

~ Previous Research Experience (Essay) ~

Note: This essay must also address your **intellectual merit and broader impacts**. Be explicit! In this essay, reviewers will be looking for specific information about your

- preparedness to conduct research based on your past **experiences** (e.g., undergraduate and graduate research; methods courses; projects and lab work; assistantships; employment; summer programs; internships; entrepreneurial research efforts; field research; study abroad or international engagement, etc.)
- **requisite skills** – those necessary to conduct your proposed research and report findings (e.g., responsible conduct of research; literature reviews; research design; appropriate data collection, analysis & protection; accurate and ethical interpretation of results; publications; professional presentations and posters; exposure to international faculty; public outreach with diverse audiences by gender, race, income, and/or ethnicity)
- ability to communicate, cooperate, and collaborate on domestic *and* international **teams** and **interdisciplinary settings**. Describe your **specific roles** (e.g., work with faculty, postdocs, and other students; % work load; your contributions to a research team; work across disciplines; consistent follow through; how prepared you are for future teamwork; conflict resolution; research ethics; co-authorship or co-presentations)
- determination and resourcefulness as an **independent researcher** (e.g., analytical skills; self direction; commitment; time management; monitors own progress; creative solutions; scholarship; finding domestic and international resources; flexibility to pursue a contingency when research does not go as expected)
- understanding of global events, current trends & emerging issues in your field (or the STEM workforce or STEM education) as *related to your research interests or proposed research*; demonstrated potential to become a **leader** in your discipline (e.g., national conferences; student committees; reading journals; grants)
- efforts to **support diversity, advance scientific knowledge, or benefit society**.

Tip: The GRFP considers applicants on a case-by-case basis. If you do not have direct research experience, you can still write a compelling “previous research” essay. Be sure to explain the context of your situation--why you were unable to participate in research activities. (Some examples may include a lack of resources at your undergraduate institution or that you are making a change to a research-based degree program).

Tip: Reviewers understand that students need to build and strengthen research skills. If your research plan will be a challenge with your current skill set, explicitly state that you are willing to **learn** the necessary methods, software, databases, and/or technology to conduct your research. Offer an example of your willingness to accept critique and direction or how you have sought assistance and mentoring or training. If you have specific plans for self-directed learning or research training to acquire new skills, be sure to mention!

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

Step 1. Carefully review this year’s **program announcement**. If you are eligible to apply, register in **Fastlane-GRFP**. Look through the online application sections. Go to the **Previous Research Experience** section to **find specific instructions on this essay**. **Note:** The specific essay instructions are found only AFTER you login to the Fastlane GRFP. Copy the essay instructions and save them. Now study the two scoring criteria in the announcement -- **intellectual merit** and **broader impacts**. Reflect on how your experiences are related to these criteria because you will have to address them in your essay.

Step 2. Create a few notes about your research experiences. Organize them in a table or **work sheet**. When you are finished, reflect on your 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 official scoring criteria, with examples included. Reviewers will look for evidence of your intellectual merit and broader impacts in this essay (and the other essays). Be explicit.

Step 4. Decide on a writing approach. For example, you can describe your undergraduate and graduate research experiences chronologically, or select your most meaningful experiences to discuss. Also think about life experiences that have prepared you to undertake research. Be specific: Describe a research experience, then summarize what you learned (e.g., equipment, procedures, analysis, controls). Alternatively, list a skill that you have acquired, and then offer concrete examples of how you applied that skill in the past.

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, presentations, and poster sessions**. Include national, regional, and campus events. Indicate if it was a refereed selection process. *Note:* References (only) can be listed in 10 point font [see the new GRFP announcement](#).

Step 7. Now re-read the entire essay. Does the introduction engage the reader? Did you provide evidence of your **intellectual merit** and **broader impacts** with specific examples? If you worked on a team, is your role clear and accurate? Will a reviewer be convinced that you have the determination and necessary skills to undertake your proposed research? Are your past experiences connected to your future research?

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? Does it make sense? Do your paragraphs "flow" with transition sentences, or is the writing choppy? 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. When your essay draft is fine-tuned, ask your faculty mentor to review it with you. Ask: Will this essay convince a stranger of my skills and potential? Did I adequately address **intellectual merit and broader impacts**?

Step 10. Make certain that your other GRFP essays complement this one, but avoid repetition. Connect your ideas across the essays.

IMPORTANT: Required Page Format for all GRFP Essays

"Applicants must follow the instructions in the user guide and application 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 on all sides, and must be single spaced or greater. Only references and footnotes may be a smaller font, no less than 10-point Times New Roman. The Personal Statement, Previous Research Experience, and Proposed Plan of Research 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 will 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: [2011 NSF GRFP Announcement](#)