

Developing Strong Broader Impacts

NSF-GRFP Summer Application Prep Series

Developing Strong NSF-GRFP Broader Impacts

Broader impacts are a key component of any fellowship application, but are cornerstone of the NSF Graduate Research Fellowship application. But what is a broader impact? This is where you have engaged with the wider community outside of your area of student, your research lab, your dissertation, to positively affect a community.

How you choose to define ‘community’ is up to you and will vary by your experience. This may be a neighborhood within which you worked as a tutor or mentor for young students. Community might be a larger geographic area like the Wasatch Front where you may have been doing advocacy work for air quality. Or this might be a specific type of population, such as the Society of Women Engineers that you may have worked with to encourage female middle schoolers to hone their interests in science and pursue careers in STEM.

How you connect with the wider world is key to you as a growing researcher and leader. As you write your NSF-GRFP personal statement and research plan, you will forecast how you’ll be involved in the community and bettering society, with your platform as a leader and with your research.

Here are several tips for you as you craft your broader impacts for your personal statement and research proposal.

Reflect on the past and present, build a record of your broader impacts.

Consider the outreach, mentoring, teaching, and similar work and volunteer experience you have engaged in throughout your past. What sort of work did you do, who was the audience and community you served? Beyond what you did, what was the impact of your work?

As you design your proposed broader impacts, how are you connecting your past to the future?

When designing your proposed broader impacts, don’t reinvent the wheel.

Consider the audience and community you hope to impact, are there vehicles for changes already in place that you can partner with to create a stronger broader impact? Think about how you can make a community stronger by enhancing current practices.

If you are proposing new initiatives, explain why creating new is necessary.

Connect proposed broader impacts to your past.

In your personal and research statements, you’re talking about your past, present, and future. Consider how your proposed broader impacts build upon your previous activities. Illustrate how your past provided stepping stones for you to achieve the impact you’re projecting.

Discuss your planned broader impacts with your faculty advisor.

Your faculty advisor has experience in connecting research to the wider community and society – they’ll be a key partner in providing you with advice and suggestions on how to strengthen your proposed activities. Further, they can be key in facilitating connections with important collaborators.

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Check what fellows have proposed.

Utilize online resources (including those at www.nsf-grfp.utah.edu) to view successful GRFP applications from previous application cycles. Look at how fellows in – and out – of your area of study have framed their broader impacts. Pay close attention to how they discuss collaborations outside of the university, how interdisciplinary activity is structured, and how they communicate evaluation/assessment, value, and impact.

Broader impacts should be included in both your personal statement and research proposal.

The NSF does require broader impacts to be reflected in both required statements and under a unique “Broader Impacts” heading. These sections should be succinct and easy to understand. You want to make your impact stand out and easy for your reviewers to grasp.

Employ the use of strategic repetition – refer the reader back to your broader impacts.

Should you have key takeaways that you want your readers to have at the top of their mind, employ ‘strategic repetition,’ where you reference the same one or two salient and succinct points multiple times in your narrative. Space is at a premium; it may be more efficient to refer readers back to your broader impact sections.

For example, you might say in your narrative, “A primary goal of this research is to improve the Salt Lake Valley air quality, which I discuss in the Broader Impact section.”

In your personal statement – use broader impacts to connect your past and present to your future.

You may already be showing how your broader impact experience in the past served as steppingstones to the present and the future, which is great. You may also wish to use this opportunity to highlight ongoing passions and desire to ‘give back’ or ‘pay it forward.’

For example, you may wish to use this space to talk about how your proposed broader impacts continue to support efforts that got you involved with science when in high school.

In your personal statement – describe the impact of your activities.

Many applicants will list their broader impact experience as if sharing a list of activities. In addition to identifying meaningful experiences in your personal statement, use this opportunity to highlight the impact of those activities. If you have quantitative data – number of students mentored, number of outreach activities planned, number of community members participating in activities. Also highlight how these activities were important to those participants.

In your research proposal – describe the importance, value, and impact of your proposed activities.

As you describe your planned broader impact activities and initiatives in your research proposal, make sure you add to your description the importance of these activities. Broader impacts aren’t for the sake of broader impacts, but to positively impact lives and communities. Use this opportunity to highlight the value your research has as a broader impact and how your research will positively affect individuals and families, communities and organizations, and society.

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Be realistic with your proposed broader impacts.

Common advice is to under-promise and over-deliver. That is true, it's best to not promise things beyond your capability in an NSF application. But you want to strive for feasible and appropriate rather than under-promising. Part of what reviewers are gauging in your application is how the project and goals are scaled and they're assessing if your broader impacts are realistic for a PhD student. When broader impacts are long-term and stretch into future career goals – such as a tenure-track professorship – you'll want to make those distinctions.

Always seek feedback from a diverse group of peers, mentors, and colleagues.

Whenever writing fellowship applications – or any major piece of writing – it is important to seek and utilize feedback from a diverse group of readers. This will include your peers and classmates, faculty and other mentors, and lab or industry colleagues. For this application, it's helpful to have a mix of STEM and non-STEM individuals reading and providing valuable feedback.

Specific to broader impacts, ask your readers if they are able to clearly understand what you're trying to achieve with your proposed broader impact goals and activities, including who, what, where, when, why, and how.