oversight of Life Sciences Dual Use Research of Concern.*

[13] A wide array of information exists to help inform development of an institution's RCR training plan. For example, many professional societies as well as governmental licensing authorities for professional scientists and engineers have adopted policies or best practices that might be usefully considered. In addition, research is illuminating existing practices surrounding ethical issues, and providing an evaluation of pedagogical innovations in ethics education.

e. Collaborators & Other Affiliations Information

The following information regarding collaborators and other affiliations must be separately provided for each individual identified as senior project personnel:

- 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, if known.

- Thesis Advisor and Postgraduate-Scholar Sponsor. A list of all persons (including their organizational affiliations, if known), with whom the individual has had an association as thesis advisor. In addition, a list of all persons with whom the individual has had an association within the last five years as a postgraduate-scholar sponsor.

The information 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.

2. Sections of the Proposal

The sections described below represent the body of a research proposal submitted to NSF. Failure to submit the required sections will result in the proposal not being accepted[14], or being returned without review. See GPG Chapter IV.B for additional information.

A full research proposal must contain the following sections. Note that the *NSF Grants.gov Application Guide* may use different naming conventions, and sections may appear in a different order than in FastLane, however, the content is the same:

a. Cover Sheet
b. Project Summary
c. Table of Contents
d. Project Description
e. References Cited
f. Biographical Sketch(es)
g. Budget and Budget Justification
h. Current and Pending Support
i. Facilities, Equipment and Other Resources
j. Special Information and Supplementary Documentation

- Data Management Plan
- Postdoctoral Mentoring Plan (if applicable)

Proposal preparation instructions for RAPID, EAGER, Ideas Lab, collaborative, equipment, conference, international travel, center, and major research equipment and facility projects may deviate from the above content requirements. Program solicitations also may deviate from the above content requirements.

[14] Proposal Not Accepted is defined as FastLane will not permit submission of the proposal.

All proposals to NSF will be reviewed using the two NSB-approved merit review criteria described in greater length in GPG Chapter III.

a. Cover Sheet

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

(1) Awardee & Project/Performance Site Primary Location

The information on the Awardee Organization is pre-filled on the Cover Sheet based on the login information entered.

(2) Program Description/Announcement/Solicitation Number

Proposers are required to select the applicable program description, announcement, or solicitation. If the proposal is not submitted in response to a specific program description, announcement, or solicitation, proposers should select "Grant Proposal Guide." 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 descriptions, announcements, or solicitations).

(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, 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 should be consistent with the nature and complexity of the proposed activity. The Foundation encourages proposers to request funding for durations of three to five years when such durations are necessary for completion of the proposed work and are technically and managerially advantageous. The requested start date should allow at least six months for NSF review, processing and decision. The PI should consult his/her organization's Sponsored Projects Office for unusual situations (e.g., a long lead time for procurement) that create problems regarding the proposed start date. Specification of a desired start date for the project is important and helpful to NSF staff; however, requests for specific start dates may not be met.

(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-PIs.

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 name(s) of the Federal agency(ies) 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 profile information provided by the organization or pulled by NSF from the SAM database and are not entered when preparing the Cover Sheet.

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.

- 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) Project/Performance Site Primary Location

If the project will be performed at the awardee organization, check the designated box. If the project, however, will be performed at a location other than the awardee, provide the following information (where applicable):

- Organization Name (identify the organization name of the primary site where the work will be performed, if different than the awardee);
- Street;
- City;
- State;
- Country; and
- 9-digit Zip Code.

For projects that support research infrastructure and tools, such as vessels, facilities, and telescopes, the project/performance site should correspond to the physical location of the research asset. For research assets or projects that are geographically distributed, the proposer should report information for the primary site, as defined by the proposer. For example, proposals for the operations and maintenance of research vessels may list the project/performance site as the vessel’s home port.

(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) (Note: this box is applicable only to proposals submitted to the Biological Sciences Directorate.)
- Disclosure of Lobbying Activities (See GPG II.C.1.e)
- Proprietary or Privileged Information (See GPG I.D.3 & II.C.1.d)
- Historic Places (See GPG II.C.2.j)
- Vertebrate Animals[15] (See GPG II.D.7)
- Human Subjects[16] (See GPG II.D.8)
- International Activities Country Name(s) -- For each proposal that describes an international activity, proposers should list the primary countries involved. A maximum of five countries may be listed. An international activity is defined as research, training, and/or education carried out in cooperation with foreign counterparts either overseas or in the US using virtual technologies. Proposers also should enter the country/countries with which project participants will engage and/or travel to attend international conferences. If the specific location of the international conference is not known at the time of the proposal submission, proposers should enter "Worldwide". (See GPG II.C.2.j)

b. Project Summary

Each proposal must contain a summary of the proposed project not more than one page in length. The Project Summary consists of an overview, a statement on the intellectual merit of the proposed activity, and a statement on the broader impacts of the proposed activity.

The overview includes a description of the activity that would result if the proposal were funded and a statement of objectives and methods to be employed. The statement on intellectual merit should describe the potential of the proposed activity to advance knowledge. The statement on broader impacts should describe the potential of the proposed activity to benefit society and contribute to the achievement of specific, desired societal outcomes.

The Project Summary should be written in the third person, informative to other persons working in the same or related fields, and, insofar as possible, understandable to a scientifically or technically literate lay reader. It should not be an abstract of the proposal.

The Project Summary may **ONLY** be uploaded as a Supplementary Document if use of special characters is necessary. Such Project Summaries must be formatted with separate headings for Overview, Intellectual Merit and Broader Impacts. Failure to include these headings will result in the proposal being returned without review.

c. Table of Contents

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

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

(i) Content

The Project Description should provide a clear statement of the work to be undertaken and must include the objectives for the period of the proposed work and expected significance; the relationship of this work to the present state of knowledge in the field, as well as to work in progress by the PI under other support.

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. Proposers should address what they want to do, why they want to do it, how they plan to do it, how they will know if they succeed, and what benefits could accrue if the project is successful. The project activities may be based on previously established and/or innovative methods and approaches, but in either case must be well justified. These issues apply to both the technical aspects of the proposal and the way in which the project may make broader contributions.

[15] If the proposal includes use of vertebrate animals, supplemental information is required. See GPG Chapter II.D.7 for additional information.
[16] If the proposal includes use of human subjects, supplemental information is required. See GPG Chapter II.D.8 for additional information.

The Project Description must contain, as a separate section within the narrative, a section labeled "Broader Impacts". This section should provide a discussion of the broader impacts of the proposed activities. Broader impacts may be accomplished through the research itself, through the activities that are directly related to specific research projects, or through activities that are supported by, but are complementary to the project. NSF values the advancement of scientific knowledge and activities that contribute to the achievement of societally relevant outcomes. Such outcomes include, but are not limited to: full participation of women, persons with disabilities, and underrepresented minorities in science, technology, engineering, and mathematics (STEM); improved STEM education and educator development at any level; increased public scientific literacy and public engagement with science and technology; improved well-being of individuals in society; development of a diverse, globally competitive STEM workforce; increased partnerships between academia, industry, and others; improved national security; increased economic competitiveness of the US; and enhanced infrastructure for research and education.

Plans for data management and sharing of the products of research, including preservation, documentation, and sharing of data, samples, physical collections, curriculum materials and other related research and education products should be described in the Special Information and Supplementary Documentation section of the proposal (see GPG Chapter II.C.2.j for additional instructions for preparation of this section).

(ii) Page Limitations and Inclusion of Uniform 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 **must 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 deleted between the time of submission and the time of review.

Conformance to the 15-page limit 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 proposal has received NSF funding with a start date[17] in the past five years (including any current funding and no cost extensions), information on the award is required for each PI and co-PI, regardless of whether the support was directly related to the proposal or not. In cases where the PI or co-PI has received more than one award (excluding amendments to existing awards), they need only report on the one award most closely related to the proposal. Funding includes not just salary support, but any funding awarded by NSF. NSF awards such as standard or continuing grants, Graduate Research Fellowship, Major Research Instrumentation, travel, conference, and center awards, etc., are subject to this requirement.

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 accomplishments, supported by the award. The results must be separately described under two distinct headings: Intellectual Merit and Broader Impacts;

(d) a listing of the publications resulting from the NSF award (a complete bibliographic citation for each publication must be provided either in this section or in the References Cited section of the proposal); if none, state "No publications were produced under this award."

[17] Previously referred to as the effective date.

(e) evidence of research products and their availability, including, but not limited to: data, publications, samples, physical collections, software, and models, as described in any Data Management Plan; 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. 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 in the Facilities, Equipment and Other Resources section of the proposal (see GPG Chapter II.C.2.i) and documented in a letter of collaboration from each collaborator. Such letters should be provided in the supplementary documentation section of the FastLane Proposal Preparation Module and follow the format instructions specified in GPG Chapter II.C.2.j. Collaborative activities that are identified in the budget should follow the instructions in GPG Chapter II.D.

(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

See GPG Chapter V for guidance 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. (See also GPG Chapter II.C.2.d.(iii)(d)) If the proposer has a website address readily available, that information should be included in the citation. 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 is not considered to be in violation of NSF proposal preparation guidelines and the proposal will still be reviewed.

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 personnel. (See GPG Exhibit II-6 for the definitions of Senior Personnel.) Proposers may elect to use third-party solutions, such as NIH's SciENcv to develop and maintain their biographical sketch. However, proposers are advised that they are still responsible for ensuring that biographical sketches created using third-party solutions are compliant with NSF proposal preparation requirements.

The following information must be provided in the order and format specified below. Inclusion of additional information beyond that specified below may result in the proposal being returned without review.

Do not submit any personal information in the biographical sketch. This includes items such as: home address; home telephone, fax, or cell phone numbers; home e-mail address; drivers' license numbers; marital status; personal hobbies; and the like. Such personal information is not appropriate for the biographical sketch and is not relevant to the merits of the proposal. NSF is not responsible or in any way liable for the release of such material. (See also GPG Chapter III.H).

(a) Professional Preparation

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

Undergraduate Institution(s)	Location	Major	Degree & Year
Graduate Institution(s)	Location	Major	Degree & Year
Postdoctoral Institution(s)	Location	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) Products

A list of: (i) up to five products most closely related to the proposed project; and (ii) up to five other significant products, whether or not related to the proposed project. Acceptable products must be citable and accessible including but not limited to publications, data sets, software, patents, and copyrights. Unacceptable products are unpublished documents not yet submitted for publication, invited lectures, and additional lists of products. Only the list of ten will be used in the review of the proposal.

Each product must include full citation information including (where applicable and practicable) names of all authors, date of publication or release, title, title of enclosing work such as journal or book, volume, issue, pages, website and URL or other Persistent Identifier.

If only publications are included, the heading "Publications" may be used for this section of the Biographical Sketch.

(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 STEM; and service to the scientific and engineering community outside of the individual's immediate organization.

In FastLane, biographical sketches for senior personnel may no longer be grouped together and uploaded in a single PDF file associated with the PI. Each individual's biographical sketch must be uploaded as a single PDF file or inserted as text associated with that individual.

(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. Such information should be clearly identified as "Other Personnel" biographical information and uploaded as a single PDF file in the Other Supplementary Documents section 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.

Such information should be clearly identified as "Equipment Proposal" biographical information and uploaded as a single PDF file in the Other Supplementary Documents section of the proposal.

g. Budget and Budget Justification

Each proposal must contain a budget for each year of support requested. The budget justification must be no more than three pages per proposal. The amounts for each budget line item requested must be documented and justified in the budget justification as specified below. For proposals that contain a subaward(s), **each subaward** must include a separate budget justification of 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 2 CFR § 200, Subpart E, NSF policy, and/or the program solicitation. For-profit entities are subject to the cost principles contained in the Federal Acquisition Regulation, Part 31. 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.

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

(a) Senior 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 the salary compensation requested in the proposal budget for senior 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 2 CFR § 200, Subpart E. 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 budget.[18] Under normal rebudgeting authority, as described in AAG Chapters II and V, an awardee can internally approve an increase or decrease in person months devoted to the project after an award is made, even if doing so results in salary support for senior personnel exceeding the two month salary policy. No prior approval from NSF is necessary as long as that change would not cause the objectives or scope of the project to change. NSF prior approval is necessary if the objectives or scope of the project change.

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

[18]NSF awardees remain subject to the provisions of OMB M-01-06, "*Clarification of OMB A-21 Treatment of Voluntary Uncommitted Cost Sharing and Tuition Remission Costs*," regarding requirements for committing and tracking "some level" of faculty (or senior researcher) effort as part of the organized research base.

(b) Administrative and Clerical Salaries & Wages Policy

In accordance with 2 CFR § 200.413, the salaries of administrative and clerical staff should normally be treated as indirect (F&A) costs. Direct charging of these costs may be appropriate only if all the conditions identified below are met:

(i) Administrative or clerical services are integral to a project or activity;
(ii) Individuals involved can be specifically identified with the project or activity;
(iii) Such costs are explicitly included in the approved budget or have the prior written approval of the cognizant NSF Grants Officer; and
(iv) The costs are not also recovered as indirect costs.

Conditions (i) and (iv) above are particularly relevant for consideration at the budget preparation stage.

(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 consistency with the NSF cost sharing policy, if person months will be requested for senior personnel, a corresponding salary amount must be entered on the budget. If no person months and no salary are being requested for senior personnel, they should be removed from Section A of the budget. Their name(s) will remain on the Cover Sheet and the individual(s) role on the project should be described in the Facilities, Equipment and Other Resources section of the proposal.

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. Compensation classified as salary payments must be requested in the salaries and wages category. 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.

(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 budget. The box for "Proprietary or Privileged Information" must be checked on the Cover Sheet when the proposal contains confidential budgetary information.[19]

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

If the proposer's usual accounting practices provide that its contributions to employee benefits (leave, employee insurance, social security, retirement, other payroll-related taxes, 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. They also may be paid based on actual costs for individual employees, if that institutional policy has been approved by the cognizant federal agency. See 2 CFR § 200.431 for the definition and allowability of inclusion of fringe benefits on a proposal budget.

[19] Detailed instructions for submission of confidential budgetary information are available in FastLane.

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

Equipment is defined as tangible personal property (including information technology systems) having a useful life of more than one year and a per-unit acquisition cost which equals or exceeds the lesser of the capitalization level established by the proposer for financial statement purposes, or $5,000. 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 will be 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 office equipment and furnishings, and information technology equipment and systems are typically not eligible for direct cost support. 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. Any request to support such items must be clearly disclosed in the proposal budget, justified in the budget justification, and be included in the NSF award budget.

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

(a) General

Travel and its relation to the proposed activities must be specified, itemized and justified 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. Travel support for dependents of key project personnel may be requested only when the travel is for a duration of six months or more either by inclusion in the approved budget or with the prior written approval of the cognizant NSF Grants and Agreements Officer. Temporary dependent care costs above and beyond regular dependent care that directly result from travel to conferences are allowable costs provided that the conditions established in 2 CFR § 200.474 are met.

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

(b) Domestic Travel

Domestic travel includes travel within and between the US, its territories and possessions.[20]

(c) Foreign Travel

Travel outside the areas specified above is considered foreign travel. 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.

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

This budget category refers to direct costs for items such as stipends or subsistence allowances, travel allowances, and registration fees paid to or on behalf of participants or trainees (but not employees) in connection with NSF-sponsored conferences or training projects. Any additional categories of participant support costs other than those described in 2 CFR § 200.75 (such as incentives, gifts, souvenirs, t-shirts and memorabilia), must be justified in the budget justification, and such costs will be closely scrutinized by NSF. (See also GPG Chapter II.D.9) 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

[20] According to the IRS, US territories and possessions are as follows: Puerto Rico, US Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, Midway Island, Wake Island, Palmyra Island, Howland Island, Johnston Island, Baker Island, Kingman Reef, Jarvis Island, and other US islands, cays, and reefs that are not part of any of the fifty states. See also: http://www.irs.gov/Individuals/International-Taxpayers/Persons-Employed-In-U.S.-Possessions.

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.

To help defray the costs of participating in a conference or training activity, funds may be proposed for payment of stipends, per diem or subsistence allowances, based on the type and duration of the activity. Such allowances must be reasonable, in conformance with the policy of the proposing organization and limited to the days of attendance at the conference plus the actual travel time required to reach the conference location. Where meals or lodgings are furnished without charge or at a nominal cost (e.g., as part of the registration fee), the per diem or subsistence allowance should be correspondingly reduced. Although local participants may participate in conference meals and coffee breaks, funds may not be proposed to pay per diem or similar expenses for local participants in the conference.

Funds may be requested for the travel costs of participants. If so, the restrictions regarding class of accommodations and use of US-Flag air carriers are applicable.[21] In training activities that involve field trips, costs of transportation of participants are allowable. The number of participants to be supported must be entered in the parentheses on the proposal budget. Participant support costs must be specified, itemized and justified in the budget justification section of the proposal. Indirect costs (F&A) are not allowed on participant support costs. Participant support costs must be accounted for separately should an award be made.

(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, and service charges. 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 (including Costs of Computing Devices) (Line G1 on the Proposal Budget)

The proposal budget justification should indicate the general types of expendable materials and supplies required. Supplies are defined as all tangible personal property other than those described in paragraph (d)(iii) above. A computing device is considered a supply if the acquisition cost is less than the lesser of the capitalization level established by the proposer or $5,000, regardless of the length of its useful life. In the specific case of computing devices, charging as a direct cost is allowable for devices that are essential and allocable, but not solely dedicated, to the performance of the NSF award. 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.

(c) Consultant Services (also referred to as Professional Service Costs) (Line G3 on the Proposal Budget)

The proposal budget may request costs for professional and consultant services. Professional and consultant services are services rendered by persons who are members of a particular profession or possess a special skill, and who are not officers or employees of the proposing organization. Costs of professional and consultant services are allowable when reasonable in relation to the services rendered and when not contingent upon recovery of costs from the Federal government. Anticipated services must be justified and information furnished on each individual's expertise, primary organizational affiliation, normal daily compensation rate, and number of

[21] See AAG Chapter VI.F and Grant General Conditions (GC-1) Article 10 for additional information on travel restrictions.

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. Additional information on the allowability of consultant or professional service costs is available in 2 CFR § 200.459. In addition to other provisions required by the proposing organization, all contracts made under the NSF award must contain the applicable provisions identified in 2 CFR § 200 Appendix II.

(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. As noted in GPG Chapter II.C.2.g(iii), general purpose (such as word processing, spreadsheets, communication) computer equipment should not be requested. Note: See paragraph (a) above for guidance on acquisition of computing devices.

(e) Subawards[22] (Line G5 on the Proposal Budget)

Except for the purchase of materials and supplies, equipment or general support services allowable under the grant, no portion of the proposed activity may be subawarded, transferred, or contracted out to another organization without written prior NSF authorization. Such authorization must be provided either through inclusion of the subaward(s) on an NSF award budget or by receiving written prior approval from the cognizant NSF Grants and Agreements Officer.

If known at the time of proposal submission, the intent to enter into such arrangements must be disclosed in the proposal. A separate budget and a budget justification of no more than three pages, must be provided for each subrecipient, if already identified, along with a description of the work to be performed.

All proposing organizations are required to make a case-by-case determination regarding the role of a subrecipient versus contractor for each agreement it makes. 2 CFR § 200.330 provides characteristics of each type of arrangement to assist proposing organizations in making that determination. However, inclusion of a subaward or contract in the proposal budget or submission of a request after issuance of an NSF award to add a subaward or contract will document the organizational determination required.

It is NSF's expectation that, consistent with 2 CFR § 200.414, NSF awardees will use the domestic subrecipient's applicable US federally negotiated indirect cost rate(s). If no such rate exists, the NSF awardee may either negotiate a rate or will fund the subrecipient using the *de minimis* indirect cost rate recovery of 10% of modified total direct costs.

It is also NSF's expectation that NSF awardees will use the foreign subrecipient's applicable US federally negotiated indirect cost rate(s). However, if no such rate exists, the NSF awardee will fund the foreign subrecipient using the *de minimis* indirect cost rate recovery of 10% of modified total direct costs.

(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.

(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.

[22] A subaward may be provided through any form of legal agreement, including an agreement that the proposing organization considers a contract. The substance of the relationship is more important than the form of the agreement.

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

Except where specifically identified in an NSF program solicitation, the applicable US federally negotiated indirect cost rate(s) 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 2 CFR § 200, Appendix III, paragraph C.7. which specifies Federal agencies are required to use the negotiated F&A rate that is 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.

Domestic proposing organizations that do not have a current negotiated rate agreement with a cognizant Federal agency, and who are requesting more than a *de minimis* 10% recovery of modified total direct costs should prepare an indirect cost proposal based on expenditures for its most recently ended fiscal year. Based on the information provided in the indirect cost proposal, NSF may negotiate an award-specific rate to be used only on the award currently being considered for funding. No supporting documentation is required for proposed rates of 10% or less of modified total direct costs. The contents and financial data included in indirect cost proposals vary according to the make-up of the proposing organization. Instructions for preparing an indirect cost rate proposal can be found at: http://www.nsf.gov/bfa/dias/caar/docs/idcsubmissions.pdf. NSF formally negotiates indirect cost rates for the organizations for which NSF has rate cognizance. NSF does not negotiate rates for organizations that are not direct recipients of NSF funding (e.g., subrecipients). The prime recipient is responsible for ensuring that proposed subrecipient costs, including indirect costs, are reasonable and appropriate.

Foreign organizations that do not have a current US federally negotiated indirect cost rate(s) are limited to a *de minimis* indirect cost rate recovery of 10% of modified total direct costs. Foreign grantees that have a US federally negotiated indirect cost rate(s) may recover indirect costs at the current negotiated rate.

(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.

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

The National Science Board issued a report entitled "*Investing in the Future: NSF Cost Sharing Policies for a Robust Federal Research Enterprise"* (NSB 09-20, August 3, 2009), which contained eight recommendations for NSF regarding cost sharing. In implementation of the Board's recommendation, NSF's guidance[23] is as follows:

Voluntary Committed and Uncommitted Cost Sharing

Inclusion of voluntary committed cost sharing is prohibited and Line M on the proposal budget will not be available for use by the proposer. While not required by NSF, awardee organizations may, at their own discretion, continue to contribute voluntary uncommitted cost sharing to NSF-sponsored projects. These resources are not auditable by NSF and should not be included in the proposal budget or budget justification.

In order for NSF, and its reviewers, to assess the scope of a proposed project, all organizational resources necessary for, and available to, a project must be described in the Facilities, Equipment and Other Resources section of the proposal (see GPG Chapter II.C.2.i for further information). NSF Program Officers are not authorized to impose or encourage cost sharing unless such requirements are explicitly included in the program solicitation.

[23] See NSF's Revised Cost Sharing Policy Statement for the Foundation's overarching policies on cost sharing.

Mandatory Cost Sharing

Mandatory cost sharing will only be required for NSF programs when explicitly authorized by the NSF Director, the National Science Board, or legislation. A complete listing of NSF programs that require cost sharing is available on the NSF website at: http://www.nsf.gov/bfa/dias/policy/. In those rare instances, cost sharing requirements will be clearly identified in the solicitation and must be included on Line M of the proposed budget. For purposes of budget preparation, the cumulative cost sharing amount must be entered on Line M of the first year's budget. Should an award be made, the organization's cost sharing commitment, as specified on the first year's approved budget, must be met prior to the award end date.

Such cost sharing will be an eligibility, rather than a review criterion. Proposers are advised not to exceed the mandatory cost sharing level or amount specified in the solicitation.[24]

When mandatory cost sharing is included on Line M, and accepted by the Foundation, the commitment of funds becomes legally binding and is subject to audit. When applicable, the estimated value of any in-kind contributions also should be included on Line M. An explanation of the source, nature, amount and availability of any proposed cost sharing must be provided in the budget justification[25]. It should be noted that contributions derived from other Federal funds or counted as cost sharing toward projects of another Federal agency must not be counted towards meeting the specific cost sharing requirements of the NSF award.

Failure to provide the level of cost sharing required by the NSF solicitation and reflected in the NSF award budget may result in termination of the NSF award, disallowance of award costs and/or refund of award funds to NSF by the awardee.

(xii) Allowable and Unallowable Costs

2 CFR § 200, Subpart E provides comprehensive information regarding costs allowable under Federal awards. The following categories of unallowable costs are highlighted because of their sensitivity:

(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 specifically authorized by 2 CFR § 200.474.

(b) Meals and Coffee Breaks

No funds may be requested for meals or coffee breaks for intramural meetings of an organization or any of its components, including, but not limited to, laboratories, departments and centers. (See 2 CFR 200.432, for additional information on the charging of certain types of costs generally associated with conferences supported by NSF.)

(c) Alcoholic Beverages

No NSF funds may be spent on alcoholic beverages.

h. Current and Pending Support

This section of the proposal calls for required information on all current and pending support for ongoing projects and proposals, **including this project**, and any 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, or internal funds allocated toward specific

[24] For further information on procedures for inclusion of programmatic cost sharing in an NSF solicitation, see http://www.nsf.gov/bfa/dias/policy/csdocs/principles.pdf.

[25] 2 CFR § 200.306 describes criteria and procedures for the allowability of cash and in-kind contributions in satisfying cost sharing and matching requirements.

projects) 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. The Biological Sciences Directorate exception to this policy is 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.

In FastLane, current and pending support for all senior personnel may no longer be grouped together and uploaded in a single PDF file associated with the PI. Each individual's current and pending support must be uploaded as a single PDF file or inserted as text associated with that individual.

i. Facilities, Equipment and Other Resources

This section of the proposal is used to assess the adequacy of the resources available to perform the effort proposed to satisfy both the Intellectual Merit and Broader Impacts review criteria. Proposers should describe only those resources that are directly applicable. Proposers should include an aggregated description of the internal and external resources (both physical and personnel) that the organization and its collaborators will provide to the project, should it be funded. Such information must be provided in this section, in lieu of other parts of the proposal (e.g., budget justification, project description). The description should be narrative in nature and must not include any quantifiable financial information. Reviewers will evaluate the information during the merit review process and the cognizant NSF Program Officer will review it for programmatic and technical sufficiency.

Although these resources are not considered cost sharing as defined in 2 CFR § 200.306, the Foundation does expect that the resources identified in the Facilities, Equipment, and Other Resources section will be provided, or made available, should the proposal be funded. AAG Chapter II.B.1 specifies procedures for use by the awardee when there are postaward changes to objectives, scope or methods/procedures.

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.

- Postdoctoral Researcher Mentoring Plan. Each proposal[26] that requests funding to support **postdoctoral researchers**[27] must include, as a supplementary document, a description of the mentoring activities that will be provided for such individuals. In no more than one page, the mentoring plan must describe the mentoring that will be provided to all postdoctoral researchers supported by the project, regardless of whether they reside at the submitting organization, any subrecipient organization, or at any organization participating in a simultaneously submitted collaborative project. Proposers are advised that the mentoring plan must not be used to circumvent the 15-page Project Description limitation. See GPG Chapter II.D.5 for additional information on collaborative proposals. Mentoring activities provided to postdoctoral researchers supported on the project will be evaluated under the Broader Impacts review criterion.

[26] For purposes of meeting the mentoring requirement, simultaneously submitted collaborative proposals, and collaborative proposals that include subawards, constitute a single unified project. Therefore, only one mentoring plan may be submitted for the entire project.

[27] In situations where a postdoctoral researcher is listed in Section A of the NSF Budget, and is functioning in a Senior Personnel capacity (i.e., responsible for the scientific or technical direction of the project), a mentoring plan is not required.

Examples of mentoring activities include, but are not limited to: career counseling; training in 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.

- Plans for data management and sharing of the products of research. Proposals must include a supplementary document of no more than two pages labeled "Data Management Plan". This supplementary document should describe how the proposal will conform to NSF policy on the dissemination and sharing of research results (see AAG Chapter VI.D.4), and may include:

  1. the types of data, samples, physical collections, software, curriculum materials, and other materials to be produced in the course of the project;

  2. the standards to be used for data and metadata format and content (where existing standards are absent or deemed inadequate, this should be documented along with any proposed solutions or remedies);

  3. policies for access and sharing including provisions for appropriate protection of privacy, confidentiality, security, intellectual property, or other rights or requirements;

  4. policies and provisions for re-use, re-distribution, and the production of derivatives; and

  5. plans for archiving data, samples, and other research products, and for preservation of access to them.

  Data management requirements and plans specific to the Directorate, Office, Division, Program, or other NSF unit, relevant to a proposal are available at: http://www.nsf.gov/bfa/dias/policy/dmp.jsp. If guidance specific to the program is not available, then the requirements established in this section apply.

  Simultaneously submitted collaborative proposals and proposals that include subawards are a single unified project and should include only one supplemental combined Data Management Plan, regardless of the number of non-lead collaborative proposals or subawards included.

  A valid Data Management Plan may include only the statement that no detailed plan is needed, as long as the statement is accompanied by a clear justification. Proposers who feel that the plan cannot fit within the limit of two pages may use part of the 15-page Project Description for additional data management information. Proposers are advised that the Data Management Plan must not be used to circumvent the 15-page Project Description limitation. The Data Management Plan will be reviewed as an integral part of the proposal, considered under Intellectual Merit or Broader Impacts or both, as appropriate for the scientific community of relevance.

- Rationale for performance of all or part of the project off-campus or away from organizational headquarters.

- Documentation of collaborative arrangements of significance to the proposal through letters of collaboration. (See GPG Chapter II.C.2.d.(iv).) Letters of collaboration should be limited to stating the intent to collaborate and should not contain endorsements or evaluation of the proposed project. The recommended format for letters of collaboration is as follows:

  "If the proposal submitted by Dr. [insert the full name of the Principal Investigator] entitled [insert the proposal title] is selected for funding by NSF, it is my intent to collaborate and/or commit resources as detailed in the Project Description or the Facilities, Equipment or Other Resources section of the proposal."

  While letters of collaboration are permitted, 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. Letters of support are typically from a key stakeholder such as an organization, collaborator or Congressional

Representative, and are used to convey a sense of enthusiasm for the project and/or to highlight the qualifications of the PI or co-PI. 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.

- In order for NSF to comply with federal environmental statutes (including, but not limited to, the National Environmental Policy Act [42 U.S.C. §§ 4321, *et seq*.], the National Historic Preservation Act [16 U.S.C. § 470, *et seq*.], and the Endangered Species Act [16 U.S.C. §§ 1531, *et seq*.], the proposer may be requested to submit supplemental post-proposal submission information to NSF in order that a reasonable and accurate assessment of environmental impacts by NSF may be made.

- International Activities

  1. International Research/Education/Training Activities. For each proposal that describes an international activity, PIs should list the primary countries involved on the Cover Sheet. An international activity is defined as research, training, and/or education carried out in cooperation with foreign counterparts either overseas or in the US using virtual technologies.

  2. International Conferences. Proposers also should enter on the Cover Sheet the country/countries with which project participants will engage and/or travel to attend international conferences. If the specific location of the international conference is not known at the time of the proposal submission, proposers should enter "Worldwide" on the Cover Sheet.

  3. 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. Advance coordination should minimize disruption of the research. (See AAG Chapter VI.B.4.)

  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.7 and II.D.8).

- Special components in new proposals or in requests for supplements, such *as Facilitation Awards for Scientists and Engineers with Disabilities (FASED), Research Opportunity Awards (ROAs), Research Experiences for Undergraduates (REUs), or Facilitating Research at Primarily Undergraduate Institutions* (RUIs and ROAs). (See GPG Chapter II.D.4 for information on FASED, and for the other programs identified, consult the relevant program solicitation.)

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

k. Appendices

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

D. Special Guidelines

1. Rapid Response Research (RAPID) Proposals

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 and must be no more than five pages. It must 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 “RAPID” proposal type must be selected in the proposal preparation module in FastLane.

- 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 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 $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.”

2. EArly-concept Grants for Exploratory Research (EAGER) Proposals

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 also may 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 and must be no more than eight pages. It must 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 “EAGER” proposal type must be selected in the proposal preparation module in FastLane.

- 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 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.”

3. Ideas Lab

The "Ideas Lab" is a funding mechanism designed to support the development and implementation of creative and innovative project ideas that have the potential to transform research paradigms and/or solve intractable problems. An Ideas Lab may be run independently, or in parallel, with the issuance of an NSF funding opportunity on the same topic. These project ideas typically will be high-risk/high-impact, as they represent new and unproven ideas, approaches and/or technologies. This mechanism was developed collaboratively within NSF, modeled on the "sandpit" workshops that are a key component of the United Kingdom Research Council’s "IDEAs Factory" program.

The implementation of the Ideas Lab mechanism is a four-stage process as described below:

a. Stage 1: Selection of Panelists

There are two separate panels convened for an Ideas Lab: a selection panel and an Ideas Lab panel. The role of the selection panel is to provide advice on the selection of participants. The role of the Ideas Lab panel is to provide an assessment of the project ideas developed there. The individuals selected to participate in each of these panels are subject matter experts for the specific topic of the Ideas Lab. All panelists are barred from receiving any research funding through, or in any other way collaborating on, the particular Ideas Lab in which they are involved.

b. Stage 2: Selection of Participants

A "call for participants" solicitation that describes the specific focus of the Ideas Lab will be issued. The solicitation will specify the content and submission instructions for such applications.

The project description is limited to two pages and should include information regarding the applicant’s specific expertise and interest in the topic area, as well as about certain personal attributes that enhance the success of the Ideas Lab workshop mechanism (e.g., experience and interest in working in teams, communication skills, level of creativity, willingness to take risks). Applicants also must include a Biographical Sketch and Current and Pending Support information (both of which must be prepared in accordance with standard NSF formatting guidelines). All other elements of a "full proposal" are waived (i.e., Project Summary, References Cited, Budget and Budget Justification, Facilities, Equipment and Other Resources). The application must be submitted as a preliminary proposal in FastLane. No appendices or supplementary documents may be submitted.

Applicants are notified electronically of NSF’s decision regarding whether they are invited or not invited to participate in the Ideas Lab. Applicants will be informed about the context of the review and the criteria that were used to assess the applications in the form of a panel summary, but will not receive individual reviews or other review-related feedback.

c. Stage 3: Ideas Lab

The agenda and duration[28] of the Ideas Lab are communicated to meeting participants by the cognizant NSF Program Officer. Anonymous real-time peer review involving the participants and the Ideas Lab panel is incorporated into the workshop format, providing iterative constructive feedback during the development of project ideas. The Ideas Lab concept incorporates a "guided creativity" process, thus the use of a facilitator(s) is included, both to guide the creation of interdisciplinary teams and the creative development of ideas, and to

[28] Ideas Labs are generally one to five days in duration.

ensure that the workshop progresses in a productive manner. At the end of the Ideas Lab, the Ideas Lab panel will provide a consensus report summarizing their evaluation of each project idea. The recommendations of the Ideas Lab panel are advisory to NSF. Within seven to fourteen days following the Ideas Lab, the NSF Program Officers will determine which project ideas are meritorious and should be invited as full proposals. At the NSF Program Officers' discretion (subject to Division Director concurrence), they may invite none, some, or all of the project ideas as full proposals, with the final funding decision to occur after the full proposals have been received and reviewed. Invited full proposals (which are prepared in accordance with standard research proposal formatting guidelines) must be submitted within two months of receiving NSF notification after the Ideas Lab.

d. Stage 4: Review and recommendation of full proposals

Invited proposals will be reviewed internally by the cognizant NSF Program Officers, the Ideas Lab panelists, and other external reviewers, as appropriate. Resulting awards will be administered in accordance with standard NSF policies and procedures, including no-cost extensions and supplemental funding requests. Renewed funding of an Ideas Lab award may be requested only through submission of a full proposal that will be subject to external merit review. Such proposals would be designated as an "Ideas Lab renewal."

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

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

- to reduce or remove barriers to participation in research and training by persons with physical disabilities by providing special equipment and assistance under awards made by NSF; and

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

Persons with disabilities eligible for facilitation awards include PIs, other senior 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 grant terms and conditions, 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 funding requests should be submitted 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.

5. 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. Note, however, that if awarded, a single award would be made to the submitting organization, with any collaborators listed as subawards. (See GPG Chapter II.C.2.g(vi)(e) for additional instructions on preparation of this type of proposal.)

If a proposed subaward includes funding to support postdoctoral researchers, the mentoring activities to be provided for such individuals must be incorporated in the supplemental mentoring plan outlined in GPG Chapter II.C.2.j.

b. Submission of a collaborative proposal from multiple organizations

Simultaneous submission of proposals allows multiple organizations to submit a unified set of certain proposal sections, as well as information unique to each organization as specified below. All collaborative proposals arranged as separate submissions from multiple organizations must be submitted via FastLane. For these proposals, the project title must begin with the words "Collaborative Research:” If funded, each organization bears responsibility for a separate award.

Required sections of the proposal differ based on the organization’s role. The following sections are required for a collaborative proposal submitted by:

Lead Organization

- Cover Sheet
- Project Summary
- Table of Contents (automatically generated)
- Project Description
- References Cited
- Biographical Sketch(es)
- Budget and Budget Justification
- Current and Pending Support
- Facilities, Equipment and Other Resources
- Data Management Plan
- Postdoctoral Mentoring Plan (if applicable)

Non-Lead Organization

- Cover Sheet
- Table of Contents (automatically generated)
- Biographical Sketch(es)
- Budget and Budget Justification
- Current and Pending Support
- Facilities, Equipment and Other Resources

See GPG Chapter II.C.2.j for additional guidance on mentoring and data management plan requirements for collaborative proposals. NSF will combine the proposal submission for printing or electronic viewing.

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

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

(ii) The lead organization must then enter each non-lead organization(s) proposal PIN and temporary proposal ID into the FastLane lead proposal by using the "Link Collaborative Proposals" option found on the FastLane "Form Preparation" screen. Given that such separately submitted proposals constitute a “single” proposal submission to NSF, it is imperative that the proposals be submitted within a reasonable timeframe to one another.

(iii) **All components** of the collaborative proposal must meet any established deadline date and time[30], and failure to do so may result in the entire collaborative proposal being returned without review.

(iv) If funded, both lead and non-lead organizations are required to submit separate annual and final project reports. These reports should reference the work of the collaborative, while focusing on the distinct work conducted at each funded organization.

6. Equipment Proposals

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

An equipment proposal must contain all of the following proposal sections:

- Cover Sheet

- Project Summary: GPG Chapter II.C.2.b should be consulted to prepare this portion of the proposal.

- Project Description (not to exceed 15 pages) that includes:

[29] Detailed instructions for the preparation and submission of collaborative proposals are available in FastLane.
[30] 5 p.m., submitter’s local time

a. an overall acquisition plan which discusses arrangements for acquisition, maintenance and operation. 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;

b. a description, from each potential major user, of the project(s) for which the equipment will be used. This description must be succinct, not necessarily as detailed as in a full research proposal, and must emphasize the intrinsic merit of the activity and the importance of the equipment to it. A brief summary will suffice for auxiliary users; and

c. a description of comparable equipment already at the proposing organization(s), if applicable, and an explanation of why it cannot be used. This includes comparable government-owned equipment that is on-site.

- Biographical Sketch(es) of the person(s) who will have overall responsibility for maintenance and operation and a brief statement of qualifications. (GPG Chapter II.C.2.f should be consulted to prepare this portion of the proposal; also see GPG II.C.2.f(iii)).

- Proposal Budget and Budget Justification: An annual budget and budget justification for the operation, maintenance and administration of the proposed equipment (GPG Chapter II.C.2.g should be consulted to prepare this portion of the proposal).

- Current and Pending Support: GPG Chapter II.C.2.h should be consulted to prepare this portion of the proposal.

- Facilities, Equipment and Other Resources that includes a description of the physical facility, including floor plans or other appropriate information, where the equipment will be located; a narrative description of the source of funds available for operation and maintenance of the proposed equipment; a brief description of other support services available, and a statement of why the equipment is severable or non-severable from the physical facility (GPG Chapter II.C.2.i should be consulted to prepare this portion of the proposal).

- Data Management Plan: GPG Chapter II.C.2.j should be consulted to prepare this portion of the proposal.

- Postdoctoral Mentoring Plan (if applicable): GPG Chapter II.C.2.j should be consulted to prepare this portion of the proposal.

These proposals normally compete with proposals for research or education projects.[31]

7. 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.

In the case of research involving the study of wildlife in the field or in the laboratory, for the provision in the PHS Assurance for Institutional Commitment (Section II) that requires the organization to establish and maintain a program for activities involving animals in accordance with the *Guide for the Care and Use of Laboratory Animals* (Guide), the organization has established and will maintain a program for activities involving animals according to the Guide. The organization will follow recommendations specified in the Guide for details involving laboratory animals, and taxon-specific guidelines approved by the American Society of Ichthyologists and

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

Herpetologists, the American Society of Mammalogists, and the Ornithological Council, as is appropriate for the taxon to be studied.[32]

b. Sufficient information must be provided within the 15-page Project Description to enable reviewers to evaluate the:

(i) rationale for involving animals;
(ii) choice of species and number of animals to be used;
(iii) description of the proposed use of the animals;
(iv) exposure of animals to discomfort, pain, or injury; and
(v) description of any euthanasia methods to be used.

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), US Department of Agriculture. A current listing of licensed animal dealers also may 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 US 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 explicitly listing the proposer's name and referencing the title of the award to confirm 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 Cover Sheet:

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

(ii) The date of IACUC approval of the animal-use protocol covering the proposed work (if obtained) must be identified in the space provided.

(iii) The PHS Approved Animal Welfare Assurance Number must be entered 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. If a decision is made to fund the proposal, the organization must provide a signed copy of the official IACUC approval letter to the cognizant NSF Program Officer before an award can be issued. The approval letter must affirm that an animal-use protocol covering the proposed activities has been approved, and should explicitly list the proposer's name, the title and number of the NSF proposal, and the date of IACUC approval.

f. For fellowship proposals submitted by individuals that involve use of vertebrate animals, a copy of the approval letter from the IACUC (including Assurance Number and organizational signature) should be included in the Supplementary Documentation section of the proposal or sent directly to the cognizant NSF Program Officer. The letter should indicate approval of the proposed activities.

If IACUC approval has not been obtained prior to submission, the proposer should indicate "Pending" in the space provided for the approval date. If a decision is made to fund the proposal, the organization must provide a signed copy of the official IACUC approval letter to the cognizant program. The letter should indicate approval of the proposed activities, explicitly listing the proposer's name and referencing the title of the NSF proposal, and

[32] Guidelines to the Use of Wild Birds in Research; Guidelines of the American Society of Mammalogists for the Use of Wild Mammals in Research; Guidelines for the Use of Fishes in Research; and Guidelines for the Use of Live Amphibians and Reptiles in Field and Laboratory Research.

must be submitted prior to an award being issued.

See also AAG Chapter VI.B.3 for additional information on the administration of awards that utilize vertebrate animals. Note that for some types of vertebrate animals (e.g., non-human primates), additional review may be required.

8. 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 certification of exemption is provided after submission of the proposal and before the award is issued, the exemption number corresponding to one or more of the exemption categories also must be included in the documentation provided to NSF.

The only acceptable IRB approval documents are those that approve a human subjects research protocol; approvals "in concept" are not acceptable. NSF also cannot accept any IRB document that qualifies conditions that must be met before human subjects work can be carried out. If IRB approval cannot be obtained at the time of the award action because the development of a human subject s research protocol requires preliminary or other conceptual work to take place, the PI should notify the cognizant NSF Program Officer assigned to the proposal. In such a case, NSF may add conditions to the award that prevent any research involving human subjects from being carried out, and otherwise restrict the drawing down of funds, until IRB approval has been obtained.

If the project involves human subjects and is to be performed outside of the US, evidence of IRB approval also is required. If there is no IRB approval provided, and the foreign country is not included in the Department of Health and Human Services, Office of Human Research Protections (OHRP), *International Compilation of Human Research Standards* (http://www.hhs.gov/ohrp/international/intlcompilation/intlcompilation.html), nor is an Assurance on file with OHRP (http://ohrp.cit.nih.gov/search/search.aspx?styp=bsc), NSF may decline to support the project.

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

(i) The box for "Human Subjects" must be checked on the Cover Sheet if use of human subjects is envisioned.

(ii) 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.*

(iii) 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. If a decision is made to fund the proposal, the organization must provide a signed copy of the IRB approval letter to the cognizant program. The letter should indicate approval of the proposed activities and must be submitted prior to an award being issued.

(iv) The Federal Wide Assurance (FWA) Number that the proposer has on file with OHRP should be entered, if available.

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

9. Conference Proposals[33]

NSF supports conferences in special areas of science and engineering that bring experts together to discuss recent research or education findings or to expose other researchers or students to new research and education techniques. NSF encourages the convening in the US of major international conferences. Conferences will be supported only if equivalent results cannot be obtained at regular meetings of professional societies. Although requests for support of conferences 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 should generally be submitted at least a year in advance of the scheduled date. Conferences, 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 proposal must contain the elements identified below:

- Cover Sheet

- Project Summary (GPG Chapter II.C.2.b should be consulted to prepare this portion of the proposal).

- Project Description (not to exceed 15 pages) that includes:

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

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

c. The names of the chairperson and members of organizing committees and their organizational affiliations;

d. Information on the location and probable date(s) of the meeting and the method of announcement or invitation;

e. 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;

- Proposal Budget and Budget Justification: A budget, and budget justification for the conference that is prepared in accordance with GPG Chapter II.C.2.g. The following provides a listing of the types of costs that may be included on a conference budget. Such costs may be included only if they are specifically and clearly identified in the proposed scope of work and budget. Note that registration fees under NSF-supported conferences are considered program income. For additional information on program income associated with conferences, see AAG Chapter III.D.4.

a. Conference Facilities. Rental of facilities and necessary equipment.

b. Supplies. Expendable materials and supplies necessary for the meeting.

c. Conference Services. Costs of translation services, audio visual, webcast, and computer services for recording, transmitting and transcribing the proceedings.

d. Publication Costs. Costs of publishing the proceedings.

e. Salaries. Salaries of professional personnel, editorial and clerical assistants and other staff members in proportion to the time or effort devoted to the preparation and conduct of the conference and summarizing its results.

[33] This coverage also applies to symposia and workshop proposals.

f. Consultant Services and Speaker Fees. Reasonable fees and travel allowances and per diem (or meals provided in lieu of per diem). 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. Additional information on the allowability of consultant or professional service costs is available in 2 CFR § 200.459. In addition to other provisions required by the proposing organization, all contracts made under the NSF award must contain the applicable provisions identified in 2 CFR § 200 Appendix II.

g. Meals and Coffee Breaks. Meals that are an integral and necessary part of a conference (e.g., working meals where business is transacted). Funds may be included for furnishing a reasonable amount of hot beverages or soft drinks to conference participants and attendees during periodic coffee breaks.

h. Participant Support Costs. See GPG Chapter II.C.2.g.(v).

The following provides a listing of the types of costs that are not allowable for inclusion on a conference budget.

a. Meals and Coffee Breaks for Intramural Meetings. NSF funds may not be included or spent for meals or coffee breaks for intramural meetings of an organization or any of its components, including, but not limited to, laboratories, departments and centers, as a direct cost.

b. Entertainment. Costs of entertainment, amusement, diversion and social activities (such as tickets to shows or sporting events, meals, lodging, rentals, transportation and gratuities) are unallowable and may not be requested. Travel, meal, and hotel expenses of awardee employees who are not on travel status also are not permitted. Costs of employees on travel status are limited to those specifically authorized by 2 CFR § 200.474.

c. Alcoholic Beverages. NSF funds may not be proposed for alcoholic beverages.

- Current and Pending Support: The support requested or available from other Federal agencies and other sources. GPG Chapter II.C.2.h should be consulted to prepare this portion of the proposal.

- Facilities, Equipment and Other Resources: If there will be support from other sources for the conference, such information should be included in the Facilities, Equipment and Other Resources section of the proposal. The description should be narrative in nature and must not include any quantifiable financial information. GPG Chapter II.C.2.i should be consulted to prepare this portion of the proposal. If included, these resources will not be auditable and must not be included in the proposal budget or budget justification. A description of such support should be included in the Facilities, Equipment and Other Resources section of the proposal. (See GPG Chapter II.C.2.g.(xi) for further information.)

- Data Management Plan: Plans for management and sharing of any data products resulting from the activity. GPG Chapter II.C.2.j should be consulted to prepare this portion of the proposal.

10. International Travel Proposals

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

Group travel awards are encouraged as the primary means of support for international travel. A university, professional society or other non-profit organization may apply for funds to enable it to coordinate and support US participation in one or more international scientific meeting(s) abroad. Proposals submitted for this purpose should address the same items as those indicated for conferences (see Section 9 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. 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.

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(se) 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 organizations 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 NSF Program Officer.

12. Support for Development of Major Research Equipment and Facilities

As an integral part of its responsibility for strengthening the science and engineering infrastructure of the country, NSF provides support for the construction and operation of major research equipment and facilities. NSF depends on the research communities to provide the justification, planning, development, and implementation of facility projects. This normally occurs through National Academies studies, workshop reports, professional society activities, and other community-based mechanisms, including engineering studies and research projects related to the development of new technologies. Many of these mechanisms are funded by interested NSF Programs on the basis of merit-reviewed proposals. The construction funding mechanism depends on the scale of the proposed facility. For large facilities construction, the Major Research Equipment and Facilities Construction (MREFC) account is one option. Proposers are strongly encouraged to contact the appropriate NSF Program to discuss the availability of funding and the appropriate funding 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 supports a number of resources. For the most computationally intensive projects, the Blue Waters system at University of Illinois, Urbana/Champaign, is the most suitable. Blue Waters is designed to support a small number (~50) of research teams involved with projects requiring the most advanced computational and data resources. Currently, the allocation process for that resource is done directly via proposal submission to the cognizant Program Officer in the Division of Advanced CyberInfrastructure within the NSF Directorate for Computer & Information Science & Engineering. Proposals are reviewed for both their scientific and computational needs. The Blue Waters supercomputer provides sustained performance of 1 petaflop on a range of real-world science and engineering applications. It is one of the most powerful supercomputers in the world. Those interested should visit the Blue Waters portal (https://bluewaters.ncsa.illinois.edu/) for more details of the system's hardware and capabilities.

Yellowstone, which is part of the National Center for Atmospheric Research, is a significant resource, 1.5 petaflop peak speed, but one that is designed to meet the needs of the atmospheric and related-sciences communities. Yellowstone operates its own allocations process and those interested in obtaining time and/or storage should consult the cognizant program director in the Division of Atmospheric and Geospace Sciences within the Geosciences Directorate.

The most general set of computational and data resources funded by the NSF are accessible through the XSEDE project. XSEDE provides the integrating fabric for a collection of very powerful supercomputers, a high-throughput computing environment, high-volume data storage facilities, advanced visualization services, connected by a high-bandwidth private network, a training education and outreach program in how to use its services and an extended collaborative support program to assist researchers in using the advanced computational resources. The physical resources themselves are provided by Service Providers (SP) via separate awards from the NSF. Allocations of those resources for large projects are determined by the XSEDE

Resource Advisory Committee, which meets quarterly, using an external set of experts. Smaller requests do not require a proposal or review and a simple on-line process may be used to request such an allocation. NSF encourages prospective users to seek more information at https://www.xsede.org, where they can also register for a portal account.

14. Dual Use Research of Concern (DURC)

a. Applicability

This section applies to all research, for which NSF grant funds may be used, that potentially falls within the scope of the *US Government Policy for Institutional Oversight of Life Sciences Dual Use Research of Concern* (http://www.phe.gov/s3/dualuse/Pages/default.aspx) as published in September, 2014, hereafter referred to as the "Policy".

b. Policy

NSF is committed to preserving the benefits of life sciences research while minimizing the risk of misuse of the knowledge, information, products, or technologies provided by such research. The purpose of NSF's implementation of the Policy is to clarify proposer expectations about NSF-funded research with certain high-consequence pathogens and toxins with potential to be considered dual use research of concern.

Proposing organizations are responsible for identifying NSF-funded life sciences proposals that could potentially be considered dual use research of concern as defined in the *US Government Policy for Institutional Oversight of Life Sciences Dual Use Research of Concern* and for compliance with the requirements established in that Policy. (See also AAG Chapter VI.B.5 for additional information.)

Exhibit II-1: Proposal Preparation Checklist

It is imperative that all proposals conform to the proposal preparation and submission instructions specified in the *Grant Proposal Guide*. 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. Note that some NSF program solicitations modify the general provisions of the GPG, and in such cases, the guidelines provided in the solicitation must be followed. FastLane uses the rules specified for each type of proposal, (e.g., RAPID, EAGER, Ideas Lab, Equipment, Conference, and International Travel) to check for compliance prior to submission to NSF. Proposers are strongly advised to review the applicable sections of the GPG pertinent to the type of proposal being developed PRIOR to submission. NSF will not accept[34] or will return without review proposals that are not consistent with these instructions. See GPG Chapter IV.B for additional information.

Prior to 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:

[ ] The proposal is responsive to and compliant with the provisions in the program description, announcement, or solicitation.

[ ] If the proposal has been previously declined and is being resubmitted, the proposal has been revised to take into account the major comments from the prior NSF review.

[ ] The 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.

[ ] The proposal must be submitted by 5 p.m. submitter's local time on the established deadline date.

[ ] Single Copy Documents:

[ ] Authorization to Deviate from NSF Proposal Preparation Requirements is included (if applicable).

[ ] List of Suggested Reviewers, or Reviewers Not To Include has been provided (if applicable).

[ ] SF LLL, *Disclosure of Lobbying Activities* has been provided (if applicable).

[ ] Collaborators and other Affiliation information has been provided for each individual identified as senior project personnel.

[ ] Cover Sheet:

[ ] For interdisciplinary proposals, ensure all relevant programs are identified.

[ ] For renewal proposals, previous award numbers have been entered.

[ ] Related preliminary proposal number has been entered (if applicable).

[ ] Appropriate box(es) have been checked, and requisite information has been provided.

[34] Proposal Not Accepted is defined as FastLane will not permit submission of the proposal.

[ ] Project Summary:

[ ] The Project Summary may ONLY be uploaded as a Supplementary Document if use of special characters is necessary. Such Project Summaries must be formatted with separate headings for Overview, Intellectual Merit and Broader Impacts.

[ ] Project Description:

[ ] Project Description does not exceed the page limitations specified in the GPG or solicitation.

[ ] Project Description contains, as a separate section within the narrative, a section labeled "Broader Impacts".

[ ] Project Description is self-contained, and Uniform Resource Locators (URLs) have not been included.

[ ] Results from Prior NSF Support have been provided for PIs and co-PIs who have received NSF support within the last five years. Results related to Intellectual Merit and Broader Impacts are described under two separate, distinct headings.

[ ] References Cited:

[ ] This section includes bibliographic citations only and does not provide parenthetical information outside of the 15-page Project Description.

[ ] Each reference is in the specified format.

[ ] Biographical Sketch(es):

[ ] The content described is in accordance with the instructions, and does not contain additional information beyond that specified.

[ ] Proposal Budget:

[ ] Each budget line item is documented and justified in the budget justification.

[ ] Cost Sharing:

[ ] Unless required by an NSF program solicitation, voluntary committed cost sharing has not been included. Note that voluntary committed cost sharing is prohibited and Line M on the proposal budget will not be available for use by the proposer. While not required by NSF, proposing organizations may, at their own discretion, continue to contribute voluntary uncommitted cost sharing to NSF-sponsored projects. These resources are not auditable by NSF and should not be included in the proposal budget or budget justification.

[ ] Current and Pending Support:

[ ] All current and pending support from whatever source (e.g., Federal, State, local or foreign government agencies, public or private foundations, industrial or other commercial organizations, or internal funds allocated toward specific projects) 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).

[ ] Facilities, Equipment and Other Resources:

[ ] An aggregated description of the internal and external resources (both physical and personnel) that the organization and its collaborators will provide to the project, should it be funded, has been included.

[ ] No quantifiable financial information has been provided.

[ ] If there are no facilities, equipment or other resources identified, a statement to that effect has been included in this section of the proposal and uploaded into FastLane.

[ ] Special Information and Supplementary Documentation:

[ ] The types of information identified in GPG Chapter II.C.2.j have been included, as appropriate.

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

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 organization 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 signing the NSF Cover Sheet and submitting this proposal, the Authorized Organizational Representative 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 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, US 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 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 awardees 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 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/PROJECT DIRECTOR (PI/PD) means 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. The term "Principal Investigator" generally is used in research projects, while the term "Project Director" generally is used in centers, large facilities, and other projects. For purposes of this Guide, PI/co-PI is interchangeable with PD/co-PD.

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, Fellow, or Other Postdoctoral Position) -- 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.

Chapter III: NSF Proposal Processing and Review

Proposals received by NSF are assigned to the appropriate NSF program and are assessed to ensure that they meet NSF compliance requirements. All compliant proposals are then carefully reviewed by a scientist, engineer, or educator serving as an NSF Program Officer, and usually by three to ten other persons outside NSF either as *ad hoc* reviewers, panelists, or both, 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. In addition, Program Officers may obtain comments 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/merit_review/.

Proposal review is one step in the NSF program planning and implementation process. Embedded in this process are core strategies that are fundamental to the fulfillment of NSF's mission. More information about NSF's mission and strategies can be found in *Investing in Science, Engineering, and Education for the Nation's Future: NSF Strategic Plan for 2014-2018*. NSF's mission is particularly well-implemented through the integration of research and education and broadening participation in NSF programs, projects, and activities.

A. Merit Review Principles and Criteria

The National Science Foundation strives to invest in a robust and diverse portfolio of projects that creates new knowledge and enables breakthroughs in understanding across all areas of science and engineering research and education. To identify which projects to support, NSF relies on a merit review process that incorporates consideration of both the technical aspects of a proposed project and its potential to contribute more broadly to advancing NSF's mission "to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense; and for other purposes." NSF makes every effort to conduct a fair, competitive, transparent merit review process for the selection of projects.

1. Merit Review Principles

These principles are to be given due diligence by PIs and organizations when preparing proposals and managing projects, by reviewers when reading and evaluating proposals, and by NSF program staff when determining whether or not to recommend proposals for funding and while overseeing awards. Given that NSF is the primary federal agency charged with nurturing and supporting excellence in basic research and education, the following three principles apply:

- All NSF projects should be of the highest quality and have the potential to advance, if not transform, the frontiers of knowledge.

- NSF projects, in the aggregate, should contribute more broadly to achieving societal goals. These broader impacts may be accomplished through the research itself, through activities that are directly related to specific research projects, or through activities that are supported by, but are complementary to, the project. The project activities may be based on previously established and/or innovative methods and approaches, but in either case must be well justified.

- Meaningful assessment and evaluation of NSF funded projects should be based on appropriate metrics, keeping in mind the likely correlation between the effect of broader impacts and the resources provided to implement projects. If the size of the activity is limited, evaluation of that activity in isolation is not likely to be meaningful. Thus, assessing the effectiveness of these activities may best be done at a higher, more aggregated, level than the individual project.

With respect to the third principle, even if assessment of Broader Impacts outcomes for particular projects is done at an aggregated level, PIs are expected to be accountable for carrying out the activities described in the

funded project. Thus, individual projects should include clearly stated goals, specific descriptions of the activities that the PI intends to do, and a plan in place to document the outputs of those activities.

These three merit review principles provide the basis for the merit review criteria, as well as a context within which the users of the criteria can better understand their intent.

2. Merit Review Criteria

All NSF proposals are evaluated through use of two National Science Board approved merit review criteria. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities.

The two merit review criteria are listed below. Both criteria are to be given full consideration during the review and decision-making processes; each criterion is necessary but neither, by itself, is sufficient. Therefore, proposers must fully address both criteria. (GPG Chapter II.C.2.d.(i) contains additional information for use by proposers in development of the Project Description section of the proposal.) Reviewers are strongly encouraged to review the criteria, including GPG Chapter II.C.2.d.(i), prior to the review of a proposal.

When evaluating NSF proposals, reviewers will be asked to consider what the proposers want to do, why they want to do it, how they plan to do it, how they will know if they succeed, and what benefits could accrue if the project is successful. These issues apply both to the technical aspects of the proposal and the way in which the project may make broader contributions. To that end, reviewers will be asked to evaluate all proposals against two criteria:

- **Intellectual Merit:** The Intellectual Merit criterion encompasses the potential to advance knowledge; and

- **Broader Impacts:** The Broader Impacts criterion encompasses the potential to benefit society and contribute to the achievement of specific, desired societal outcomes.

The following elements should be considered in the review for both criteria:

1. What is the potential for the proposed activity to:

   a. Advance knowledge and understanding within its own field or across different fields (Intellectual Merit); and

   b. Benefit society or advance desired societal outcomes (Broader Impacts)?

2. To what extent do the proposed activities suggest and explore creative, original, or potentially transformative concepts?

3. Is the plan for carrying out the proposed activities well-reasoned, well-organized, and based on a sound rationale? Does the plan incorporate a mechanism to assess success?

4. How well qualified is the individual, team, or organization to conduct the proposed activities?

5. Are there adequate resources available to the PI (either at the home organization or through collaborations) to carry out the proposed activities?

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 NSB-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. (Note: The FastLane Proposal File Update module must not be used for submission of revised budgets. All budgetary revisions must be submitted through use of the FastLane Revised Proposal Budget Module. See Section D. below for further information.) A request for a proposal file update must be signed and submitted by the 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;
- 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 shall 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]

[35] The status of a proposal may be found in Research.gov.
[36] Detailed instructions on submitting proposer-initiated proposal file updates are available on the FastLane website at https://www.fastlane.nsf.gov/documents/pfu/pfu.jsp.

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 NSF 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 cognizant 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 cognizant 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.[37] 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 signed and submitted by the AOR.

E. Funding 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.

Should a proposal be recommended for award, the PI may be contacted by the NSF Program Officer for assistance in preparation of the public award abstract and its title. An NSF award abstract, with its title, is an NSF document that describes the project and justifies the expenditure of Federal funds by articulating how the project serves the national interest, as stated by NSF's mission: "to promote the progress of science; to advance the national health, prosperity and welfare; or to secure the national defense."

Note that a recommendation for an award by an NSF Program Officer does not constitute approval or obligation of Federal funds. 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 a NSF Grants and Agreements Officer does so at its own risk.

F. NSF's Risk Management Framework and the Decision to Award or Decline Proposals

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 (DGA) or the Division of

[37] Note: All preaward budgetary revisions must be submitted through use of the Revised Budget Module in Fastlane.

Acquisition and Cooperative Support (DACS) for review of business, financial and policy implications. After the completion of this review, a final decision will be made to fund or decline the proposal.

1. NSF Risk Management Framework. Consistent with 2 CFR §200.205, NSF's risk-based framework evaluates the risks posed by proposers prior to issuance of an NSF award. This framework includes, but is not limited to, the following:

- conducting pre-award financial and administrative reviews for all proposers recommended for award that have not managed NSF funding in the last five years and whose NSF funding would exceed $225,000;
- conducting pre-award financial and administrative reviews for organizations who have received prior NSF awards whose cumulative NSF funding amount would exceed $225,000 should the proposal recommended for award be funded;
- conducting pre-award financial and administrative reviews for all proposers recommended for Phase II funding under the Small Business Innovation Research (SBIR) or Small Business Technology Transfer (STTR) program;
- considering the proposer's record of how it has managed past and current Federal awards, and leveraging NSF systems and to identify any ongoing issues that need to be considered before proceeding with future awards;
- considering the status of corrective actions necessary to address findings or concerns noted in audits, desk reviews, site visits, or other monitoring activities of the proposer's past and current Federal awards; and
- ensuring that NSF conducts review of information available through any OMB-designated repositories and that no awards are made to proposers that are currently suspended or debarred or otherwise ineligible for participation in Federal programs or activities.

DGA generally makes the decision to award or decline proposals within 30 days after the program Division/Office makes its recommendation. Proposals from organizations that have not received an NSF award within the preceding five years, or involving special situations (such as coordination with another Federal agency or a private funding source), cooperative agreements, or unusual arrangements may require additional review and processing time. NSF will report proposals that are declined for reasons that meet the guidelines set forth by OMB to the OMB-designated integrity and performance system in accordance with Federal regulation, but only after the proposer has had an opportunity to exhaust the review procedures contained in GPG III.F.2.

2. Process to Appeal NSF's Decision to Decline a Proposal for Financial or Administrative Reasons

a. Background

A proposer who has been declined for an NSF award for reasons related to NSF's pre-award financial and administrative reviews will be afforded the opportunity to discuss the decline decision with the cognizant NSF Grants and Agreements Officer or Branch Chief in DGA or DACS. If, after obtaining further clarification from the cognizant NSF Grants and Agreements Officer or Branch Chief in DGA or DACS, the proposer believes that NSF made a substantive or procedural error in arriving at its decision to decline an award, the proposer may submit a request for review to the cognizant Division Director of DGA or DACS. The decision made by the cognizant Division Director of DGA or DACS is final.

Award of NSF assistance is discretionary. A formal hearing, therefore, is not provided.

b. Applicability

GPG Chapter III.F.2.c contains the process by which proposers may appeal a DGA or DACS Branch Chief's decision to decline an NSF award arising from NSF's pre-award financial and administrative reviews. This process does not apply to decisions to return or decline a proposal for any other reason.

Proposals declined for administrative or financial reasons are not eligible for reconsideration under GPG Chapter IV.D.

c. Procedures

1. Proposers who are declined for an NSF award for financial or administrative reasons will be identified as such in the declination notice. A proposer who disagrees with NSF's decision should first contact the cognizant NSF Grants and Agreements Officer or Branch Chief in DGA or DACS, who will afford the proposer an informal opportunity to obtain further clarification.

2. If dissatisfied with the explanation provided by the cognizant NSF Grants and Agreements Officer or Branch Chief in DGA or DACS, the proposing organization's Authorized Organizational Representative may submit a request for review to the cognizant Division Director of DGA or DACS. The letter must be addressed to the Division Director, Division of Grants and Agreements (DGA), or the Division Director, Division of Acquisition and Cooperative Support (DACS) as appropriate, and must be received by the Foundation within 30 days after the date of the declination notice. The time for filing a request for review is strictly enforced and no extensions for the purpose of preparing it will be granted.

3. The request for review need not follow any prescribed format. However, it must contain a full statement of the proposer's position with respect to the disputed matter, as well as the facts and reasons supporting the proposer's position that the declination was unwarranted. The request may address any errors made in the financial and administrative review process. NSF will not consider any new information that would not have been available at the time the decision to decline was made. Therefore, new information presented in relation to the proposer's financial stability or the quality of its management systems will not be considered.

4. The Division Director, DGA or DACS, will review or designate one or more individuals to review the matter. In no case will the review be undertaken by any individual involved with the decline decision. The reviewing official(s) may request additional information from the proposer, but only information that would have been available at the time the decision to decline was made will be considered.

5. The designated reviewing official(s) will, within 30 days of NSF's receipt of the request for review, forward a report to the Division Director, DGA or DACS or his/her designee for a final written decision for the agency. The Division Director, DGA or DACS or his/her designee will communicate the decision in writing to the proposer, normally within 15 days of receipt of the report, unless otherwise specified by NSF. The decision made by the Division Director, DGA or DACS, is final.

G. 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:

- 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; and/or
- 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.

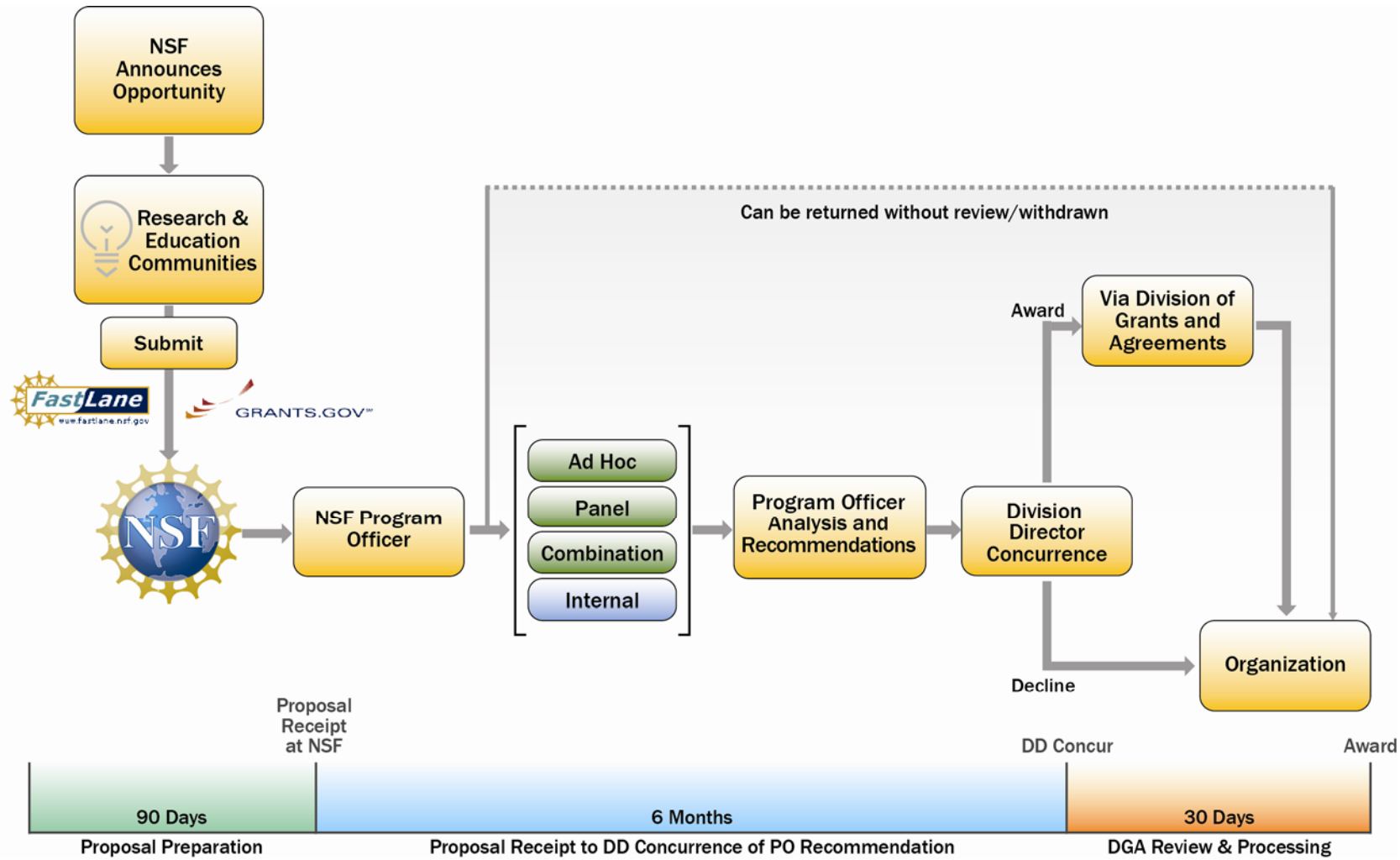
Reviews are made available directly to the PI, to provide feedback for the purpose of improving proposed research and research methods, and to assist in preparation of future proposals. They are not intended for any other purpose.

H. 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.

Exhibit III-1: 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 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 AOR 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 and forward it to the AOR for submission to NSF.

- *Proposal Submission Duplicate Withdrawal* prevents the AOR 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 AOR to either withdraw the previous duplicate proposal, and then proceed with the submission of the new proposal, or to modify the new proposal so it is different from the previous proposal.

Principal Investigators can access the Proposal Withdrawal utility via the "Submitted Proposals" screen under the FastLane Proposal Preparation Functions Module. Authorized individuals[38] can initiate or review a proposal withdrawal using the "Submit Proposals/Supplements/File Updates/Withdrawals" Module via the FastLane "Research Administration Functions".[39]

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 other authorized official 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.

[38] Authorized Organizational Representatives also can initiate a proposal withdrawal.
[39] Detailed instructions on the Electronic Proposal Withdrawal System are available in FastLane at: https://www.fastlane.nsf.gov/documents/epw/epw.jsp.

B. Proposal Not Accepted or Returned Without Review

A proposal will not be accepted[40] or will be returned without review by NSF for the following reasons.

The proposal:

1. is inappropriate for funding by the National Science Foundation (see GPG Chapter I.B);
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 (see GPG Chapter I.D.2.a);
4. is a duplicate of, or substantially similar to, a proposal already under consideration by NSF from the same submitter (see GPG Chapter I.G.2);
5. does not meet NSF proposal preparation requirements, such as page limitations, formatting instructions, and electronic submission, as specified in the *Grant Proposal Guide* (see GPG Chapters II.A, II.B, and II.C), the NSF *Grants.gov Application Guide,* or program solicitation;
6. is not responsive to the NSF funding opportunity;
7. does not meet an announced proposal deadline date;
8. was previously reviewed and declined and has not been substantially revised (see GPG Chapter IV.E);
9. duplicates another proposal that was already awarded; and/or
10. does not contain each of the required sections of the proposal, as described in GPG Chapter II.C.2.

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.G for additional information.

PIs and co-PIs may access review information from NSF after the decision has received the concurrence of the cognizant NSF 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 NSF 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 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.

[40] Proposal Not Accepted is defined as FastLane will not permit submission of the proposal.

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) Rapid Response Grants;
(4) EArly-concept Grants for Exploratory Research (EAGER); or
(5) 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,* the NSF *Grants.gov Application 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 informal opportunity to seek further clarification.

b. Reconsideration by the Cognizant NSF 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 further clarification 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 NSF 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 proposals and must be developed as fully as though the proposer is applying for the first time. Renewal proposals 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. Please note the National Science Board strongly endorses the principle that all expiring awards are to be recompeted.[41]

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.[42] 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.

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 Prior NSF Support. 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 reprints[43] 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 NSF 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.

[41] Reference National Science Board Resolution (NSB 08-12) entitled, *Competition and Recompetition of NSF Awards.*
[42] This requirement applies to both types of renewal proposals: Traditional Renewal and Accomplishment-Based Renewal.
[43] Reprints should be provided as supplementary documentation and should be submitted via the Proposal Preparation Module in the FastLane System.

Subject Index

GPG SECTION

A

Accomplishment-Based Renewal ..... II.C.2.d(vi)
Administrative and Clerical Salaries and Wages ..... II.C.2.g(i)(b)
Advanced Visualization Resources II.D.13
Age Discrimination ..... Exhibit II-6
Alcoholic Beverages ..... II.C.2.g(xii)
Allowability of Costs II.C.2.g
Animal Welfare ..... II.C.2.j, II.D.7, Exhibit II-1
Antarctic Proposals I.E.7, II.C.2.j
Anthropogenic Disasters ..... I.F, II.D.1
Anti-discrimination Statutes ..... Exhibit II-6
Appeal Process for Proposals Declined for Financial or Administrative Reasons… III.F.2
Appendices II.C.2, II.C.2.k
Appointments II.C.2.f, II.C.2.g
Authorized Organizational Representative ..... I.G.2, II.C.1.e, III.C, III.D
Award Abstract… ..... III.E
Award Recommendations ..... Chapter III, Exhibit III-1
Awardee Organization II.C.2.a

B

Beginning Investigator I.G.2, II.C.2.a
Biographical Sketch(es) ..... II.C.2.f, II.D.5.b, II.D.6, Exhibit II-1
Biological Sciences Directorate Duplicate Proposal Policy I.G.2
Broader Impacts ..... III.A
Budget II.C.2.g

C

Certifications ..... I.G.2, II.C.1, II.C.1.e, Exhibit II-1
- Authorized Organizational Representative or Individual Proposer II.C.1.e
- Conflict of Interest ..... II.C.1.e, Exhibit II-2
- Contracts, Grants, Loans and Cooperative Agreements ..... Exhibit II-5
- Criminal Conviction II.C.1.e
- Debarment or Suspension ..... II.C.1.e, Exhibit II-4
- Drug-Free Workplace ..... II.C.1.e, Exhibit II-3
- Federal Tax Obligations II.C.1.e
- Flood Hazard Insurance II.C.1.e
- Lobbying ..... II.C.1.e, Exhibit II-5
- Nondiscrimination ..... II.C.1.e, Exhibit II-6
- Organizational Support II.C.1.e
- Responsible Conduct of Research……. II.C.1.e
- Unpaid Federal Tax Liability II.C.1.e

Civil Rights Act of 1964 ..... Exhibit II-6
Closure of NSF ..... I.F
Co-Editors ..... II.C.2.f(i)(e)
Coffee Breaks and Meals ..... II.C.2.g(xii)(b)
Collaborative Arrangements ..... II.C.2.g(vi)(e),II.C.2.j, II.D.5
Collaborative Proposals ..... II.D.5, IV.A
- Submission of a collaborative proposal from one organization II.D.5.a
- Submission of a collaborative proposal from multiple organizations II.D.5.b

Collaborators ..... II.C.2f(i)(e), II.D.5.a
Colleges ..... I.E, II.C.2.g(i)(a), II.C.2.g(viii)

Common Rule for the Protection of Human Subjects II.D.8
Computer Services ..... II.C.2.g(vi), II.C.2.g(vi)(d)
Computing Devices ..... II.C.2.g(vi)(a)
Conferences ..... I.B, I.G.2, II.C.2.g(iv), II.C.2.g(v), II.D.9, II.D.10
Confidential Budgetary Information ..... II.C.2.g(i)(d)
Conflicts of Interest (COIs) I.D.1, II.C.1.c, II.C.1.e
    Potentially Disqualifying COIs ..... Exhibit II-2
Consultant Services ..... II.C.2.g(vi), II.C.2.g(vi)(c)
Contracts under Grants (Subawards) ..... II.C.2.g(vi)(e), II.D.4, Exhibit II-5
Cooperative Agreements ..... I.H, II.C.1.e, Exhibit II-5, III.E
Copies of Reviews ..... III.G, IV.A, IV.C, IV.D.3
Cost Principles II.C.2.g
Cost Sharing ..... II.C.2.g(i), II.C.2.g(xi), II.C.2.i, III.D
Costs, Visa ..... II.C.2.g(vi)(f)
Cover Sheet ..... I.D.2, I.D.3, I.G.1, I.G.2, II.A, II.C.1.e, II.C.2.a, Exhibit II-1
Current and Pending Support ..... II.C.2.h, II.D.5.b, Exhibit II-1

D

Data Management Plans ..... II.C.2.d(i), II.C.2.j, II.D.5.b, II.D.9
Data Storage II.D.13
Data Universal Numbering System (DUNS) I.G.3, II.C.2a
Deadline Dates I.F.2
Dear Colleague Letters I.C.1
Debarment and Suspension ..... II.C.1e, Exhibit II-4
Declination of Proposal ..... III.E., III.F, IV.C, IV.D
Decline for Financial or Administrative Reasons ..... III.F
Definitions of Categories of Personnel ..... Exhibit II-7
Dependent Care Travel Costs ..... II.C.2.g(iv)
Deviation Authorization ..... I.F, II.A, II.C.2d, II.C.2k, Exhibit II-1
Direct Costs II.C.2.g
Disasters (Natural or anthropogenic) ..... I.F, II.D.2
Disclosure of Lobbying Activities (SF LLL) ..... II.C.1.e, Exhibit II-1
Dissemination Costs ..... II.C.2g(vi)(b)
Dissemination of Research Results ..... II.C.2.d, III.A
Documentation Costs ..... II.C.2.g(vi)(b)
Domestic Travel ..... II.C.2.g(iv)(b)
Dual Use Research of Concern II.C.2.a, II.D.14
Duration Information II.C.2.a

E

EArly-concept Grants for Exploratory Research (EAGER) II.D.2
Electronic Submission Requirements ..... I.A, I.B, I.D, I.G.1, II.B, II.C
Encourage/Discourage Decisions I.D.2.b
Endangered Species II.C.2.j
Entertainment Costs ..... II.C.2.g(xii)(a)
Environmental Impact II.C.2.j
Equipment
    Definition ..... II.C.2g(iii)
    General Purpose ..... II.C.2.g(iii)
    Proposals II.D.6
    Special Purpose ..... II.C.2.g(iii), II.C.2.g(vi)(d), II.D.4.a, II.D.6
Executive Order
    12372, Intergovernmental Review of Federal Programs II.C.2.j
    12770, Metric Usage in Federal Government Programs I.D.3

Expendable Personal Property..... see “Materials and Supplies”
Expenditures
Allowability of Costs II.C.2.g, II.D.10

F

Facilitation Award for Scientists and Engineers with Disabilities II.C.2.j, II.D.4
Facilities and Administrative Costs (F&A) .....II.C.2.g(v), II.C.2.g(viii), II.C.2.g(ix)
Facilities, Equipment and Other Resources.....II.C.2.i, II.D.5.b, Exhibit II-1
Faculty Associate, Definition .....Exhibit II-7
FastLane System ..... I.A, I.G.1, II.B, II.C.1.e, IV.A, Chapter V
Proposal Preparation Module..... I.A, I.G.3, II.C.1, II.C.2
Federal Acquisition Regulation..... II.C.2.g
Federal Agencies ..... I.D.3, I.E.7, I.G.2, I.H, II.C.1.e, II.D.8, III.E
Federal Awardee Performance and Integrity Information System .....III.F
Federal Cost Principles (now consolidated in 2 CFR § 200, Subpart E) II.C.2.g
Federal Emergency Management Agency..... II.C.1.e
Federal Funding Accountability and Transparency Act (FFATA).....I.G.3
Federally Funded Research and Development Centers (FFRDCs) I.E.7
Federal-wide Assurance..... II.D.8
Fellowships..... I.G.2, II.D.7, IV.D.2
Financial Disclosure II.C.1.e
Flood Hazard Insurance II.C.1.e
Fonts ..... II.B, Exhibit II-1
Foreign Organizations I.E.6, II.D.7
Foreign Projects II.C.2.j, II.D.7
Foreign Travel .....II.C.2.g(iv)(c)
For-profit Organizations..... I.E.3
Fringe Benefits .....II.C.2.g(ii), III.D
Full Proposal..... I.D.1, I.D.2, I.D.3, II.C.2.a, IV.B
Funding Opportunities ..... I.A, I.B, I.C, I.C.4, I.G.1, II.C.2.a
Funding Recommendations .....Chapter III, Exhibit III-1

G

General Purpose Equipment..... II.C.2.f
Graduate Advisors.....II.C.2.f(i)(e)
Graduate Students .....I.E, II.C.2.g(i)(c), Exhibit II-7, Chapter V
Grant
Budget II.C.2.g
Financial Disclosure II.C.1.e
Renewal..... Exhibit II-1,Exhibit II-5, Chapter V
Grantee
Organization ..... I.D.3, II.C.a, II.C.2.g(vi), II.D.4.b
Share .....see “Cost Sharing”
Grants and Agreements, Division of .....I.E, I.H, III.F
Grants.gov ..... I.A, I.B, I.G.1, II.A, II.B, II.C.2, II.D.3, IV.B, IV.D.2
Group Proposals ..... II.C.2.d(v)

H

Hazardous Materials II.C.2.j
High Performance Computing Resources..... II.D.13
Historic Places.....II.C.2.a, II.C.2.j
Human Subjects ..... II.C.2.a, II.C.2.g (vi), II.C.2.j, II.D.8, Exhibit II-1

I

Ideas Lab II.D.3
Indirect Costs ..... II.C.2.g(viii)
Information About Principal Investigators/Project Directors and co-Principal Investigators/
co-Project Directors ..... II.C.1.a, Exhibit II-1
Intellectual Merit ..... II.C.1.e, II.C.2.b, II.C.2.d, II.C.2.i, II.C.2.j, Exhibit II-1, III.A, III.B
Intergovernmental Review of Federal Programs II.C.2.j
International
Activities I.E.6, II.C.2.j
Projects ..... See "Foreign Projects"
Travel ..... II.C.2.g(iv)(c)
Travel Proposals II.D.10
Investigator Financial Disclosure II.C.1.e
Invite/Not Invite Decisions I.D.2.a

L

Large Facilities Projects ..... II.D.11, III.A
Letters of Intent I.C.4, I.D.1
Letters of Collaboration ..... II.C.2.d(iv), II.C.2.j
Letters of Support II.C.2.j
List of Suggested Reviewers or Reviewers Not to Include ..... II.C.1.c, Exhibit II-1
Lobbying .....
Certification ..... II.C.1.e, Exhibit II-5
Disclosure of Lobbying Activities ..... II.C.1.e, Exhibit II-1, Exhibit II-5
Local Governments I.E.4

M

Major Research Facilities II.D.12
Margin and Spacing Requirements ..... II.B, Exhibit II-1
Materials and Supplies ..... II.C.2.g(vi), II.C.2.g(vi)(a)
Meals and Coffee Breaks ..... II.C.2.g(xii)(b)
Meetings and Conferences ..... I.B, I.G.2, II.C.2.g(iv), II.C.2.g(v), II.D.9, II.D.10
Mentoring II.C.2.d
Merit Review Criteria ..... I.C.2, I.C.3, I.C.4, I.D.3, II.C.2.b, II.C.2.d, Exhibit II-1, Chapter III
Merit Review Principles ..... Chapter III.A
Metric Conversion Act of 1975 ..... I.D.3
Minority-Owned Business II.C.2.a
Misconduct in Science I.D.3

N

National Center for Atmospheric Research II.D.13
National Environmental Policy Act of 1969 ..... II.C.2.j
National Flood Insurance Act II.C.1.e
National Register of Historic Places II.C.2.j
National Science Board ..... I.C.2, I.C.3, II.C.2.g(xi), III.A, III.B, IV.D.1, Chapter V
Natural Disasters ..... I.F, II.D.2
New Awardee ..... Chapter II
Non-academic Organization ..... I.E.2, II.C.2.g(i)(a), Chapter V
Non-award Decisions and Transactions ..... Chapter IV
Non-Discrimination Statutes ..... II.C.1.e, Exhibit II-6
Non-profit Organization I.E.2, II.D.10
NSF ID I.G.4
NSF Prospective New Awardee Guide ..... Chapter II

NSF Unit of Consideration II.C.2.a
NSF Update ..... I.B
NSF-Use Only II.C.1

O

Other Direct Costs ..... II.C.2.g(vi)
Other Personnel ..... II.C.2.f(ii), Exhibit II-7
Other Professional, Definition ..... Exhibit II-7
Overhead ..... see “Indirect Costs”

P

Page Formatting Instructions ..... II.B
Page Limitations ... II.C.2.b, II.C.2.d(ii), II.C.2.d(iii), II.C.2.d(v), II.C.2.e, II.C.2.f, II.C.2.g, II.C.2.j, II.D
..... Exhibit II-1, III.D, IV.B, IV.D.2, V.A, V.B
Pagination Instructions ..... II.B
Participant Support ..... II.C.2.g(v), II.D.9
Person Months ..... II.C.2.g(i)(c), II.C.2.h, Exhibit II-7
Personnel, Definitions ..... Exhibit II-7
PI/PD
Compensation ..... II.C.2.g(i)
Definition ..... Exhibit II-7
Information about PI/PDs and co-PIs/co-PDs ..... II.C.1.a, Exhibit II-1
Postdoctoral Associate ..... II.C.2.f(ii)
Postdoctoral Scholar ..... Exhibit II-7
Postdoctoral Sponsor ..... II.C.2.f(i)(e)
Postgraduate-Scholar Sponsor ..... II.C.2.f(i)(e)
Potentially Disqualifying Conflicts of Interest ..... Exhibit II-2
Pre-Award Financial and Administrative Reviews… III.F.1
Preliminary Proposals I.C.4, I.D.2
Preservation of Historic Places II.C.2.a, II.C.2.j
Previous NSF Award II.C.2.a
Principal Investigator (PI) ..... II. C.2.a, Exhibit II-7
PI Information ..... II.C.1.a, Exhibit II-1, Exhibit II-7
Principles, Federal Cost (now consolidated in 2 CFR § 200, Subpart E) II.C.2g
Privileged Information ..... I.D.3, II.C.1.d, II.C.2.g(i)(d), Exhibit II-1, III.H
Products ..... II.C.2.f(i)(c)
Professional Preparation ..... II.C.2.f(i)(a)
Professional Service Costs… ..... II.C.2.g(vi)(c)
Program Announcements I.C.3
Program Descriptions I.C.2
Program Solicitations I.C.4
Project Descriptions II.C.2.d, II.C.2.e, II.C.2.j, II.D.1, II.D.2,
..... II.D.3, II.D.4, II.D.5, II.D.6, II.D.9, Exhibit II-1, Chapter V
Project/Performance Site Primary Location II.C.2.a
Project Summary ..... II.C.2.b, Exhibit II-1
Property
Equipment ..... II.C.2.g(iii)
Materials and Supplies ..... II.C.2.g(vi)(a)
Proposal
Certifications ..... I.G.2, II.C.1, II.C.1.e, Exhibit II-1
Conference II.D.9
Contents ..... II.C
Cover Sheet ..... II.C.2a, Exhibit II-1, Exhibit II-3
Declination of Proposals for Financial or Administrative Reasons ..... III.F

Declinations ..... III.E., III.F, IV.A, IV.C, IV.D.1, IV.D.3
Deviations ..... I.F, II.A, II.C.2.d, II.C.2.k, Exhibit II-1
File Updates ..... III.C, IV.A
Format ..... II.B
International Travel II.D.10
Margin and Spacing Requirements ..... II.B, Exhibit II-1
Not Accepted ..... IV.B
Page Formatting ..... II.B
Pagination Instructions ..... II.B
Preparation Checklist ..... Exhibit II-1
Processing ..... I.H
Proposal & Award Process & Timeline ..... Exhibit III-1
Receipt I.G.5
Reconsideration ..... IV.D
Renewed Support ..... II.C.2.d(vi), II.D.1, II.D.2, Chapter V
Return without Review ..... II.A, IV.B, IV.D.2
Revisions Made During the Review Process ..... III.D
Sections II.C.2
Status I.G.5
Submission ..... I.A, I.C, I.D, I.E, I.F, I.G, II.A, II.B, II.C, II.D, ... Exhibit II-1, IV.A, IV.E, Chapter V
Symposia II.D.9
Time Sensitive Proposals ..... I.H
Title I.D.1, II.C.2.a
Withdrawal ..... Chapter IV.A
Proprietary Information ..... I.D.3, II.C.1.d, II.C.2.g(i)(d), Exhibit II-1, III.H
Prospective New Awardee Guide ..... Chapter II
Publications ..... II.C.2.d(iii), II.C.2.d(vi), II.C.2.f(i)(c), II.C.2.g(vi)(b)

R

Rapid Response Research Grants (RAPID) II.D.1
Recompetition ..... Chapter V
Reconsideration of Proposals ..... IV.D
References Cited ..... II.C.2.e, II.C.2.j, II.D.5.b, Exhibit II-1
Rehabilitation Act of 1973 ..... Exhibit II-3
Release of Grantee Proposal Information ..... III.H
Renewed Support ..... II.C.2.d(vi)
Accomplishment-Based Renewal ..... V.B
Traditional Renewal ..... V.A
Research Assistant, Definition ..... Exhibit II-7
Research Equipment ..... II.C.2g.(iii), II.C.2.i
Research Experiences for Undergraduates II.C.2.j
Research in Undergraduate Institutions II.C.2.j
Research Involving Wildlife II.D.7
Research Misconduct I.D.3
Research Opportunity Awards II.C.2.j
Responsible Conduct of Research II.C.1.e
Resubmission of Proposal ..... IV.E
Results from Prior NSF Support ..... II.C.2.d, Exhibit II-1, Chapter V
Return without Review ..... II.A, II.B, II.C.2.b, II.C.2.j, Exhibit II-1, Exhibit III-1, IV.B, IV.E
Review Criteria ..... I.C.2, I.C.3, I.C.4, I.D.3, II.C.2.b, II.C.2.d, Exhibit II-1, Chapter III
Reviews, Copies of ..... III.G, IV.A, IV.C, IV.D.3
Revisions to Proposals (Made During the Review Process) ..... III.D, IV.D.1
Risk Management Framework ..... III.F

S

Salaries and Wages ..... II.C.2.g(i)
Administrative and Clerical Salaries and Wages Policy… ..... II.C.2.g(i)(b)
Confidential Budgetary Information ..... II.C.2.g(i)(d)
Policies ..... II.C.2.g(i)(a)
Procedures ..... II.C.2.g(i)(c)
Selection of Reviewers ..... III.B
Senior Personnel ..... II.C.2.f(i), II.C.2.h, II.D.5, Exhibit II-2, Exhibit II-7
Sex Discrimination ..... I.E, Exhibit II-6
SF LLL, Disclosure of Lobbying Activities ..... II.C.1.e, Exhibit II-1, Exhibit II-5
Single Copy Documents ..... I.D.3, II.C.1, II.C.1.e, Exhibit II-1
Small Business ..... I.E, II.C.2.a, IV.D.2
Special Exceptions (to Deadline Date Policy) ..... I.F
Special Guidelines ..... II.D, Exhibit II-1
Special Information ..... II.C.2.j, Exhibit II-1
Sponsored Projects Office ..... I.D.2, I.G.3, II.C.2a, II.C.2j, III.C, IV.A
State Governments ..... I.E, II.C.2.h, II.C.2.j, Exhibit II-3
Students ..... I.E, II.C.2.f, II.C.2.g(i), II.D.4, II.D.9, Exhibit II-1, Exhibit II-7, Chapter V
Subawards ..... II.C.1.e, II.C.2.g(vi)(e), II.D.4, II.D.5, Exhibit II-5
Submission
Instructions ..... I.G.2, Exhibit II-1
Windows ..... I.F
Supplementary Documentation ..... II.B.2, II.C.2, II.C.2.d, II.C.2.j, II.D.7, Exhibit II-1
Supplies ..... see Materials and Supplies
Synergistic Activities ..... II.C.2.f(i)(d)
System for Award Management (SAM) I.G.3

T

Table of Contents II.C.2.c
Target Dates ..... I.F
Temporary Dependent Care Travel Costs ..... II.C.2.g(iv)
Thesis Advisor ..... II.C.2.f(i)(e)
Title of Proposed Project I.D.1, II.C.2.a
Total Direct Costs II.C.2.g
Traditional Renewal ..... V.A
Travel Allowances
Dependent of Key Project Personnel ..... II.C.2.g(iv)
Domestic ..... II.C.2.g(iv)
Foreign ..... II.C.2.g(iv)

U

Unaffiliated Individuals I.E.5, IV.D.1
Unallowable Costs ..... II.C.2.g(xii)
Alcoholic Beverages ..... II.C.2.g(xii)(c)
Entertainment Costs ..... II.C.2.g(xii)(a)
Meals and Coffee Breaks ..... II.C.2.g(xii)(b)
Undergraduate Student, Definition ..... Exhibit II-7
Unfunded Collaborations ..... II.C.2.d(iv)
Uniform Resource Locators (URLs) ..... II.C.2.d(ii)
Unit of Consideration II.C.2.a
Universities I.E.1
US-Flag Air Carriers ..... II.C.2.g(iv)

V

Vertebrate Animals ..... II.C.2.a, II.C.2.j, II.D.7, Exhibit II-1
Veterans Administration ..... I.E
Visual Materials II.C.2.d

W

Wildlife Research II.D.7
Withdrawal of Proposal ..... IV.A
Woman-Owned Business II.C.2.a

X

XSEDE… II.D.13