National Science Foundation
Faculty Early Career Development Program
(CAREER)

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Emphasizes the importance NSF places on early development of academic careers

- The excitement of research is enhanced by inspired teaching and dissemination of new knowledge

Aims to provide stable support

- At a sufficient level and duration to enable awardees to develop careers
- Not only as outstanding researchers but also as effective, committed educator

Aims to encourage faculty and academic institutions to value and support the integration of research and education

- The process of discovery stimulates learning and assures that research findings are quickly and effectively communicated in a broader context and to a large audience
CAREER Program Eligibility

- Hold a doctoral degree by proposal deadline
- Be untenured and employed in a tenure-track (or tenure-track-equivalent) assistant professor position at an eligible institution as of October 1st following the deadline
- Have both research and educational responsibilities at the eligible institution
- Have not previously received a CAREER award
- Have not had more than two CAREER proposals reviewed previously
For a position to be considered a tenure-track-equivalent position, it must meet all of the following requirements:

- ✓ The employee has a continuing appointment that is expected to last the five years of a CAREER grant.
- ✓ The appointment has substantial research and educational responsibilities.
- ✓ The proposed project relates to the employee's career goals and job responsibilities as well as to the mission of the department or organization.
- ✓ Departmental Letter must affirm that the investigator's appointment is at an early-career level equivalent to pre-tenure status, and the letter must clearly and convincingly demonstrate how the faculty member's appointment satisfies all the above requirements of tenure-track equivalency.
CAREER Program Institutional Eligibility

- Academic institutions in the U.S. that award degrees in fields supported by NSF
- Non-profit, non-degree-granting organizations in the U.S. such as museums, observatories, or research labs (Note that eligibility requirements of the PI's position must be satisfied)
- NSF encourages proposals from all institutional types, including Minority Serving and Primarily Undergraduate Institutions
CAREER Varies Across NSF

CAREER proposals are submitted to, and reviewed by, one or more of the disciplinary research programs. Typical award sizes vary according to Directorate/Division/Program.

Expectations for scope of research and education activities vary with disciplinary community norms.

Talk to Division Contact(s) for more information: [http://www.nsf.gov/crssprgm/career/contacts.jsp](http://www.nsf.gov/crssprgm/career/contacts.jsp)

For interdisciplinary proposals, contact all relevant Program Directors or Division Contacts.
CAREER Program Integration of Research and Education

Think creatively about the reciprocal relationship between research and education activities and how they may inform each other in your career development.

Plans should reflect your own disciplinary and educational interests and goals, as well as the needs and context of your organization.

There are different expectations within different disciplinary fields – a wide range of research and education activities may be appropriate for the CAREER program.
Some investigators may wish to pursue an additional activity such as entrepreneurship, industry partnerships, or policy that enhances their research and education plans.

See the CAREER program solicitation for thought-provoking examples.

Communicate with the CAREER contact(s) in the Division(s) closest to your area of research to discuss expectations.
• Commitment to the PI’s proposed CAREER research and education activities

• Description of how the PI’s career goals and responsibilities mesh with that of the organization and department

• Description of how the department will contribute to the professional development of the PI with mentoring and whatever is needed to further the PI’s efforts to integrate research and education

• Statement indicating the PI’s eligibility for the CAREER program (either as tenure-track or tenure-track equivalent junior appointment)
Letter(s) of Collaboration

Letter should consist of a single-sentence statement of collaboration

• “If the proposal submitted by Dr. [name of the PI] entitled [proposal title] is selected for funding by the NSF, it is my intent to collaborate and/or commit resources as detailed in the Project Description.”

• Must NOT recommend or endorse PI or project

All relevant collaborative activities should be described in the Project Description, or in the Facilities, Equipment and Other Resources pages, such as:

• Intellectual contributions to the project
• Permission to access a site, use instrumentation or facility
• Offer to furnish samples / materials for research
• Logistical support / evaluation services
• Mentoring of U.S. students at a foreign site, if applicable
Co-PIs on cover sheet are not allowed

Request for support of other senior personnel, consultants, or sub-awards is allowed, commensurate with a limited role in the project

International activities are encouraged, if appropriate for the project

Programs may support buy-out of academic year time for teaching-intensive institutions (check with your Program Director)

Programs may prefer to make awards with budget close to the anticipated minimum size (check with your Program Director)
CAREER or Regular Proposal?

• CAREER proposals are single-PI projects that include research and education activities that are integrated, innovative, and ambitious.

• The CAREER program’s aims are lofty – CAREER awards are a lot of work.

• Have you demonstrated commitment to both research and education?
  • If not, consider submitting a regular 3-year proposal first.
  • Then, follow with a CAREER as subsequent NSF award.
How to Get Started...

• Think **broadly** about what basic scientific questions your research might address
• Consider what educational activities you want to propose
• Peruse the NSF website ([www.nsf.gov](http://www.nsf.gov)) to identify likely programs
• Contact a Program Director **before** you submit a proposal
  − Email a one-page synopsis of your research idea
  − Ask for feedback; we are here to help
Review Criteria: Intellectual Merit and Broader Impacts

1. What is the potential for the proposed activity to:
   a) **INTELLECTUAL MERIT**: advance knowledge and understanding within its own field or across different fields; and
   b) **BROADER IMPACTS**: benefit society or advance desired societal outcomes?

2. To what extent do the proposed activities suggest and explore creative, original, or potentially transformative concepts?

3. Is the plan for carrying out the proposed activities well-reasoned, well organized, and based on a sound rationale? Does the plan incorporate a mechanism to assess success?

4. How well qualified is the individual, team, or institution to conduct the proposed activities?

5. Are there adequate resources available to the PI (either at the home institution or through collaborations) to carry out the proposed activities?
Advice for Writing an Excellent Proposal

• Start early!
• Read the solicitation!
• Identify your audience
• Frame a big picture
• Identify significant needs, gaps, and hypotheses
• Describe the plan to address the needs, gaps, and hypotheses

• Emphasize creative or innovative aspects
• Provide proof-of-concept
• Describe the expected outcomes
• Relate the outcomes to what you set out to do
Advice on Education / Broader Impacts

• There’s no specific formula
  - Do something that interests you, integrates well with your research, has measurable outcomes, and matches the time you are willing to devote
  - Go above and beyond what you are already paid to do
• Ask for money if you need it
• Use existing infrastructure, as appropriate
  - But...Give, as well as take
  - Realize that institutions certify to support your efforts
• Ask for help with assessment
• More help
  • theconnector.missouri.edu
  • www.researchinsociety.org
Common mistakes: Scientific

• Work is too close to what has been done before - i.e., incremental advance or limited impact

• Project has too large a scope or is too narrowly focused to be exciting

• Proposed methods / research plan will not yield results that address the stated goals of the project

• Experimental / theoretical / analytical design is flawed
What you don’t want to see in your reviews

- The PI has not been very productive either during or since the Ph.D.
- This proposal is naïve / overly ambitious
- Potential pitfalls and alternate strategies are not described
- Alternate interpretation of data is ignored
- Necessary resources are not available, or the PI does not have demonstrated expertise in it
Common mistakes: Educational

- Education and research plans are not well-integrated
- Education component is generic / too similar to what is expected of any faculty member in your field - one more student is not enough!
- Unrealistic education activity - “this work will transform K-12 education in the state of X"
- Unimaginative - another blog, another website
- Lack of demonstrated understanding of what is effective in education - literature search helps here
Common mistakes: Submission

DON’T wait until the last minute

• Essential documents are missing
  – Departmental letter
  – Letters of collaboration
• Extraneous documents are included
• Letters of collaboration are non-compliant
• Document is not easy to read
  • Margins too narrow
  • Font size too small
  • Figures too small / legends lack detail
If your proposal is declined...

• Stay Calm and Do NOT Get Discouraged!
  – Breathe deeply and read the reviews more than once
  – Ask others to help you interpret the reviews

• After you have had time to digest the information provided to you, contact your Program Director to ask for feedback

• Resubmit only after addressing significant weaknesses
  – Do you need more preliminary data?
  – What were the common themes in the reviews?
  – Is one component better than another?
  – Was a significant strength identified that you could build upon for resubmission?
For More Information

Contact a Program Director!

- CAREER Program Website:
  - https://www.nsf.gov/CAREER
- Directorate contacts:
  - https://www.nsf.gov/crssprgm/career/contacts.jsp