10 Strategies for Planning Broader Impact Activities

The Graduate Research Fellowship Program reflects the mission and goals of the National Science Foundation. To help the agency achieve its long range goals, this fellowship program invests in high-achieving students who show good potential for Broader Impacts thru: scientific discovery; leadership; integration of science concepts into educational efforts; working with people from diverse backgrounds; and serving or otherwise benefitting society. The following 10 strategies can help you start planning Broader Impacts (BI) activities:

Strategy 1: Learn more about the mission and goals of the National Science Foundation and the Revised Merit Review Criteria. Understand the purpose of the Graduate Research Fellowship Program.

Strategy 2: Talk with current NSF investigators on your campus. Ask: How have you addressed the BI criterion in NSF grant proposals? How do you engage people from diverse populations? How can I get involved in current BI activities in our community? The next time you plan a NSF grant proposal, may I observe the planning process?

Strategy 3: Talk with your mentor(s) about the societal benefit(s) of your research, including the potential for long range impact. Tell them about your plans to apply for the GRFP and ask for advice: How can I strengthen my broader impacts on society? Ask how to launch a BI activity on campus - or collaborate with an existing effort. Learn how to get better engaged with international researchers. Together, think creatively on how to engage people from diverse populations in your proposed research project. Inquire if you can contribute to a policy paper or presentation for government leaders.

Strategy 4: Consider technology and social media. How can you teach others about your research via a web site, blog, web cam, e-materials, wiki, webinars, videos, or chats? Can you use technology to get globally engaged (e.g., cloud computing)? How can you reach people from diverse populations with technology - through community groups, schools or organizations? Also consider how you will reach people who do *not* use technology.

Strategy 5: Identify specific target groups for outreach and education efforts. Politicians. Science writers. School teachers. Civic clubs. VISTA/ Peace Corps volunteers. Teach for America. Youth groups. New college students. Donors. Alumni. Faculty retirees. Participants in summer research. Bridge programs. Veterans. People with disabilities. Racial and ethnic minorities. Girls interested in STEM. People who live in low income areas or developing countries.

Strategy 6: Identify public venues & events for outreach and education initiatives. Libraries. State capitol. State fair. Community events. K-12 classrooms. Community colleges. Day camps. Senior citizen housing. Adult learning centers. Juvenile-at-risk programs. Book stores. Career fairs. Interdisciplinary conferences. Poster sessions.

Strategy 7: Improve your cultural competence. Collaborate with a student, postdoc or faculty member from another country. Network at professional conferences with international researchers. Attend lectures, seminars, and webinars by international speakers. Obtain a travel grant for study abroad or overseas research and make the most of your stay! Identify how your proposed research may make a difference beyond the US. Assist an international students' group. Become an English tutor or conversation partner with someone from another country.

Strategy 8: Become a scientific leader. Launch an innovative STEM initiative and track your results. Actively seek opportunities to become a scientific leader on campus and in your community. Lead peer lab teams. Become an officer in the student division of a national professional organization related to your discipline. Read the NSF news to learn how STEM leaders get engaged. Conduct a literature review on STEM leadership. Complete a self-assessment of your abilities at your career services office to identify your strengths as well as what skills you need to improve. "Job shadow" a campus leader, politician, or industry leader then identify the traits and skills you will need to become a scientific leader. *Tip*: Complete a leadership short course or study leadership theories (e.g., servant leadership) then practice leadership skills.

Strategy 9: Become a STEM mentor. Observe your faculty mentor(s) and identify how they effectively motivate and coach student researchers. Attend a mentoring workshop. Learn about STEM teaching and assessment methods. Tutor middle, high school, or college students in STEM courses. Strive to be inclusive (age, gender, income, race, ethnicity, disabilities, international, and/or veterans) in your educational efforts.

Strategy 10: Volunteer. Identify how you can use your scientific knowledge to benefit others - especially women, racial and ethnic minorities, persons with disabilities, or veterans. Collaborate with students from other disciplines (e.g., music, art, convergence journalism) to devise innovative strategies for sharing research findings with school teachers, nonprofit groups or service organizations. Credit-based service learning is another option. Get involved! Keep a journal of your learning experiences.

Tip. Your BI activity should be original and creative yet based on sound rationale. Reviewers will take notice of innovation. Can you plan a potentially transformative experience for your intended targeted audience?