

~ Previous Research Experience (Essay) Guide Sheet ~

Here's what the reviewers will need to learn in these 2 pages:

- How much you have been engaged in rigorous research activities (e.g. conduct experiments, collect and analyze data, interpret findings, present data to others).
- Your willingness and ability to work collaboratively on research teams and in interdisciplinary settings; your active role on research teams to date.
- Your ability to conduct independent research (e.g., self direction, monitor progress, problem solving, resourcefulness, contingency planning)
- What technical knowledge and skills you possess that show you will make an outstanding researcher (i.e. understanding of rigorous research methods & responsible conduct of research)
- Efforts you've made beyond required course work to enhance your knowledge and skills (extra work shows motivation, commitment, perseverance, & self direction)
- Your analytical skills and insight about current trends & emerging issues in your field
- Demonstrated potential as a scientific leader--how you have used your knowledge and skills to help others, support diversity, share scientific knowledge, or benefit society.

A 10-Step Strategy for Writing Your Previous Research Experience Essay

Step 1. Carefully read NSF's instructions for this essay which are available in FastLane.

Step 2. Create a few notes about your research experiences. For your convenience, use the "work sheet" provided on the last page of this handout. When you are finished, reflect on these experiences. Ask yourself: Which ones best demonstrate my knowledge and skills? Which experiences were the most challenging? The most meaningful? How did I broaden my skill repertoire? Increase my knowledge depth?

Step 3. Review NSF's description of "intellectual merit" and "broader impacts" in the program solicitation. These are the judging criteria & this essay contributes to the overall impression you will make!

Tips: The **intellectual merit criterion** looks for evidence of your intellectual ability and potential for scholarly scientific study and leadership in your field. Examples include the ability (1) to plan and conduct research; (2) to work as a member of a team as well as independently; and (3) to interpret and communicate research findings. Panelists consider your GPA, the rigor of your research plan, description of previous research experience, references, GRE score(s), and how your institution of choice can support your research. The **broader impacts criterion** examines how you make societal contributions and integrate research with education. Examples: hands-on learning with children; sharing research findings with the scientific community; and communicating the importance of findings with the public. Include your past efforts to reach diverse audiences by gender, race, income, and/or ethnicity and how you plan to do this in the future.

Step 4. Decide how you want to approach writing is two-page essay. For example, you can describe your experiences chronologically, or select your most meaningful experiences to discuss. Also think about how you can develop each paragraph, such as:

- Describe a research experience, then summarize what you learned.
- Discuss a skill that you acquired or lesson your learned, then offer concrete examples.

- Step 5.** Do not attempt to write your introductory paragraph until you have finished describing your experiences, for this reason: As you are writing, you will discover an overall message or theme for your introduction. Remember that your introductory paragraph must be powerful and engage your reader! Note: Writing the introduction last can also prevent “writer’s block.”
- Step 6.** Keeping within the 2 page limit, list your publications and presentations. Include national and regional professional meetings and be sure to indicate if it was a refereed selection process.
- Step 7.** Now re-read the entire essay. Make certain that you created transitions between paragraphs for reading “flow.” Does your final paragraph tie the sections together? Does your introduction engage the reader and “set the tone” for the balance of the essay?
- Step 8.** Ask a friend, family member, study partner, or writing tutor to read your work for clarity and conviction. Did he or she find that your writing is compelling? Ask how you can improve it!
- Step 9.** Based on their feedback, begin re-writing. Strive for a high degree of clarity and conviction in your writing. Ask yourself: Will this essay convince a stranger of my potential?
- Step 10.** As you write the other two essays, make certain that you avoid repetition with this one.

Other points you might make:

As space permits, list specific skills you gained--processes, methods, and equipment. How did you demonstrate your “soft” skills -- communications, self direction, motivation?

If you need to demonstrate additional experience, you may include research roles in courses and labs, literature reviews, group projects, etc.

As space permits, you may also include presentations and poster sessions during summer research programs, science fairs, or other similar events.

IMPORTANT: NSF’s Page Formatting Requirements

“Applicants must follow the instructions in the user guide and applicant module for completing each section of the application. The essays must be written using standard 8.5" x 11" page size, 12-point, Times New Roman font, 1" margins, and must be single spaced or greater. The Personal Statement, Previous Research Experience, and Proposed Graduate Study essays each have a maximum length of two pages, including all references, citations, charts, figures, and images. The Optional Program Eligibility essay is limited to one page. Failure to comply fully with these requirements could eliminate the application from consideration by review panels. Additionally, applications that are incomplete (missing required transcripts and/or reference letters, or that do not have "submitted" status by the application deadline) are ineligible for panel review. Applicants are advised to submit applications early to avoid possible FastLane system delays on the deadline dates.”

Source: 2010 NSF GRFP Announcement

Worksheet on Your Previous Research Experiences

Instructions: This chart is intended to help you think about all that you have accomplished. Just make a few notes - do not write extensively. Place one project in each row. Jot down a few key points under each column. When you are finished, reflect on these experiences. Which ones best demonstrate your knowledge and skills? Which experiences were the most challenging? The most meaningful? How did you broaden your skill repertoire? Your knowledge depth? These are illustrative topics you may use to develop your research experience essay.

Research Purpose & Your Specific Role	Methods, Equipment Procedures	Findings, Interpretation & Implications	Skills Gained & "Lessons Learned"	What this means or How this "fits" with my future research
Purpose: Role: <input type="checkbox"/> Undergrad <input type="checkbox"/> Grad			Individual: Team:	
Purpose: Role: <input type="checkbox"/> Undergrad <input type="checkbox"/> Grad			Individual: Team:	
Purpose: Role: <input type="checkbox"/> Undergrad <input type="checkbox"/> Grad			Individual: Team:	
Purpose: Role: <input type="checkbox"/> Undergrad <input type="checkbox"/> Grad			Individual: Team:	