

## NATIONAL SCIENCE FOUNDATION (NSF) GRANTS PROPOSAL GUIDE SYNOPSIS:

### PROPOSAL PREPARATION INSTRUCTIONS

The following, prepared by the WPI Office of Sponsored Programs (OSP), is an abbreviated synopsis of the NSF's Grants Proposal Guide (GPG). This synopsis may be used as a useful "at a glance" guide in preparing your proposal to the NSF. Where further clarification is needed, the full text of the NSF GPG can be found at:

[http://www.nsf.gov/pubs/policydocs/pappguide/nsf11001/nsf11\\_1.pdf](http://www.nsf.gov/pubs/policydocs/pappguide/nsf11001/nsf11_1.pdf).

All NSF proposals must conform to GPG guidelines, except where deviations are indicated under a specific program solicitation. (Note: a program solicitation's guidelines *must* be followed where it deviates from GPG guidelines. ) Non-compliance can result in your proposal being returned without review.

Should you have any questions regarding these NSF requirements, and/or questions about submitting your proposal, please contact WPI's OSP.

#### A. Format of the Proposal

##### 1. Pagination

- a. FastLane *does not* automatically paginate; **PI must paginate** documents prior to upload.

It may be helpful to designate the section in the pagination (i.e., A-1, B-1, C-1 for successive documents)

##### 2. Fonts & Margins

###### a. Required Fonts:

- i. Arial (Macs: Helvetica, Palatino), Courier New, Palatino Linotype, **10-pt** or larger
- ii. Times New Roman, **11-pt** or larger
- iii. Computer Modern family of fonts, 11-pt or larger
- iv. Font may be less than 10-pt for mathematical equations, if it remains readable
- v. *Font must always be easily readable for a reviewer!*

###### b. Spacing & Margins:

- i. No more than 6 lines of text within vertical space of 1 inch
- ii. Margins, in all directions, must be **at least 1 inch**

#### B. Sections of the Proposal

##### 1. Cover Sheet

- a. Awardee and Performing/Research Organization
  - i. *Pre-filled information*
- b. Program Announcement/Solicitation/Description Number
  - i. Select the program to which you are applying
  - ii. If un-solicited, select Grant Proposal Guide
- c. NSF Unit of Consideration
  - i. Select applicable NSF Division/Office and Program(s)
- d. Remainder of the Cover Sheet
  - i. Title
    1. *Should be brief, and succinct. Be cognizant of any title specifications in the program solicitation.*
  - ii. Budget and Duration Information
    1. Requested amount will automatically populate from information entered into the Budget portion of the proposal

2. Proposed Duration (months) and Requested Start Date must be manually entered by PI

2. **Project Summary – 1 page limit**

- a. Must be written entirely in the **third-person**
- b. Must address clearly: **intellectual merit** and **broader impacts** of proposed project. For specific guidance on Intellectual Merit and Broader Impacts, please review the program solicitation and/or NSF GPG.

3. **Project Description – 15 page limit, unless a deviation is indicated by the program solicitation.**

- a. Must include **results from prior NSF support** section, with the following information:
  - i. NSF award number, amount and period of support
  - ii. Title of the project
  - iii. Summary of the results of the completed work (including, for research, any contribution to the development of human resources in science and engineering)
  - iv. Publications resulting from NSF award
  - v. Brief description of valuable data, samples, physical collections, and other related research products not described elsewhere, and
  - vi. If the proposal is for renewed support, a description of the relation of the completed work to the proposed work
- b. Results of prior NSF support must be **no longer than 5 pages**, and these five pages **are included in the 15-page limit** for the Project Description as a whole.
- c. **Unfunded collaborations** (i.e., any substantial collaboration(s) with individuals not included in the budget) should be described and documented with a letter from each collaborator.

4. **References Cited – No page limitation.**

- a. Each reference must include the names of all authors (in the same sequence in which they appear in the publication), the article and journal title, book title, volume number, page numbers, and year of publication. If the document is available electronically, the website address also should be identified.
- b. Must include bibliographical information *only*; **cannot** provide parenthetical information not included in the Project Description

5. **Biographical Sketch – 2 page limit.**

- a. Biosketches are required for all senior personnel and must include:
  - i. **Professional Preparation** – a list of undergraduate and graduate education, postdoc training:

Undergraduate Institution(s)	Major	Degree & Year
Graduate Institution(s)	Major	Degree & Year
Postdoctoral Institution(s)	Area	Inclusive Dates (years)

- ii. **Appointments** – list, in **reverse chronological order**, all of the individual's academic/professional appointments, beginning with the most recent
- iii. **Publications** – list **up to 5** publications *most closely related to the project* and **up to 5 other significant publications**, whether related or not. These sections must be identified separately.
  - 1. For unpublished manuscripts or articles, list only those submitted or accepted for publication (along with most likely publication date)
- iv. **Synergistic Activities** – list **up to 5** examples that demonstrate the **broader impact** of the individual's professional and scholarly activities, focusing on the integration and transfer of knowledge as well as its creation.

v. **Collaborators & Other Affiliations**

1. *Collaborators & Co-Editors* – list *in alphabetical order* (including current organizational affiliations) any persons who are currently or have been collaborators or co-authors in the past 48 months – include co-editors of journals, compendia, conference proceedings during the 24 months preceding the submission of the proposal
2. *Graduate Advisors & Postdoctoral Sponsors* – list individual's own graduate advisor(s) and postdoctoral sponsor(s), along with their current organizational affiliation(s)
3. *Thesis Advisor & Postgraduate-Scholar Sponsor* – list all persons (including their organizational affiliations) for whom the individual has served as a thesis advisor, or as a postgraduate scholar-sponsor in the last 5 years. The total number of graduate students advised and postdoctoral scholars sponsored must also be identified.
  - a. Proposals may also include information on the exceptional qualifications of: a) Postdoctoral associates, b) Other professionals, and c) Students (research assistants), if those qualifications merit consideration in evaluating the proposal
  - b. For Equipment Proposals, the following must be provided for each auxiliary user: a) Short biographical sketch, b) List of up to 5 publications most closely related to the proposed acquisition.

6. **Budget – The Proposal Budget is uploaded (in most cases by OSP) directly to NSF *Fastlane*. The proposal budget justification is limited to 3 pages unless a deviation is indicated by the specific program solicitation.**

- a. Each proposal must contain a budget for each year of support requested, unless a particular solicitation stipulates otherwise. All budgeting requests must be considered **necessary, reasonable, allocable, and allowable** under the applicable cost principles, NSF policy, and/or program solicitation. Cost principles are discussed in both the NSF GPG and OMB Circular A-21. If you have specific questions regarding cost allowability, please contact OSP.
  - i. **Salaries and Wages (Lines A and B on proposal budget)**
    1. Senior Personnel
      - a. NSF limits salary compensation for senior project personnel to no more than **2 months of their regular salary in any one year**, unless disclosed and justified in the proposal budget and budget justification, and approved by NSF prior to award. **This limit includes salary compensation received from all NSF-funded grants.**
    2. Administrative and Clerical Salaries
      - a. In most circumstances, **salaries of administrative or clerical staff are unallowable as a proposal direct cost.** Please contact OSP for further guidance.
    3. Other Personnel
      - a. The **names of PI(s), faculty, and other senior personnel** and the **estimated number of full-time-equivalent (FTE) person-months** for which NSF funding is requested and the total amount of salaries requested per year must be listed. **For postdoctoral associates and other professionals, the total number of persons for each position must also be listed, along with total FTE person-months and cumulative salary amounts requested.** Salaries requested must be **consistent with the organization's regular policies, and pay rates should be described in the budget justification.** For graduate and undergraduate students, secretarial, clerical, technical, etc., whose time will be charged directly to the project, only the total number of persons and total amount of salaries

requested per year in each category is required. Salaries requested must be consistent with the organization's regular practices. The budget justification should detail the rates of pay by individual for senior personnel, postdoctoral associates, and other professionals.

- b. Current guidelines for Graduate Research Assistant stipends, per-credit tuition costs, and the student health fee can be found on Reference Sheet section of the OSP website, at <http://www.wpi.edu/offices/osp/reference.html>

ii. **Fringe Benefits (Line C)**

1. WPI charges fringe benefits as a direct cost; its current negotiated fringe benefits rate can be found on the Reference Sheet section of the OSP website, at <http://www.wpi.edu/offices/osp/reference.html>

iii. **Equipment (Line D)**

1. WPI defines as "equipment" a single item of property with an acquisition **cost of \$500** or more and an expected service life of more than one year. The acquisition cost of a piece of equipment **includes modifications, attachments, and accessories necessary to make the property usable for its intended purpose.** Equipment must be **adequately justified**, and listed individually by description and estimated cost.
2. Equipment is typically considered "allowable" if limited to research equipment and/or apparatus not already available for the conduct of work. **General-purpose equipment (such as a personal computer or office furnishings) are *not eligible for support* unless primarily or exclusively used in the actual conduct of scientific research.**

iv. **Travel (Line E)**

1. General
  - a. Travel and its relation to the proposed activities must be **specified and itemized by destination and cost.** Funds may be requested for field work, attendance at meetings and conferences, and other travel associated with the work, including subsistence. **In order to qualify for support, attendance at meetings or conferences must be necessary to accomplish proposal objectives or disseminate its results.**
  - b. 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.
2. Domestic Travel
  - a. "Domestic Travel" includes travel in the U.S., its possessions, Puerto Rico, and travel to Canada and Mexico.
3. Foreign Travel
  - a. Travel to any areas not specified above is considered foreign. The proposal **must include relevant information, including countries to be visited (also enter names of countries on the proposal budget), dates of visit (if known), and justification for any foreign travel planned in connection with the project.**

v. **Participant Support (Line F)**

1. Participant Support refers to costs (transportation, per diem, stipends, etc.) for participants or trainees (but *not employees*) in connection with NSF-sponsored conferences, meetings, symposia, training activities and workshops. Since Participant Support is a narrowly-defined category intended for very specific purposes, we ask that you **please discuss applicability of costs as Participant Support with OSP before budgeting for it.**

vi. **Other Direct Costs (G1 – G6)**

1. **Materials and Supplies (G1)**

- a. Materials and supplies are defined as tangible personal property, other than equipment, **costing less than \$500 each** (per WPI policy)

2. **Publication/Documentation/Dissemination (G2)**

- a. Funds for the following: E.g.; reports, reprints, page charges or other journal costs.

3. **Consultant Services (G3)**

- a. Consultants are members of a particular profession or **possess a special skill** and who are **not officers or employees of the performing organization**. Costs of professional and consultant services are allowable when **reasonable in relation to the services rendered**. Payment for consultant services should be **comparable to the normal or customary fees charged and received by the consultant for comparable services, especially on non-government contracts/grants**.

4. **Computer Services (G4)**

- a. Computer services, including computer-based retrieval of scientific, technical and education information, may be requested only where institution policy is to charge such costs as direct costs.

5. **Subawards (G5)**

- a. The intent to engage in subaward activity **must be disclosed in the proposal**, and a **separate budget** should be provided for **each subawardee**, along with a **description of the work to be performed** and the **basis for selection of the subawardee**.
- b. When a proposal is to include subaward activity/ies, WPI OSP requests that all documentation for the proposal, in near-final form, be submitted **at least 7 business days prior to the NSF deadline**. Additional documentation, beyond that required by the NSF, is required by WPI of any institution proposed as a subawardee on a WPI proposal.
- c. **\*\*Special note on Linked Collaborative Submissions**. Unless otherwise prohibited by the specific program, a “linked collaborative” submission may be submitted. A linked collaborative submission allows for simultaneous submissions from multiple organizations under the same proposal. If awarded, each institution would receive its own award. For more details, please see the NSF GPG’s guidelines on submitting collaborative proposals.

6. **Other (G6)**

- a. Any other costs not specified in Lines G1-G5 must be identified on Line G6. Such costs **must be itemized and detailed in the budget justification**.

vii. **Total Direct Costs (Line H)**

- 1. The cumulative total of direct costs requested in the budget should be accurately reflected on Line H.

viii. **Indirect Costs (Line I)**

- 1. WPI’s current Indirect Cost Rate can be found on Reference Sheet section of the OSP website, at <http://www.wpi.edu/offices/osp/reference.html>. The Modified Total Direct Costs (MTDC) base of WPI’s Indirect Cost Rate excludes Equipment costing more than \$500/item, Tuition costs, and Subawards beyond the initial \$25,000 of each, as well as NSF Participant Support Costs.

ix. **Total Direct and Indirect Costs (Line J)**

1. The cumulative total of direct and indirect costs.

x. **Amount of This Request (Line L)**

1. The total amount of funds requested.

xi. **Cost-Sharing (Line M)**

1. **Voluntary Cost Sharing**

- a. Inclusion of voluntary cost sharing **is prohibited**. NSF Program Officers **may not impose or encourage cost sharing** unless such requirements are explicitly included in the program solicitation.

2. **Mandatory Cost Sharing**

- a. Mandatory cost sharing will only be required for NSF programs when explicitly authorized by the NSF Director, the National Science board, or legislation. In those *rare instances*, cost sharing requirements will be **clearly identified in the solicitation** and must be included on Line M.

7. **Current and Pending Support – No page limitation. Completion of this section is coordinated with OSP.**

- a. This section calls for required information on **all current and pending support for ongoing projects and proposals, including subsequent funding** in the case of continuing grants. **All current project support, from whatever source**, must be listed. The proposed project and *all other projects or activities requiring a portion of the time of the PI and other personnel* must be included, **even if they receive no salary support from the project(s)**. The **total award amount** for the entire period covered (including indirect costs) must be shown, as well as the number of **person-months per year**, regardless of the source of support. Similar information must be provided for *all proposals already submitted or submitted concurrently to other possible sponsors, including NSF*. Concurrent submission to other sponsors will not prejudice the NSF review.
- b. If the project being proposed has been funded previously by a source other than NSF, the information requested in (a) must be furnished for the last period of funding.

8. **Facilities, Equipment, and Other Resources**

- a. This section of the proposal is used to assess the adequacy of the **organizational resources available to perform the effort proposed**. Proposers should describe **only those resources that are directly applicable**. Proposers should include an aggregated description of the resources that the organization 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.

9. **Special Information and Supplementary Documentation**

- a. **Except as specified below**, special information and supplementary documentation must be included as **part of the Project Description** (or part of the budget justification), if it is relevant to determining the quality of the proposed work. **Information submitted in the following areas is not considered part of the 15-page Project Description limitation**. This Special Information and Supplementary Documentation section also is **not considered an appendix**. Specific guidance on the need for additional documentation may be obtained from the organization's sponsored projects office or in the references cited below.
  - i. **Postdoctoral Researcher Mentoring Plan**

1. Each proposal that requests **funding to support postdoctoral researchers** *must include*, as a supplementary document, a **description of the mentoring activities that will be provided** for such individuals. In **no more than one page**, the mentoring plan must describe the mentoring that will be provided to all postdoctoral researchers supported by the project, *irrespective of whether they reside at the submitting organization, any subawardee organization, or at any organization participating in a simultaneously submitted collaborative project*.
  2. Collaborative Proposals require that a Mentoring Plan be submitted by the **Lead proposal** if any of the associated proposals include support for a postdoctoral researcher.
  3. Proposers are advised that the mentoring plan **may not be used to circumvent the 15-page Project Description limitation**.
  4. 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. The proposed mentoring activities will be evaluated as part of the merit review process under the Foundation's broader impacts merit review criterion.
- ii. **Data Management Plan (NEW! Effective January 18, 2011)**
1. Plans for data management and sharing of the products of research. Proposals must include a supplementary document of **no more than two pages** labeled "Data Management Plan". This supplement should describe how the proposal will conform to NSF policy on the dissemination and sharing of research results (see AAG Chapter VI.D.4), and may include:
    1. the **types of data**, samples, physical collections, software, curriculum materials, and other materials to be produced in the course of the project;
    2. the **standards to be used** for data and metadata format and content (where existing standards are absent or deemed inadequate, this should be documented along with any proposed solutions or remedies);
    3. **policies for access and sharing** including provisions for appropriate protection of privacy, confidentiality, security, intellectual property, or other rights or requirements;
    4. **policies and provisions for re-use**, re-distribution, and the production of derivatives; and
    5. **plans for archiving data**, samples, and other research products, and for preservation of access to them.

**Please visit the following URL for more information on data management and WPI's NSF Data Management Template:** <http://libguides.wpi.edu/datamanagement>

2. Please note that specific Directorate requirements and guidelines for the Data Management Plan *supersede* those of the GPG. Be sure to refer to the NSF website and the specific Directorate to which you are applying for any supplemental requirements.

3. The **Engineering; Geological Sciences; Mathematical and Physical Sciences; and Social, Behavioral and Economic Sciences Directorates** each maintain specific requirements for data management, accessible at: <http://www.nsf.gov/bfa/dias/policy/dmp.jsp>
  4. 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.**
  5. **Fastlane will not permit submission of a proposal that is missing a Data Management Plan.**
  6. Proposals for supplementary support to an existing award are not required to include a Data Management Plan.
  7. 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 supplement 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 **may 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, coming under **Intellectual Merit or Broader Impacts or both**, as appropriate for the scientific community of relevance.
- iii. **Other Supplementary Documents – For the full list of allowable supplementary documentation, please review the NSF GPG.**
1. Letters of commitment documenting **collaborative** arrangements of significance.
  2. Information regarding possible environmental impacts of proposed work. Proposers are reminded that, unless required by a specific program solicitation, **letters of support should not be submitted** as they are not a standard component of an NSF proposal, and, if included, a reviewer is under *no obligation* to review these materials. Letters of support submitted in response to a program solicitation requirement must be unique to the specific proposal submitted and cannot be altered without the author's explicit prior approval. *NSF may return without review* proposals that are not consistent with these instructions.
  3. Documentation regarding research involving use of human subjects, hazardous materials, vertebrate animals, or endangered species
  4. In addition, the supplementary documentation section should **alert NSG 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 for activities that directly affect State or local governments, or possible national security implications.

## 10. Appendices

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