What NSF Expects to See in Your Narrative

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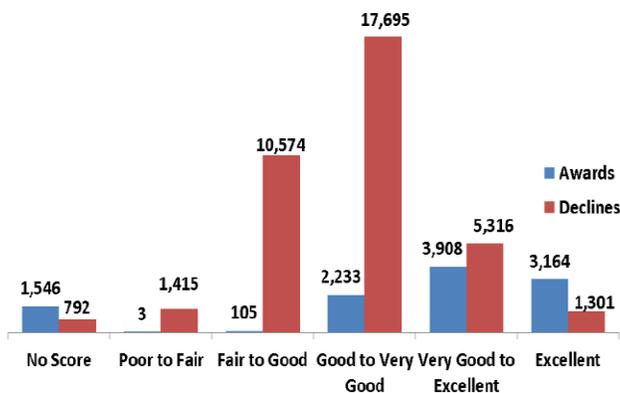
It is good to remember that the NSF Grant Proposal Guide (GPG) is an important read for anyone planning, developing, and writing a proposal to that agency, and not just meant for those focused on the pre- and post-award process. While the principal focus of the guidelines is on the latter, there are some key, albeit brief, passages in this document that give *insight into what NSF expects to see in a competitive research narrative*. NSF's expectations for the research narrative **should** directly impact how the research narrative is planned, organized, and written. Unfortunately, whether NSF's expectations **will be** incorporated into the planning, organization, and writing of the research narrative is another question entirely.

How many PIs writing research narratives actually review the GPG is debatable, but likely far fewer than those who actually read the operating manual for their smart TV cover to cover. Of course, this is not unexpected because the GPG is a long, detail-specific document whose contents are typically relayed to the PI by those in sponsored project offices who have a more experienced and nuanced understanding of the GPG from continuous exposure on hundreds of proposals.

But amidst all the process-oriented detail in the GPG, there are a few hidden informational gems that those writing the research narrative for an NSF proposal should be aware of for strategic planning purposes. While failure to follow the process instructions of the GPG may well result in a proposal being returned without review, failure to follow the NSF narrative expectations addressed in the GPG will have a different outcome—a likely refusal to fund. This slide from the NSF grants conference at the University of South Florida (June 1-2, 2015) shows why perfection in the narrative is essential.

Distribution by Average Reviewer Ratings for Awards and Declines, FY 2014

Rating	Awards	Declines
No Score	1,546	792
Poor to Fair	3	1,415
Fair to Good	105	10,574
Good to Very Good	2,233	17,695
Very Good to Excellent	3,908	5,316
Excellent	3,164	1,301

As can be seen above, even near perfection can result in rejection. Over 25 percent of the 4,465 proposals with an average reviewer rating of "*excellent*" were declined for funding,

and funding recommendations go quickly south thereafter, e.g., around 60 percent of the proposals with an average reviewer rating of "***very good to excellent***" were declined for funding. So, in writing proposals to NSF, as in gymnastics, success requires that you "***stick the landing***," the culmination of a flawless performance. ***One way to attain this perfection is to listen to what the agency is telling you it wants to see in your research narrative***. Two brief sections in the GPG (*Chapter II - Proposal Preparation Instructions*) give you this information, as quoted with editorial bolding below:

NSF Core Mission Strategies
    "Proposers should also **be aware of core strategies that are essential to the fulfillment of NSF's mission**, as articulated in *Investing in Science, Engineering, and Education for the Nation's Future: NSF Strategic Plan, 2014-2018*. These strategies are integrated in the program planning and implementation process, ***of which proposal review is one part***. NSF's mission is particularly well-implemented through the ***integration of research and education and broadening participation*** in NSF programs, projects, and activities.
    One of the strategic objectives in support of NSF's mission is to foster integration of research and education through the programs, projects, and activities it supports at NSF awardee organizations. These organizations must recruit, train, and prepare a **diverse** science, technology, engineering, and mathematics (STEM) **workforce to advance the frontiers of science and participate in the U.S. technology-based economy**. NSF's contribution to the **national innovation ecosystem is to provide cutting-edge research** under the guidance of the Nation's most creative scientists and engineers. NSF also supports development of a strong STEM workforce by **investing in building the knowledge that informs improvements in STEM teaching and learning**.
    NSF's mission calls for the **broadening of opportunities and expanding participation** of groups, organizations, and geographic regions that are underrepresented in STEM disciplines, which is essential to the health and vitality of science and engineering. **NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports**."

Project Description
    "The **Project Description** should provide a **clear** statement of the work to be undertaken and must include: **objectives for the period of the proposed work and expected significance; relation to longer-term goals of the PI's project; and relation to the present state of knowledge in the field**, to work in progress by the PI under other support **and to work in progress elsewhere**.
    The **Project Description** should outline the general plan of work, including the broad design of activities to be undertaken, and, where appropriate, provide a **clear** description of experimental methods and procedures. **Proposers should address what they want to do, why they want to do it, how they plan to do it, how they will know if they succeed, and what benefits could accrue if the project is successful**. The project activities may be based on previously established and/or innovative methods and approaches, but in either case must be well justified. These issues apply to **both** the technical aspects of the proposal **and the way in which the project may make broader contributions**.

The **Project Description** must contain, as a separate section within the narrative, a section labeled "**Broader Impacts of the Proposed Work**". This section should provide a discussion of the broader impacts of the proposed activities. **Broader impacts may be accomplished through the <u>research itself</u>, through the activities that are directly <u>related</u> to specific research projects, or through activities that are supported by, but are <u>complementary</u> to the project**. NSF values the advancement of scientific knowledge and activities that contribute to the achievement of **<u>societally relevant outcomes</u>**. Such outcomes include, but are not limited to: full participation of women, persons with disabilities, and underrepresented minorities in science, technology, engineering, and mathematics (STEM); improved STEM education and educator development at any level; increased public scientific literacy and public engagement with science and technology; improved well-being of individuals in society; development of a diverse, globally competitive STEM workforce; increased partnerships between academia, industry, and others; improved national security; increased economic competitiveness of the United States; and enhanced infrastructure for research and education."

  The above is a brief roadmap to funding success at NSF hidden away in the process details of the GPG. As you plan and organize your research narrative, these expectations should be **<u>centermost in your narrative planning and organizational strategy</u>** to ensure you come as close to perfection as possible in addressing these core mission principles laid out by NSF.