

Suggested Outline for the Graduate Research Statement

Typical GRFP Instructions:* "Present an original research topic that you would like to pursue in graduate school. Describe the **research idea**, your **general approach**, as well as any **unique resources** that may be needed for accomplishing the research goal (i.e., access to national facilities or collections, collaborations, overseas work, etc.) You may choose to include important **literature citations**. Address the potential of the research to **advance knowledge and understanding within science** as well as the **potential for broader impacts on society**. The research discussed must be in a field listed in the Solicitation." *Be sure to use current year instructions. Source: **NSF**

Basic Outline from Instructions

Research Idea
General Approach
Unique Resources
Intellectual Merit.
Broader Impacts
Literature Citations

Suggestion:

Modify the basic outline so that it is appropriate to your discipline and tailored to your study.

Best advice: Work closely with your mentor on this statement. You should (a) work from an outline, (b) write in a scholarly fashion and (b) approach this statement like a two-page research abstract.

One Example of a Modified Outline

Introduction

- Research aim (2-3 sentences that spark the reviewer's interest)
- Background (literature review)
- Research questions (or hypotheses, as appropriate to your discipline)

Methods (or general approach)

- Introductory statement (state that this will be a quantitative, qualitative or mixed methods study)
- Data collection or data sources
 - Sub-points as appropriate to discipline
- Data analysis or interpretation
 - Sub-points as appropriate to discipline
- Other factors you might consider:
 - Compliance, animal welfare or human subjects (as appropriate to the study)
 - Timeline
 - Evaluation (monitoring progress toward completion)
 - Limitations & Contingency (if research does not go as planned)

Unique Resources

- Specialized equipment, supercomputing, etc
- Big-ticket items (international travel, field work)
- Explain how costs will be covered (by the institution, a grant, etc.)

Intellectual Merit (*this is required – be sure to label paragraph*)

- How this study will advance knowledge with and across disciplines
- Specifically state how you will actively share the findings from this study

Broader Impacts (*this is required – be sure to label paragraph*)

- BI inherent to the research (how the research findings will benefit society)
- BI resulting from the research process (were people from underrepresented groups involved?)
- Proposed BI activity related to the project (List specific methods, audiences, venues or technologies you will employ to teach non-researchers about science and improve the public's scientific literacy.)

Conclusion

- How does this research fit with your academic and career goals?
- How will your research efforts help the NSF accomplish its goals?

Literature Citations

Notes:

- Your rationale for selecting a particular research topic should be informed by the literature.
- Consider a graduate research topic that relates to your stated career goals.
- The scope of the subject matter must be doable for a graduate student's research project.
- Be realistic about the resources you need and how your expenses will be covered.

Formatting Requirements. Strictly adhere to the essay formatting guidelines found in Fastlane GRFP. Do NOT alter the margins, line spacing, typeface or font sizes because you will be disqualified from the competition. Do not exceed 2 pages. Citations may be in 10 point font.

Citations. One way to maximize space in your essay is use a numbering system to cite the references. For example:

Anomalies in sea surface temperatures in the Equatorial Pacific are attributed to unusually cold or warm ocean temperatures [1, 3].

Then, instead present all references as a *block* of copy in 10 point font at the end of this statement. For example:

References. 1. Smith, AJ; Thomas, RM; & Bradley, CT. (2014)... 2. Hoover, FN; Smith, AJ; Bradley,CT and Fernandez, JA. (2016)...3. Wyatt, GP and Fernandez, JA (2016)...4. Petersen, J.F. (2015).

When the reader arrives at the reference section, it shows which authors – like [1] and [3] - are the sources of a quote. While this citation style is common in science journals, do not use it if your mentor advises against it.

For your Consideration

1. Reviewers understand that quite often, students work on lab teams funded by external grants. If your graduate research topic is part of a larger research project, make certain that you explain this. Be clear about your role and responsibilities. Specify how your topic relates to the overall research project.
2. DO NOT copy and paste sections from a grant proposal - that is plagiarism.
3. Rest assured that reviewers also understand that students need to build research skills. If your proposed research topic will be a challenge with your current skill level, insert a sentence about how you will acquire the necessary skills to conduct your research (e.g., graduate courses, summer research, and/or mentoring.)

Questions a Reviewer *Might* Pose Related to this Statement

Intellectual Merit

Has the student presented a well-organized statement?
Is the writing clear? Definitive?
How did the student justify the need for this research topic?
Is the "general approach" appropriate for the topic? Are methods rigorous?
Has the student identified possible pitfalls or limitations with this topic?
Is this student ready conduct a graduate research project on this topic?
What is the mentor's expertise and how strong is the mentor's support of this research?
Do the references letters confirm that the student will have adequate research resources?
Will the student publish and present scholarly findings within and across disciplines?
If the student proposed international research or field study, is it relevant?
How will this research help the student acquire new knowledge and skills?
Potentially, how might this research advance knowledge within and across disciplines?

Broader Impacts

How will society directly benefit from this research?
How will society indirectly benefit from this research?
What groups will be reached and how will they benefit?
How will the researcher engage people from underrepresented groups in the research process?
How will the researcher engage people from underrepresented groups in research-related activities?
How will this applicant propose to teach lay audiences and improve the public's scientific literacy?
Are the proposed BI activities realistic? Sustainable?
Does the topic address a significant global problem, societal need or NSF priority?
Does this applicant express an interest in becoming a scientific leader, either within or across disciplines?
How does this applicant propose to collaborate with international researchers?
Might this study enhance research and education infrastructure (e.g., facilities, instrumentation, networks, and partnerships)?
If the GRFP makes an investment in this student, how will this student help the NSF achieve its goals?