

Planning and Designing Research Animal Facilities

NSF 20-1 June 1, 2020

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.

Proposers should be aware of core strategies that are essential to the fulfillment of NSF's mission, as articulated in Building the Future: Investing in Discovery and Innovation - NSF Strategic Plan for Fiscal Years (FY) 2018 - 2022. 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 grantee 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 U.S. 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 will not tolerate research misconduct in proposing or performing research funded by NSF, reviewing research proposals submitted to NSF, or in reporting research results funded by NSF. For additional information, see Chapters I.D.3, IX.B, and XII.C.

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

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It is important that all proposals conform to the proposal preparation instructions contained in Part I of the PAPPG 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 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.

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 guidelines established in Part I of the PAPPG or the NSF Grants.gov Application Guide. The Proposal Preparation Checklist (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.

During completion of the proposal Cover Sheet (See Chapter II.C.2.a), the PI will be prompted to select the applicable response that describes the nature and type of proposal being developed:

The type of proposal being developed:

Whether the proposal is:

A collaborative proposal from one organization (see Chapter II.D.3.a);

A collaborative proposal from multiple organizations (see Chapter II.D.3.b); or

Not a collaborative proposal.

The requested proposal information noted above will be used to determine the applicable proposal preparation requirements that must be followed. Proposers are strongly advised to review the applicable sections of Part I of the PAPPG pertinent to the type of proposal being developed prior to submission.

All proposals are checked for compliance with applicable requirements prior to submission in FastLane and Research.gov. Additional information on NSF auto-compliance checks can be found at:

<http://www.nsf.gov/bfa/dias/policy/autocompliance.jsp>.

1. Proposal Pagination Instructions

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

2. Proposal Font, Spacing and Margin Requirements

The proposal must conform to the following requirements:

a. Use one of the following fonts identified below:

Arial 7 (not Arial Narrow), Courier New, or Palatino Linotype at a font size of 10 points or larger;

(not Arial Narrow), 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, tables or diagram captions and when using a Symbol font to insert Greek letters or special characters. Other fonts not specified above, such as Cambria Math, may be used for mathematical formulas, equations, or when inserting 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.

c. Margins, in all directions, must be at least an inch. No proposer-supplied information may appear in the margins.

d. Paper size must be no larger than standard letter paper size (8 1/2 by 11").

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 font 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. Use of a small font size makes it difficult for reviewers to read the proposal; consequently, the use of small fonts not in compliance with the above guidelines may be grounds for NSF to return the proposal without review. Adherence to font size and line spacing requirements also is necessary to ensure that no proposer will have an unfair advantage, by using smaller font 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 NSF-specific proposal certifications (which are submitted via the Authorized Organizational Representative function⁸), 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 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 organizational affiliation) who they believe are especially well qualified to review the proposal. Proposers also may designate persons they would prefer not to review the proposal. These suggestions are optional. Exhibit II-2 contains information on conflicts of interest that may be useful in preparation of this list. 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 regarding whether to use these 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 Chapter II.D.1 .

d. Proposal Certifications

Government-wide representations and certifications are provided by the proposer on an annual basis in SAM (see PAPPG Chapter I.G.2). Note that the box for "Disclosure of Lobbying Activities" must be checked on the Cover Sheet if, pursuant to the Lobbying certification provided in SAM, submission of the SF LLL is required. The AOR must use the "Authorized Organizational Representative function" to sign and submit the proposal, including NSF-specific proposal

certifications. It is the proposing organization's responsibility to assure that only properly authorized individuals perform this function.⁹

The required proposal certifications are as follows:

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 grant terms and conditions.

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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 Chapter IX.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 grant, 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.

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Certification Regarding Flood Hazard Insurance: Two sections of the National Flood Insurance Act of 1968 (42 USC Â§ 4012a and Â§ 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.

Two sections of the National Flood Insurance Act of 1968 (42 USC Â§ 4012a and Â§ 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: (2) building (and any related equipment) is covered by adequate flood insurance. By signing the proposal 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. 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 and Ethical Conduct of Research (RECR) : 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.

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NSF's RECR policy is available in Chapter IX.B. While training plans are not required to be included in proposals submitted to NSF, IHEs are advised that they are subject to review upon request. NSF has provided funding to the Online Ethics Center for S&E (www.onlineethics.org/) an online collaborative resource environment that provides resources that may be used by the IHE in developing their training plan. This site contains RECR resources by discipline, provides links to published codes of ethics, as well as includes pages dedicated to resources produced or used by specific professional groups. 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.

: 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 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.

e. Collaborators & Other Affiliations Information

The following information regarding collaborators and other affiliations (COA) must be separately provided for each individual identified as senior personnel on the project. The COA information must be provided through use of the COA template. The information in the tables is not required to be sorted, alphabetically or otherwise. For additional information please refer to the frequently asked questions on the COA template page.

There are five separate categories of information which correspond to the five tables in the COA template:

COA template Table 1:

List the individual's last name, first name, middle initial, and organizational affiliation in the last 12 months.

COA template Table 2:

List names as last name, first name, middle initial, for whom a personal, family, or business relationship would otherwise preclude their service as a reviewer. In the "Type of Relationship" column please specify the personal, family, or business relationship involved.

COA template Table 3:

List names as last name, first name, middle initial, and provide organizational affiliations, if known, for the following:

The individual's Ph.D. advisors; and

All of the individual's Ph.D. thesis advisees.

COA template Table 4:

List names as last name, first name, middle initial, and provide organizational affiliations, if known, for the following:

Co-authors on any book, article, report, abstract or paper with collaboration in the last 48 months (publication date may be later); and

Collaborators on projects, such as funded grants, graduate research or others in the last 48 months.

COA template Table 5:

List editorial board, editor-in chief and co-editors with whom the individual interacts. An editor-in-chief must list the entire editorial board.

Editorial Board: 10 List name(s) of editor-in-chief and journal in the past 24 months; and

List name(s) of editor-in-chief and journal in the past 24 months; and Other co-Editors of journal or collections with

whom the individual has directly interacted in the last 24 months.

The template has been developed to be fillable, however, the content and format requirements must not be altered by the user. When completing the template, do not change the column sizes or the font type. The instructions at the top of the template may be deleted, and rows may be inserted as needed to provide additional names¹¹.

This information is used to manage reviewer selection. See Exhibit II-2 for additional information on potential reviewer conflicts.

f. Submission of Proposals by Former NSF Staff

For one year following separation from the Foundation, any communication with NSF by a former employee or IPA must be done through use of a "substitute negotiator." Unless a substitute negotiator has been designated by the proposer/grantee, the Division of Grants and Agreements (DGA) or the Division of Acquisition and Cooperative Support (DACS) will not process a new proposal with a former employee or IPA as PI or co-PI. If it has been less than a year since a former employee separated from NSF or an IPA ended their appointment and they submit a proposal, documentation from the AOR needs to be included which designates a substitute negotiator for that proposal. The substitute negotiator must be from the same organization as the PI or co-PI for whom the negotiator is required. A co-PI on a new proposal should designate the PI as the substitute negotiator. This information should be submitted as a single copy document and uploaded in the "Additional Single Copy Documents" category.

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 accepted¹², or being returned without review. See Chapter IV.B for additional information.

A full research proposal must contain the following sections¹³. 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)

- k. Single Copy Documents

Collaborators & Other Affiliations Information

The proposal preparation instructions for RAPID, EAGER, RAISE, GOALI, Ideas Lab, FASED, conference, equipment, travel, center, research infrastructure, and fellowship proposal types may deviate from the above content requirements.

All proposals to NSF will be reviewed using the two NSB-approved merit review criteria described in greater length in 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 Organization/Primary Place of Performance

The information on the Awardee Organization is prefilled on the Cover Sheet based on the login information entered. 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;

9-digit Zip Code.

For research infrastructure projects, the project/performance site should correspond to the physical location of the asset. For research infrastructure that is mobile or geographically distributed, information for the primary site or organizational headquarters (as defined by the proposer) should be provided.

(2) Program Announcement/Solicitation/Program Description Number

Proposers are required to select the applicable funding opportunity (i.e., program description, announcement, or solicitation.) If the proposal is not submitted in response to a specific funding opportunity, proposers should select "Proposal and Award Policies and Procedures Guide."

(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 SPO 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) Announcement and Consideration Information

This information is prefilled based on previously entered information.

(d) 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 co-PIs.

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

(e) 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.

(f) Consideration by 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.

(g) Awardee Organization Information

The awardee organization name, address, NSF organization code, 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.

(h) Primary Place of Performance

This information is prefilled based on previously entered information.

(i) 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 Chapter II.D.2) (Note: this box is applicable only to proposals submitted to the Biological Sciences Directorate.)

Proprietary or Privileged Information (See Chapter II.C.1.c & Chapter II.D.1)

Historic Places (See Chapter II.C.2.j)

Vertebrate Animals 14 (See Chapter II.D.7)

(See Chapter II.D.7) Human Subjects 15 (See Chapter II.D.5)

(See Chapter II.D.5) 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 international counterparts either overseas or in the U.S. 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 Chapter II.C.2.j).

Funding of an International Branch Campus of a U.S. IHE, including through use of a subaward or consultant arrangement. (See Chapter I.E) If this box is checked, the proposer also must enter the name of the applicable country(ies) in the International Activities Country Name(s) box described above.

Funding of a Foreign Organization, including through use of a subaward or consultant arrangement. (See Chapter I.E.) If this box is checked, the proposer also must enter the name of the applicable country(ies) in the International Activities Country Name(s) box described above.

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 informative to other persons working in the same or related fields, and, insofar as possible, understandable to a broad audience within the scientific domain. 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.

The Project Description also 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 U.S.; use of science and technology to inform public policy; and enhanced infrastructure for research and education. These examples of societally relevant outcomes should not be considered either comprehensive or prescriptive. Proposers may include appropriate outcomes not covered by these examples.

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 Chapter II.C.2.j for additional instructions for preparation of this section).

For proposals that include funding to an International Branch Campus of a U.S. IHE or to a foreign organization (including through use of a subaward or consultant arrangement), the proposer must provide the requisite explanation/justification in the project description. See Chapter I.E for additional information on the content requirements.

(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. (Chapter II.A contains information on deviations.)

(iii) Results from Prior NSF Support

The purpose of this section is to assist reviewers in assessing the quality of prior work conducted with prior or current NSF funding. If any PI or co-PI identified on the proposal has received prior NSF support including:

an award with an end date in the past five years; or

any current funding, including any 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 any co-PI has received more than one award (excluding amendments to existing awards), they need only report on the one award that is most closely related to the proposal. Support means salary support, as well as any other funding awarded by NSF, including research, Graduate Research Fellowship, Major Research Instrumentation, conference, equipment, travel, and center awards, etc.

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."

(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.

If the project was recently awarded and therefore no new results exist, describe the major goals and broader impacts of the project. 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 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 Chapter II.C.2.j. Collaborative activities that are identified in the budget should follow the instructions in Chapter II.D.3.

(v) Group Proposals

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

(vi) Proposals for Renewed Support

See 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 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)

Note: The requirement to use an NSF-approved format for preparation of the biographical sketch will go into effect for new proposals submitted or due on or after October 5, 2020. In the interim, proposers must continue to prepare this document in accordance with the guidance specified in the PAPPG (NSF 20-1). NSF, however, encourages the community to use the NSF-approved formats and provide valuable feedback as we enhance them for the October implementation.

(i) Senior Personnel

A separate biographical sketch (limited to two pages) must be provided through use of an NSF-approved format, for each individual designated as senior personnel. (See Exhibit II-3 for the definitions of Senior Personnel.)

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; driver's license number; 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 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 by start date of all the individual's academic, professional, or institutional appointments, beginning with the current appointment. Appointments include any titled academic, professional, or institutional position whether or not remuneration is received, and whether full-time, part-time, or voluntary (including adjunct, visiting, or honorary).

(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 distinct examples that demonstrate the broader impact of the individual's professional and scholarly activities that focus on the integration and transfer of knowledge as well as its creation. Synergistic activities should be specific and must not include multiple examples to further describe the activity. Examples may include, among others: innovations in teaching and training; 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.

(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 five 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 five pages. See Chapter II.C.2.g.(vi)(e) for further instructions on proposals that contain subawards.

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 Â§ 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.

Proposals for mid-scale and major facilities also should consult NSF's Major Facilities Guide as well as the relevant solicitation for additional budgetary preparation guidelines.

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

(a) Senior Personnel Salaries & Wages Policy

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. (See Exhibit II-3 for the definitions of Senior Personnel.) It is the organization's responsibility to define and consistently apply the term "year", and to specify this definition in the budget justification. This limit includes salary compensation received from all NSF-funded grants. This effort must be documented in accordance with 2 CFR Â§ 200, Subpart E, including 2 CFR Â§ 200.430(i). 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.16

Under normal rebudgeting authority, as described in Chapters VII and X, a grantee 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 unless the rebudgeting would 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.

(b) Administrative and Clerical Salaries & Wages Policy

In accordance with 2 CFR Â§ 200.413, the salaries of administrative and clerical staff should normally be treated as indirect costs (F&A). 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), (ii) 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 salary and person months are not being requested for an individual designated as 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 Chapter II.D.1. 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.¹⁷

(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 Â§ 200.431 for the definition and allowability of inclusion of fringe benefits on a proposal budget.

(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 an item of equipment 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. See 2 CFR Â§ 200.313 for additional information.

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

(a) General

When anticipated, 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 research 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 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 Â§ 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 U.S.-Flag Air carriers, if available.

(b) Domestic Travel

Domestic travel includes travel within and between the U.S., its territories and possessions.¹⁸ 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 Â§ 200.474.

(c) Foreign Travel

Travel outside the areas specified above is considered foreign travel. When anticipated, the proposer must enter the names of countries and dates of visit on the proposal budget, 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 Â§ 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 Chapter II.E.7). Speakers and trainers generally are not considered participants and should not be included in this section of the budget. However, if the primary purpose of the individual's attendance at the conference is learning and receiving training as a participant, then the costs may be included under participant support. If the primary purpose is to speak or assist with management of the conference, then such costs should be budgeted in appropriate categories other than participant support.

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

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. Costs related to an NSF-sponsored conference (e.g., venue rental fees, catering costs, supplies, etc.) that will be secured through a service agreement/contract should be budgeted on line G.6., "Other Direct Costs" to ensure appropriate allocation of indirect costs.

Funds may be requested for the travel costs of participants. If so, the restrictions regarding class of accommodations and use of U.S.-Flag air carriers are applicable.¹⁹ 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 usually allowed on participant support costs unless the grantee's current, federally approved indirect cost rate agreement provides for allocation of F&A to 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 project must be allowable, reasonable and directly allocable to the supported activity. When anticipated, 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 proposing organization, minor building alterations, payments to human subjects, and service charges. Reference books and periodicals only may be included on the proposal budget 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)

When anticipated, the proposal budget justification must 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 project. Details and justification must be included for items requested to support the project.

(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 to be 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. Line G.2. of the proposal budget also may be used to request funding for data deposit and data curation costs.²⁰

(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 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 Â§ 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 Â§ 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.

(e) Subawards²¹ (Line G5 on the Proposal Budget)

Except for the purpose of obtaining goods and services for the proposer's own use which creates a procurement relationship with a contractor, no portion of the proposed activity may be subawarded or transferred to another organization without prior written 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 Officer after an award is issued.

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 five pages, must be provided for each subrecipient, if already identified. The description of the work to be performed must be included in the project description.

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 Â§ 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 Â§ 200.414, NSF grantees will use the domestic subrecipient's applicable U.S. Federally negotiated indirect cost rate(s). If no such rate exists, the NSF grantee 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 grantees will use the foreign subrecipient's applicable U.S. Federally negotiated indirect cost rate(s). However, if no such rate exists, the NSF grantee 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. Examples include:

Contracts for the purpose of obtaining goods and services for the proposer's own use (see 2 CFR Â§ 200.330 for additional information); and

Incentive payments, for example, payments to human subjects or incentives to promote completion of a survey, should be included on line G6 of the NSF budget. Incentive payments should be proposed in accordance with organizational policies and procedures. Indirect costs should be calculated on incentive payments in accordance with the organization's approved U.S. Federally negotiated indirect cost rate(s). Performance based incentive payments to employees as described in 2 CFR Â§200.430(f) should not be included in this section of the budget.

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

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

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

Except where specifically identified in an NSF program solicitation, the applicable U.S. Federally negotiated indirect cost rate(s) must be used in computing indirect costs (F&A) for a proposal. Use of an indirect cost rate lower than the organization's current negotiated indirect cost rate is considered a violation of NSF's cost sharing policy. See section (xii) below. The amount for indirect costs should be calculated by applying the current negotiated indirect cost rate(s) to the approved base(s), and such amounts should be specified in the budget justification. Indirect cost recovery for IHEs are additionally restricted by 2 CFR Â§ 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 Chapter X.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 grantee is responsible for ensuring that proposed subrecipient costs, including indirect costs, are reasonable and appropriate.

Foreign organizations that do not have a current U.S. 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 U.S. 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) Fees (Line K on the Proposal Budget)

This line is available for use only by the SBIR/STTR programs and Major Facilities programs when specified in the solicitation.

(xi) 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.

(xii) 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 guidance²² is as follows:

Voluntary Committed and Uncommitted Cost Sharing

As stipulated in 2 CFR Â§ 200.99, "Voluntary committed cost sharing means cost sharing specifically pledged on a voluntary basis in the proposal's budget or the Federal award on the part of the non-Federal entity and that becomes a binding requirement of Federal award." As such, to be considered voluntary committed cost sharing, the amount must appear on the NSF proposal budget and be specifically identified in the approved NSF budget.²³ Unless required by NSF (see the section on Mandatory Cost Sharing below), inclusion of voluntary committed cost sharing is prohibited and Line M on the proposal budget will not be available for use by the proposer. NSF Program Officers are not authorized to impose or encourage mandatory cost sharing unless such requirements are explicitly included in the program solicitation.

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 Chapter II.C.2.i for further information). While not required by NSF, the grantee may, at its own discretion, continue to contribute voluntary uncommitted cost sharing to NSF-sponsored projects. As noted above, however, these resources are not auditable by NSF and should not be included in the proposal budget or budget justification.

Mandatory Cost Sharing

Mandatory cost sharing will only be required for NSF programs when explicitly authorized by the NSF Director, the NSB, 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 these programs, cost sharing requirements will be clearly identified in the solicitation and must be included on Line M of the proposal 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 considered as 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 justification²⁵. 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 grantee.

(xiii) Allowable and Unallowable Costs

2 CFR Â§ 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 Â§ 200.474. See also 2 CFR Â§ 200.438.

(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 Â§ 200.432, for additional information on the charging of certain types of costs generally associated with conferences supported by NSF.) Meal expenses of grantee employees who are not on travel status are unallowable. See also 2 CFR Â§ 200.438.

(c) Alcoholic Beverages

No NSF funds may be requested or spent for alcoholic beverages.

h. Current and Pending Support

Note: The requirement to use an NSF-approved format for preparation of current and pending support will go into effect for new proposals submitted or due on or after October 5, 2020. In the interim, proposers must continue to prepare this document in accordance with the guidance specified in the PAPPG (NSF 20-1). NSF, however, encourages the community to use the NSF-approved formats and provide valuable feedback as we enhance them for the October implementation.

Current and pending support information must be separately provided through use of an NSF-approved format, for each individual designated as senior personnel on the proposal. Current and pending support includes all resources made available to an individual in support of and/or related to all of his/her research efforts, regardless of whether or not they have monetary value. Current and pending support also includes in-kind contributions (such as office/laboratory space, equipment, supplies, employees, students²⁶. In-kind contributions not intended for use on the project/proposal being proposed also must be reported²⁷.

Current and pending support information must be provided for this project, for ongoing projects, and for any proposals currently under consideration from whatever source²⁸, irrespective of whether such support is provided through the proposing organization or is provided directly to the individual.

The total award amount for the entire award period covered (including indirect costs) must be provided, as well as the number of person-months (or partial person-months) per year to be devoted to the project by the individual.

Concurrent submission of a proposal to other organizations will not prejudice its review by NSF, if disclosed.²⁹ If the project (or any part of the project) now being submitted has been funded previously by a source other than NSF, information must be provided regarding the last period of funding.

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 voluntary committed cost sharing as defined in 2 CFR Â§ 200.99, 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. Chapter VII.B.1 specifies procedures for use by the grantee 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 SPO or in the references cited below.

Postdoctoral Researcher Mentoring Plan. Each proposal ³⁰ that requests funding to support postdoctoral researchers ³¹ must upload under "Mentoring Plan" in the supplementary documentation section of FastLane, 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 proposal. Proposers are advised that the mentoring plan must not be used to circumvent the 15-page Project Description limitation. See Chapter II.D.3 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.

that requests funding to support must upload under "Mentoring Plan" in the supplementary documentation section of FastLane, 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 proposal. Proposers are advised that the mentoring plan must not be used to circumvent the 15-page Project Description limitation. See Chapter II.D.3 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. 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 document of no more than two pages uploaded under "Data Management Plan" in the supplementary documentation section of FastLane. This supplementary document should describe how the proposal will conform to NSF policy on the dissemination and sharing of research results (see Chapter XI.D.4), and may include:

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

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); policies for access and sharing including provisions for appropriate protection of privacy, confidentiality, security, intellectual property, or other rights or requirements; policies and provisions for re-use, re-distribution, and the production of derivatives; and

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. In such collaborative proposals, the data management plan should discuss the relevant data issues in the context of the collaboration.

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 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 and 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. A letter of support is typically from a key stakeholder such as an organization, collaborator or Congressional Representative, and is used to convey a sense of enthusiasm for the project and/or to highlight the qualifications of the PI or co-PI. A letter 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. Proposals that contain letters of support not authorized by the program solicitation may be returned without review.

In order for NSF to comply with Federal environmental statutes (including, but not limited to, the National Environmental Policy Act (42 USC. Â§Â§ 4321, et seq.), the National Historic Preservation Act (54 USC Â§ 306108 [previously codified at 16 USC Â§ Â§ 470, et seq.], and the Endangered Species Act (16 USC. Â§Â§ 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. The types of information that may be requested is shown in the Organization Environmental Impacts Checklist.

Antarctic proposals to any NSF program require "Logistical Requirements and Field Plan" supplementary documents to be submitted with the proposal. See "proposal with fieldwork" in Chapter V.A of the Antarctic Research solicitation. Special budgetary 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 Chapter XI.J). Where applicable, the box for "Historic Places" must be checked on the proposal Cover Sheet.

Research involving field experiments with genetically engineered organisms. (See Chapter XI.B.2)

Documentation regarding research involving the use of human subjects, hazardous materials, vertebrate animals, or endangered species. (See Chapter XI.B. and Chapter II.D.7 and II.D.8).

Projects that involve technology utilization/transfer activities, that require a management plan, or that involve special reports or final products. Please note that some program solicitations provide specific guidance on preparation and inclusion of management plans in proposals submitted to NSF.

Special components in new proposals or in requests for supplemental funding, such as Facilitation Awards for Scientists and Engineers with Disabilities (FASSED), Research Opportunity Awards (ROAs), Research Experiences for Undergraduates (REUs), and Facilitating Research at Primarily Undergraduate Institutions (RUIs). See Chapter II.E.6 for information on FASSED, and, for the other programs identified, consult the relevant 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. Chapter II.A contains further information.

D. Special Processing Instructions

1. 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 Chapter II.C1Chapter II.C.1 for further information regarding submission of single-copy documents.)32

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.

2. Beginning Investigators (applies to proposals submitted to the Biological Sciences Directorate only)

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.

3. Collaborative Proposals

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

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 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 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:â€•. If funded, each organization bears responsibility for a separate award.

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

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

See Chapter II.C.2.j for additional guidance on the 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:33

(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.

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

(iv) Each collaborative proposal that includes funding to an International Branch Campus of a U.S. IHE or to a foreign organization (including through use of a subaward or consultant arrangement), must check the appropriate box on the proposal cover sheet. The requirement to check the box only applies to the proposing organization that includes the international component. The lead organization also must provide the requisite explanation/justification in the project description. See Chapter I.E. for additional information on the content requirements.

(v) 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.

4. Proposals Involving Vertebrate Animals

a. a. Any project proposing use of vertebrate animals for research or education shall comply with the Animal Welfare Act (7 USC 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. See also Chapter XI.B.3 for additional information on the administration of awards that utilize vertebrate animals. Note that for some types of vertebrate animals, additional review may be required.

Any project proposing use of vertebrate animals for research or education must comply with the provision in the PHS Assurance for Institutional Commitment (Section II) that requires the submitting 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). Taxon-specific guidelines may be used as supplemental references.³⁴ Departures from the Guide must be approved by the IACUC and based on scientific, veterinary, medical, or animal welfare issues (for more information, see Office of Laboratory Animal Welfare (OLAW) Departures from the Guide).

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 an international organization or international field site also require approval of research protocols by the U.S. grantee's IACUC. If the project is to be funded through an award to an international organization or through an individual fellowship award that will support activities at an international organization, NSF will require a statement from the international organization 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 international 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 such approval has been granted prior to proposal submission, must be identified in the space provided. If IACUC approval has not been obtained prior to submission, the proposer should indicate "Pending" in the space provided for the approval date. If a decision is made to fund the proposal, the organization must provide a copy of the approval letter from the IACUC. The approval letter must affirm that an animal-use protocol covering the proposed activities has been approved, and should explicitly list the organization's PHS Assurance Number, the proposer's name, the title and number of the NSF proposal, and the date of IACUC approval, as well as show an organizational signature. The approval letter must be provided to the cognizant NSF Program Officer before an award can be issued.

(iii) The PHS Approved Animal Welfare Assurance Number must be entered in the space provided.

f. For fellowship proposals submitted by individuals that involve the care and use of vertebrate animals, the proposal should contain the information specified in paragraph b. above. In addition, a copy of the approval letter from the IACUC of the organization that provides oversight of the proposed work should be included as an "Other Supplementary Document" in FastLane. The approval letter must affirm that an animal-use protocol covering the proposed activities has been approved, and should explicitly list the organization's PHS Assurance Number, the proposer's name, the title and number of the NSF proposal, and the date of IACUC approval, as well as show an organizational signature. If IACUC approval has not been obtained prior to submission, the individual should indicate "Pending" in the space provided for the approval date. If a decision is made to fund the proposal, the individual must provide a signed copy of the official IACUC approval letter (which includes the items specified above) to the cognizant NSF Program Officer before an award can be issued.

See also Chapter XI.B.3 for additional information on the administration of awards that include use of vertebrate animals.

5. 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 Â§ 690). All projects involving human subjects

Reference

[Bioelectromagnetic Healing: A Rationale for its Use](#)

[Interpretive Description: Qualitative Research for Applied Practice \(Developing Qualitative Inquiry\)](#)