

## NSF General Proposal Guidelines:

Instructions in the RFP will always supersede those below.

[http://www.nsf.gov/publications/pub\\_summ.jsp?ods\\_key=gpg](http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg) (sec II-2)

### General guidelines:

1. Each section must be paginated, FastLane does not do this
2. Typefaces:
  - a. Arial  $\geq$ 10 pt
  - b. Courier New  $\geq$ 10 pt
  - c. Palatino Linotype  $\geq$ 10 pt
  - d. Times New Roman  $\geq$ 11 pt
  - e. Computer Modern family of fonts  $\geq$ 11 pt
  - f. Mathematical formulas, equations, figures and tables can use fonts  $<$ 10pt
3. No more than 6 lines of text in one vertical inch.
4. All margins must be at least 1 inch
5. Single column formatting is strongly encouraged
6. Line spacing is at discretion of proposer (page limits must be followed)
7. PI's should keep in mind that "Readability is of paramount importance"

Sections of the Proposal: (templates, samples and advice can be found on the [Prepare Proposal page](#) of the ORSP website.)

1. Cover Sheet (ORSP does this)
2. Project Summary
  - a. No more than one page in length
  - b. Must contain 3 separate sections (The character limit is 4,600 characters (including spaces) in total for all three text boxes. The proposer may determine how many characters to use in each text box, but the sum of characters across the three text boxes must not exceed 4,600.)
    - i. Overview: self contained description of the activity that would result if the proposal were funded and include a statement of objectives and methods to be employed.
    - ii. Intellectual Merit: Describe the potential of the proposed activity to advance knowledge.
    - iii. Broader impacts: potential of the proposed activity to benefit society and contribute to the achievement of specific desired societal outcomes.
  - c. Written in third person, informative to other persons working in the same or related fields, and, insofar as possible, understandable to a scientifically or technically literate lay reader.
  - d. It should not be an abstract of the proposal.
3. Table of contents: automatically generated by FastLane
4. Project Description: No more than 15 pgs (clear statement of the work to be undertaken), must include:
  - a. Objectives and expected significance
  - b. Relation to longer-term goals of the PI's project
  - c. Relation to the present state knowledge in the field to work in project by the PI under other support and to work in the progress elsewhere.
  - d. 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.
  - e. "what you want to do, why you want to do it, how you plan to do it, how will you know if you succeed, and what benefits could accrue"
  - f. Within the project description, must have separate section, labeled "Broader Impacts" discussing broader impacts of proposed activities

- i. 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.
    - ii. NSF values the advancement of scientific knowledge and activities that contribute to the achievement of societally relevant outcomes. Such outcomes include, but may not be limited to:
      - 1. Full participation of women, person with disabilities and underrepresented minorities in STEM disciplines
      - 2. Improved STEM education
      - 3. Increased partnerships between academia
      - 4. Increased public scientific literacy and public engagement with science and technology
      - 5. Enhanced Infrastructure for research and education.
  - g. Results from prior NSF support. (No more than 5 pgs- included in the 15 pg limit) [OSR has template]
    - i. Needed for PI and co-PI's funding from the NSF in the past 5 years (including current)
      - 1. NSF award number, amount and period of support
      - 2. Title of the project
      - 3. Summary of results, including broader impact
      - 4. Publications resulting from the NSF award
      - 5. Evidence of Research Projects and their availability (data, collections, software)
      - 6. If proposal was renewed.
      - 7. Reviewers will be asked to comment on the quality of the prior work described
    - h. Unfunded collaborations
      - i. Describe substantial collaborations with individuals not included in budget (documented with letter in supplementary documentation)
- 5. References Cited
- 6. Biographical Sketches (2pgs) [OSR has template]
  - a. Needed for those identified as Senior Personnel
- 7. Budget (OSR and PI)
  - a. Senior Personnel salary no more than 2 months of regular salary
  - b. Equipment
  - c. Travel
  - d. Materials and Supplies
  - e. Consultant Services
  - f. Computer Services
  - g. Budget Justification (3 pgs)
    - i. Amounts requested for each line item should be documented and justified
- 8. Current and Pending Support (required for all senior project personnel)
  - a. Needed for proposed project and all other projects requiring a portion of time of the PI and other senior personnel , even if they receive no salary support from the project (s)
- 9. Facilities Equipment and other resources (narrative in nature)
  - a. Assess the adequacy of the resources available to perform the effort proposed to satisfy both Intellectual Merit and Broader impacts review criteria.
    - i. Include aggregated description of the internal and external resources (both physical and personnel) that will be provided if the project is funded.
    - ii. Description should be narrative in nature and must not include any quantifiable financial information.
- 10. Data Management Plan (2 pgs)
  - a. Describe how proposal will conform to NSF policy on the dissemination and sharing of research results.
    - i. Types of data, samples collections, software, etc to be produced during the project.
    - ii. Standards to be used for data and metadata format and content.
    - iii. Policies for access and sharing, protection of privacy, security, IP etc...

- iv. Policies for re-use, redistribution, and production of derivatives.
- v. Plans for Archiving data, samples, etc. and for preservation of access.
- b. 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.

#### 11. Supplementary Documentation and Specific Information

- a. Postdoctoral Researcher Mentoring Plan (If applicable)
- b. Letters of commitment from any unfunded collaborators
- c. Rationale for performance of all or part of your project off-campus.

### **Merit Review Principles and Criteria**

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

#### 1. Merit Review Principles

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

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

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

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

With respect to the third principle, even if assessment of Broader Impacts outcomes for particular projects is done at an aggregated level, PIs are expected to be accountable for carrying out the activities described in the funded project. Thus, individual projects should include clearly stated goals, specific descriptions of the activities that the PI intends to do, and a plan in place to document the outputs of those activities.

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

## 2. Merit Review Criteria

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

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

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

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

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

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