From Solicitation to Submission:
Strategies for Grant Proposal Development
ORA Grants & Pedagogy Training Workshop Series
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NSF Proposal Writing Template
Build and Broaden 2.0

Overall Checklist (add date deadlines & assigned lead as needed)

- ☐ Establish Research.gov/ Fastlane.gov/Grants.gov account
- ☐ Budget
- ☐ Budget Justification
- ☐ Letters of Collaboration (optional)
- ☐ Letters of Agreement (Supporting Partners?)
- ☐ Create/Gather Biosketches for Senior Personnel
- ☐ MOUs (??)

Specific NSF Proposal Components

- ☐ **Cover Sheet**
- ☐ **Project Summary (See PAPPG II-11)**
- ☐ **Table of Contents (See PAPPG II-11) (auto-populates)**
- ☐ **Project Description (See PAPPG II-11-13)**
- ☐ **References Cited (See PAPPG II-13)**
- ☐ **Biographical Sketch(es) (New format--3 page limit) (See PAPPG p. II-14)**
- ☐ **Budget and Budget Justification**
- ☐ **Current and Pending Support (Separate Form)**
- ☐ **Facilities, Equipment and Other Resources (Separate Document)**
- ☐ **Special Information and Supplementary Documentation**
- ☐ **• Data Management Plan (Separate Document)**
- ☐ **• Postdoctoral Mentoring Plan (if applicable)**
- ☐ **Single Copy Documents • Collaborators & Other Affiliations Information**

Other Important Instructions:

a. *(SEE page II-3 in the PAPPG)* ***Proposal Font, Spacing and Margin Requirements*** *The proposal must conform to the following requirements: Use one of the following fonts identified below:*

- *Arial7 (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.*
- *No more than six lines of text within a vertical space of one inch.*
- *Margins, in all directions, must be at least an inch.*
- *No proposer-supplied information may appear in the margins.*
- *Paper size must be no larger than standard letter paper size (8 ½ by 11"). These requirements apply to all uploaded sections of a proposal, including supplementary documentation.*
- *Page Formatting Proposers are strongly encouraged to use only a standard, single-column format for the text*

b. *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 Proposal & Award Policies & Procedures Guide II-12 NSF 20-1 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.)*

c. ***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.

Synopsis

Build and Broaden 2.0 (B2 2.0) encourages research collaborations between scholars at minority-serving institutions (MSIs) and scholars in other institutions or organizations. Growing the science, technology, engineering, and mathematics (STEM) workforce is a national priority. National forecasts of the impending shortage of science and engineering skills and essential research workforce underscore a need to expand opportunities to participate in STEM research (President's Council of Advisors on Science and Technology, 2012) (Link to 2012 report). NSF has taken steps to expand participation by focusing on research communities that are not well-represented in the federal research system. Through these steps, NSF is working to expand the volume and increasing the diversity, interconnectedness, and effectiveness of the science, technology, engineering and mathematics (STEM) workforce.

MSIs make considerable contributions to educating and training science leaders for U.S. economic growth and competitiveness. Yet, NSF has received comparatively few grant submissions from, or involving, scholars at MSIs. Targeted outreach activities reveal that MSIs have varying degrees of familiarity with funding opportunities within NSF and particularly within the Social, Behavioral and Economic (SBE) Sciences Directorate. As a result, NSF is limited in its ability to support research and training opportunities in the SBE sciences at these institutions. With its emphasis on broadening participation of MSIs, Build and Broaden 2.0 is designed to address this problem. SBE offers Build and Broaden 2.0 in order to increase proposal submissions, advance research collaborations and networks involving MSI scholars, and support research activities in the SBE sciences at MSIs. The Build and Broaden 2.0 solicitation is designed specifically for impact at MSIs. Proposals are invited from single Principal Investigators based at MSIs and from multiple co-investigators from a group of MSIs. Principal Investigators who are not affiliated with MSIs may submit proposals, but ***must collaborate with PIs, co-PIs, or Senior Personnel from MSIs*** *and describe how their project will foster research partnerships or capacity-building with at least one MSI as a primary goal of the proposed work. Proposals may address any of the scientific areas supported by SBE. These areas include anthropology, archaeology, cognitive neuroscience, decision science, ecological research, economics, geography, linguistics, law and science, organizational behavior, political science, public policy, security and preparedness, psychology, and sociology. For a full list of research areas supported by SBE please visit the SBE programs page.*

The goal of the SBE B2 2.0 funding opportunity is to ***encourage submission of proposals from MSIs, and partnerships with and among MSIs, in order to advance fundamental research and build capacity in the SBE sciences.*** *NSF's SBE directorate welcomes submission of proposals from MSIs, and from partnerships that include MSIs, that address any of the research areas supported by the directorate.*

B2 2.0 is designed to support research projects that:

- ***Build capacity and enhance research productivity in the SBE sciences at MSIs;***
- ***Provide researchers with new ways to diversify and sustain collaborations;***
- ***Foster partnerships that strengthen career and research trajectories for faculty at MSIs;***
- ***Contribute to stronger, more innovative science by diversifying research and widening the STEM pipeline***

Supported projects are expected to yield results that will promote scientific progress; advance national health, prosperity and welfare; strengthen collaborative research initiatives involving MSI scholars and MSI institutions; and establish more robust training and research networks among researchers in the SBE sciences and across other disciplines that have similar interests.

PROJECT SUMMARY ***(NOTE: Keep sub-headings consistent with solicitation)***

(*See PAPPG p. II-10) Project Summary (1 page)*

b. Project Summary of the proposed project

Instructions: *-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*

- *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*
- *statement on intellectual merit should describe the potential of the proposed activity to advance knowledge.*
- *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.*

-should be informative to other persons working in the same or related fields and 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.)

FROM THE SOLICITATION: *As described in the PAPPG, the Project Summary must include an overview of the project, a statement of intellectual merit, and a statement on the broader impacts of the project. If a partnership including an MSI or among MSIs is proposed, the proposal must also list information about the participating organization(s) and research discipline(s), as well as a statement describing the proportion of requested*

support to be spent on the MSI(s). Please include the following information as a bulleted list in the Overview section at the beginning of the project summary:

- *Participating MSI(s)*
- *Description of the MSI(s) and MSI proportion of requested support*
- *Research discipline(s) advanced by the project*

an overview of the project including a description of the activity that would result if the proposal were funded and a statement of objectives and methods to be employed

BLAH BLAH

a statement of intellectual merit, describe the potential of the proposed activity to advance knowledge.

BLAH BLAH

a statement on the broader impacts of the project, describe the potential of the proposed activity to benefit society and contribute to the achievement of specific, desired societal outcomes.

BLAH BLAH

If a partnership including an MSI or among MSIs is proposed, the proposal must also list information about the participating organization(s) and research discipline(s), as well as a statement describing the proportion of requested support to be spent on the MSI(s).

(In a Bulleted list)

- Participating MSI(s)
- Description of the MSI(s) and MSI proportion of requested support
- Research discipline(s) advanced by the project

PROJECT DESCRIPTION

(SEE PAPPG, p. II-11) Project Description (15 page maximum)
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 o****utline 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 or foreign individual (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.

FROM THE SOLICITATION *Follow PAPPG guidelines when writing the Project Description. Under the "**Broader Impacts**" section, explain how the proposed research and associated activities will enhance career development, research trajectories, collaborative research networks, or professional training for faculty and students at the participating MSI(s).*

Please also include the following additional separate sections in the Project Description:

- *A section labeled" **Nature of Partnership and Investigator Roles**". If the proposal does not include a partnership and is submitted by a single PI at an MSI, the PI should state "does not apply" in this section. If the proposal includes a partnership, this section should detail the nature of the research partnership between all participating institutions. Please describe the role of each PI, co-PI, Senior Personnel, and/or collaborator in the research project. For proposals submitted by PIs who are not based at an MSI, proposers should describe clearly the nature of the partnership with the participating MSI(s), including efforts to ensure true collaborations among MSI and non-MSI Principal Investigators, co-Principal Investigators, and Senior Personnel. Proposals involving MSIs in peripheral roles will be returned without review.*
- *A section labeled "**Intellectual Merit**". This section should discuss how the proposed work advances theory and/or basic science in one or more core SBE science areas.*

clear statement of the work to be undertaken (Project Overview)

objectives for the period of the proposed work (Project Objectives)

expected significance; (Expected Significance)

relationship of this work to the present state of knowledge in the field, (Literature Review/Present State of Knowledge in the Field)

work in progress by the PI under other support (Current Work in Progress)

outline the general plan of work, (what they want to do, why they want to do it (RATIONALE/JUSTIFICATION/NEED), how they plan to do it, how they will know if they succeed (EVALUATION), and what benefits could accrue if the project is successful (POTENTIAL IMPACT/DISSEMINATION).)

broad design of activities to be undertaken,

where appropriate, provide a clear description of experimental methods and procedures. *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.*

"Broader Impacts" provide a discussion of the broader impacts of the proposed activities.

Explain how the proposed research and associated activities will enhance career development, research trajectories, collaborative research networks, or professional training for faculty and students at the participating MSI(s).

Nature of Partnership and Investigator Roles*. If the proposal does not include a partnership and is submitted by a single PI at an MSI, the PI should state "does not apply" in this section. If the proposal includes a partnership, this section should detail the nature of the research partnership between all participating institutions. Please describe the role of each PI, co-PI, Senior Personnel, and/or collaborator in the research project. For proposals submitted by PIs who are not based at an MSI, proposers should describe clearly the nature of the partnership with the participating MSI(s), including efforts to ensure true collaborations among MSI and non-MSI Principal Investigators, co-Principal Investigators, and Senior Personnel. Proposals involving MSIs in peripheral roles will be returned without review.*

"Intellectual Merit". *This section should discuss how the proposed work advances theory and/or basic science in one or more core SBE science areas.*

NSF Merit Review Criteria

(NSF Proposal & Award Policies & Procedures Guide p.88)
Merit Review Criteria All NSF proposals are evaluated through use of two National Science Board approved merit review criteria. *In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities. The two merit review criteria are listed below. Both criteria are to be given full consideration during the review and decision-making processes; each criterion is necessary but neither, by itself, is sufficient. Therefore, proposers must fully address both criteria. (Chapter II.C.2.d(i) contains additional information for use by proposers in development of the Project Description section of the proposal.) Reviewers are strongly encouraged to review the criteria, including Chapter II.C.2.d(i), prior to the*

review of a proposal. When evaluating NSF proposals, reviewers will be asked to consider what the proposers want to do, why they want to do it, how they plan to do it, how they will know if they succeed, and what benefits could accrue if the project is successful. These issues apply both to the technical aspects of the proposal and the way in which the project may make broader contributions. ***To that end, reviewers will be asked to evaluate all proposals against two criteria:*** ***• Intellectual Merit: The Intellectual Merit criterion encompasses the potential to advance knowledge; and • Broader Impacts: The Broader Impacts criterion encompasses the potential to benefit society and contribute to the achievement of specific, desired societal outcomes. The following elements should be considered in the review for both criteria:***

1. *What is the potential for the proposed activity to:*
   a. Advance knowledge and understanding within its own field or across different fields (Intellectual Merit); and
   b. Benefit society or advance desired societal outcomes (Broader Impacts)?
2. *To what extent do the proposed activities suggest and explore creative, original, or potentially transformative concepts?*
3. *Is the plan for carrying out the proposed activities well-reasoned, well-organized, and based on a sound rationale? Does the plan incorporate a mechanism to assess success?*
4. *How well qualified is the individual, team, or organization to conduct the proposed activities?*
5. *Are there adequate resources available to the PI (either at the home organization or through collaborations) to carry out the proposed activities?*

Additional Solicitation Specific Review Criteria

B2 2.0 proposals will also be evaluated on the following:

- *Intellectual quality of the proposed research and associated activities in research areas supported by SBE*
- *Potential of the proposed project to increase the quantity, quality, and capacity of research at the participating MSI(s)*
- *Impacts of the project upon the professional development of faculty and students at the participating MSI(s)*
- *If a partnership is proposed and the proposal is being submitted by more than a single PI at an MSI, the nature of the partnership among the participating institutions and investigators*