How to Write a Competitive NSF CAREER Proposal
Overview

National Science Foundation Faculty Early Career Development Program or as its more commonly known, the CAREER program, is a foundation-wide activity that offers the NSF's most prestigious award in support of early career faculty. This program fosters lifelong leaders in STEM who are capable of thinking creatively about the reciprocal relationship between both teaching and research.

Unique Features of the CAREER Program

- Pre-tenure track or equivalent eligibility
- 5-year budget
- No Co-PIs allowed
- Education plan required
- Department chair letter
- 3 chances to apply

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Top 10 Tips for Success

Tip #1 - Start Early

The first tip is to start early, ideally six months before the deadline. It takes time to create a competitive research idea, find the right program to submit to, identify peer reviewers, develop a compelling research and education plan, solicit a department chair letter, craft a logical, clear and coherent narrative, build a realistic budget, and develop all the ancillary required documents.

Tip #2 - Prepare Your Research Idea

You need to begin with by identifying a 5-year research idea focused on basic research and envision the idea as a project. This idea should:

- Be novel or cutting-edge
- Address important questions in your field
- Lead to fertile lines of research
- Contribute to our own research agenda and goals
- Contribute to your department's goals

Next, develop a research plan as a white paper addressing:
- Need/Motivation - Research Goals and Gap in Knowledge
- New Knowledge - Hypotheses or Research Question
- Approach - Objectives and Novel Methods
- Significance - Outcomes and Impact

Tip #3 - Find the Right NSF Program

- Shop the white paper to different program officers to find the NSF Program that most closely fits with your project's goals and intended outcomes.

- Note that NSF Directorates treat the CAREER program differently. Some like the CAREER grant to be the first award to the PI (e.g., Engineering), while others prefer it to be the second (e.g., Geosciences). Plan your submission accordingly.

Tip #4 - Identify People to Review your Proposals

- Find a peer in your field to review for discipline-specific content, especially methodology, to ensure your proposal is ready for review.
- Contact Research Development Services (rds@uoregon.edu) for help with edits on logic, flow, and clarity that will strengthen your proposal.

Tip #5 - Use Institutional Resources

UO RESOURCES
- Research Development Services – CAREER Templates, Checklists, Boilerplate, and Examples
- UO Libraries - Data Management Plan Tool
- UO STEM-CORE Program – Broader Impacts and Evaluation

Tip #6 - Write a Strong Education Plan

While writing a strong research plan is crucial to your success in winning an award, equally important is a compelling education plan. To develop your education idea:

- Select one main idea
- Develop clear goals
- Think through logistics
- Leverage current infrastructure and activities
- Link plan to career goals and department's goals

Contact the UO STEM-CORE program for assistance in developing a strong education idea and accompanying evaluation plan (send email to brebar@uoregon.edu).

Tip #7 - Pay Attention to the Broader Impacts

Broader impacts activities that advance societal outcomes are required for all NSF-funded projects, are a part of the review criteria, and must be identified by the header "Broader Impacts" in the proposal narrative.

Broader impacts activities may address one or more the following:

- The full participation of women, persons with disabilities, and underrepresented minorities
- Improved education or educator development at any level
- Increased public engagement
- Improved well-being
- Development of a diverse, globally competitive workforce
- Increased partnerships between academia, industry, and others
- Improved national security

- Increased economic competitiveness of the United States
- Enhanced infrastructure for research and education

Contact the UO STEM-CORE program for assistance in developing strong Broader Impacts activities (send email to brebar@uoregon.edu).

Tip #8 - Solicit a Strong Department Head Letter

The departmental letter is important to proposal success, and must:
- Verify your eligibility to apply
- State that the CAREER activities advance the educational and research goals of the department and organization
- Describe the relationship between the CAREER project, PI's career goals, and mission of department and university
- Ensures that appropriate mentoring will be given to you throughout the CAREER award

Note that strong letters include explicit support for your education plan and associated broader impacts, and may refer to resources to support your plans' success and sustainability.

Tip #9 - Write to Review Criteria

All NSF proposals are reviewed based on two criteria: Intellectual Merit and Broader Impacts. The CAREER program has five total criteria:

- Intellectual Merit. What is your research project's potential to advance knowledge?
- Broader Impacts. Do the activities you propose advance societal outcomes?
- Departmental Support. Is there strong support for the applicant as demonstrated in the department chair letter?
- Education Plan. Does it go beyond the typical expectations for an assistant professor?
- Integrated Research and Education Plans. Are the proposed research and educational activities meaningfully connected?

Tip #10 – Resubmit Incorporating Reviewer Remarks

The chances are high that you will not be funded in your first submission. You are allowed three total. The next step is to submit a revised proposal based on reviewer remarks. Ask yourself the following and revise accordingly:

- Were the reviewers confused?
- Did they express particular concerns?
- Was your research idea significant?
- Was the topic a poor fit for the program?

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Common Mistakes to Avoid

According to NSF program director Raj Muthasrasan, the following represent the most common mistakes in applications to the CAREER program:

- Submission to the wrong division or directorate
- Writing application as if a regular NSF research proposal
- Still in shadow of Ph.D. advisor
- Weak research question
- Weak research plan
- Unsubstantiated claims of innovation
- Proposing incremental research
- Too broad or too narrow research plan
- Unfeasible amount of work

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Contact Research Development Services for support on this or any application to fund for your research.