

NSF CAREER AWARD TIPS

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Make Your Ideas Stand Out



- Proposal Summary is extremely important
- Reviewers form an initial impression that is seldom changed
- The proposal summary should be the ideal review of your proposal
 - *Problem*
 - *Importance*
 - *Impact*

Finding out what works

- Ask in department, college, or others in field (advisor).
- Sample Proposals: ORSP
- Abstracts of all CAREER AWARDS
 - http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5262
 - *Read everything here: FAQ, Note to reviewers, solicitation*
- Freedom of Information Act: Get copy of any funded proposal and reviews (redacted).
- Volunteer to be a reviewer. (Great for seeing what doesn't work also).

What are the broader impacts of the proposed activity?

- *How well does the activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)?*
- *How well does the activity advance discovery and understanding while promoting teaching, training and learning?*
- *To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks and partnerships?*
- *Will the results be disseminated broadly to enhance scientific and technological understanding?*
- *What may be the benefits of the proposed activity to society?*

What is the intellectual merit of the proposed activity?

Potential Considerations:

- *How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields?*
- *How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, reviewers will comment on the quality of prior work)*
- *How creative and original are the concepts?*
- *How well conceived and organized is the proposed activity?*
- *Is there sufficient access to resources?*

Novel, innovative, bold, transformative vs. incremental

Common problems of noncompetitive proposals

- Problem not clearly articulated.
- Many unrelated subtasks.
- Failure to differentiate the current work from others. i.e., seem to be completely unaware of relevant literature.
- Do not say WHY the research should be done
- Errors in the plan of attack
- Build or exploring where the PI's fail to identify the research issues or hypotheses
- Poor page space planning & Incremental work. Rule of thumb: Proposed new effort should be AT LEAST 60% of the project description

Common Problems of “near misses”

- Failure to differentiate from own work.
- Solid, Incremental work without a truly fresh perspective. “The natural next step”
- Not very innovative, e.g., similar topics and approaches have been funded in the past or your most recent publication contains the same problem and approach.
- Great problem without a reasonable chance that they can accomplish it. Missing evaluation/assessment plan.
- Missing Expertise
- Important within subfield, but doesn't make the case that its important to larger field. (Decrease word error rate in small vocabulary speech interface)
- No discussion of education plan, diversity, etc. (at a minimum, participate in school and university programs)
- Missing Timeline. How does research feed into education

Common CAREER Problems

- List of too many loosely related topics
 - *Don't include everything you plan on doing in the next 5 years*
 - *A common research goal broken into 2-3 parts*
 - *Too many and too shallow international, industrial, educational collaborators*
- Incremental continuation of dissertation research
- Educational plan missing or not integrated
- Outreach missing or not integrated
- Formatting
 - *Font, margins, page limit, CV, Proposal Summary.*
 - *Don't use minimums*

Department Chairs letters

- **Do not submit solely letters of praise**
 - *Professor X is our best professor*
 - *Center X is our most important center and the best center in the world*
- **Do not submit letters of enticement**
 - *We will build a new building and Prof X will get the penthouse*
 - *We will abandon all university policies in faculty recruiting and make it the sole discretion of Professor X*
 - *Instead of using F&A for facilities and administration, we'll give it to Prof X in unmarked \$20 bills with nonconsecutive serial numbers.*

Department Chair Letter

- *Reiterate what support you provide to the faculty & area*
- *Place the area in strategic context with school goals/priority*
- *Indicate how it may leverage other activities*
- *Indicate how the goals of the agency program are viewed by the university, in particular education and research*
- *Use names of programs (Research In Science and Engineering) vs. acronyms (RISE)*
- *A little praise is fine, a little enticement is fine (extra TA, priority for recruiting graduate students)*
- *Professional development and mentoring*
- *Sabbatical*

Department Chair's letter

- I have read and I endorse this career development plan. I attest that the PI's career development plan is supported by and integrated into the educational and research goals of the department and the goals of the institution. I personally commit to the support and professional development of the PI."

Increase acceptance rate by visiting funding agency before submitting proposal



- Learn more about what types of projects agency is looking for (e.g., balance between theory and observation)
- Explain your ideas and accomplishments
- Find additional solicitations or agencies for support

My proposal wasn't accepted. Should I resubmit? Probably, but...

- The reviewers didn't get it:
 - *Is the proposal clear? Especially summary & introduction*
 - *Did you explain how it is a significant advantage over state of art broadly defined, not just in your specialized area*
 - *Hint: Make Proposal Summary look like an ideal review*
- Did you address all the review criteria? Read announcement
 - *Broader Impacts – Mention Dept & School Outreach. Make it easy for others to build upon your work, education and research*
 - *Research Plan- What will you do in year 3? Evaluation?*
- Integrate research topics rather than append them. Be critical of each other.
- All the reviewers thought it was pretty good, but none thought it was excellent → Are you sure the topic is important? Is this going to be the most cited work in 5-10 years?

Small Grants For Experimental Research

- *Small Grant For Experimental Research.*
- *50-200K for one year: (100K usually max)*
- *Exciting but preliminary- Sometimes a “consultation prize”*
- *Time Sensitive*
- *Ask before submitting. In person is best.*

Once Funded

- Keep Program Manger Informed of Findings.
 - *Send Papers, PowerPoint (with permission to use graphics), etc.*
 - *NSF and other agencies are always looking for high quality illustrations and videos.*
 - *Nuggets: In a form any citizen, congressman, university administrator can understand.*
 - *Offer to host planning workshops*
 - *REU supplements*

Suggested Timeline

15 pages/ \$450K = \$30,000 per page.

- Visit NSF in late may early June.
 - *My office will reimburse train ticket. Just pay for it, send receipts to...*
- Complete Draft by June 15
 - *Read by department chair, others in department particularly not in close research area, advisor.*
 - *Read by Mike Mueller*
 - *What do you think of student projects that are started a week before the deadline?*
 - *What do you think of student projects that don't follow guidelines?*
- Revise by July 5.
 - *Send to ORSP for review (compliance, budget etc)*
 - *Proofread thoroughly yourself our others.*