

NSF CAREER Program

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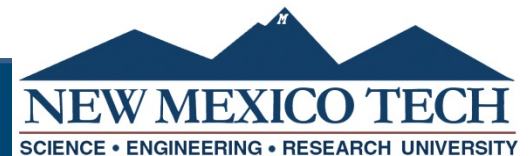
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Research Office



What is the CAREER Program

- NSF-wide program— **most prestigious award** to support junior faculty
- **Single-PI** award
- Effective **integration of research and education** is the **primary goal** of the CAREER award
- Allows **career development** of outstanding new teacher/scholars in the context of the mission of their organization
- Builds a **foundation for a lifetime** of integrated contributions to research and education
- Provides **incentives to universities** to value the integration of research and education
- **Increases participation** of those traditionally underrepresented in science and engineering



How is CAREER Different?

- CAREER is **NOT** a research award
- **CAREER** is a career-development program
- CAREER proposals are **single-PI** projects that include **research and education activities** that are integrated, innovative, and ambitious
- Your proposal must reflect this focus!
- Your **career involves a research path**—not a research project
- Determine your **career path** —your lifelong **research and education goals**; identify milestones toward your goals
- Then, detail one (or two) **research and education project(s)** for your CAREER proposal that supports your lifelong goal



CAREER versus NSF Research Proposals

- How are they the same?
 - Intellectual Merit
 - Broader Impacts
 - Research Goals and Objectives
 - Clear and concise presentation
 - Compliance with formatting and section requirements - see the latest version of the Proposal & Award Policies & Procedures Guide in addition to the RFP
- How are they different? CAREER also includes
 - Long-Term Goals
 - Education Plan
 - Integrated Research and Education Focus
 - Departmental Support
 - CAREER is a development award—the described project must be set within the researcher’s long-term career path



CAREER Award and Duration

- Duration: 5 years (no more or less)
- Award size: Minimum \$400K (for most directorates), including indirect costs (no maximum award specified) ; BIO, ENG, PLR minimum = \$500K
- Estimated number of awards: 450 per year
- Estimated amount: \$222M
- Success rate: 10%-25% (depending on directorate)



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, and/or Program.



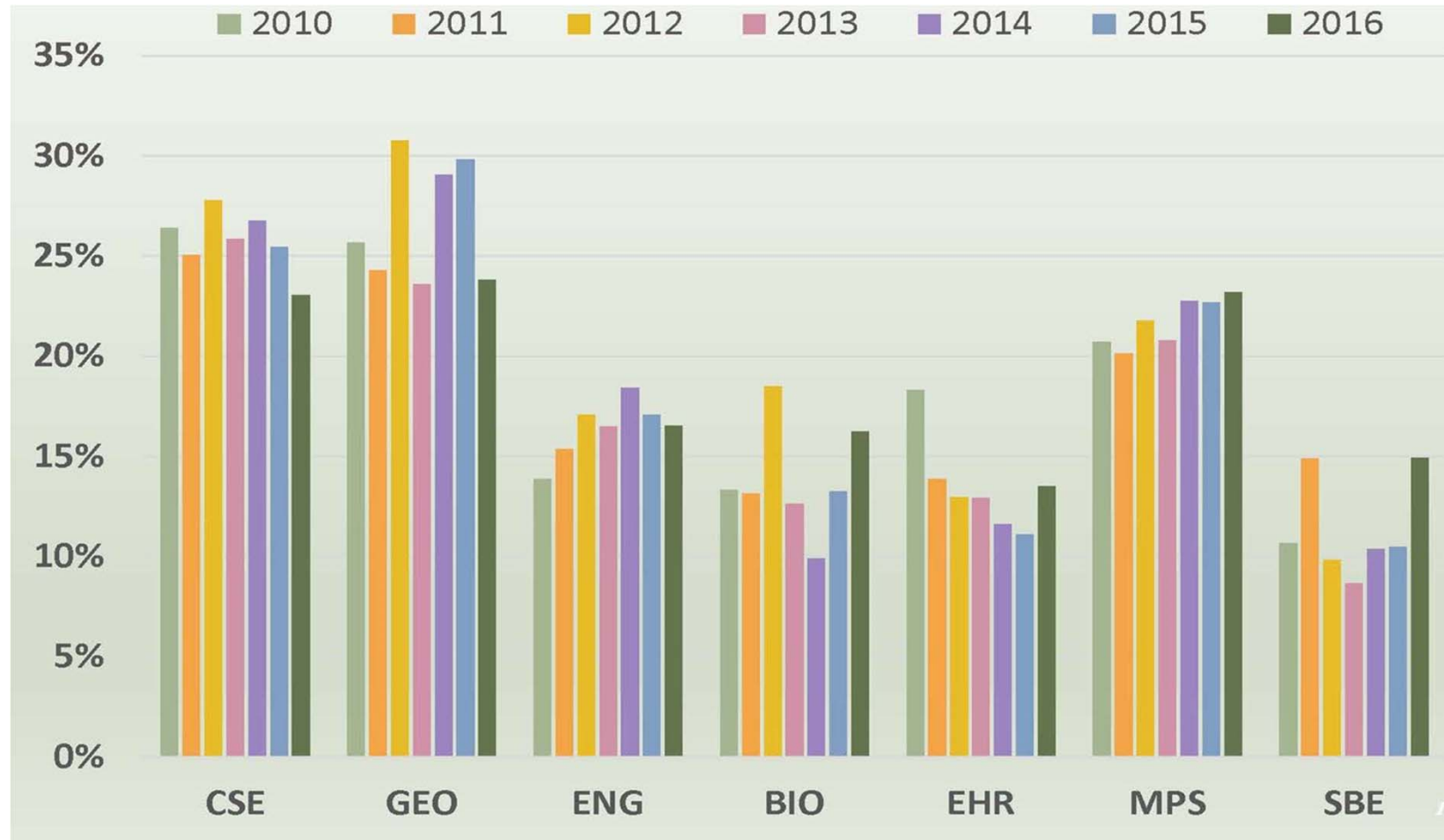
Expectations for scope of research and education activities vary with disciplinary community norms.



Talk to Division Contact(s) for more information

For interdisciplinary proposals, contact all relevant Program Directors or Division Contacts.

CAREER Award Rate



Eligibility

- Criteria
 - ✓ By July - Hold a doctorate in a field supported by NSF
 - ✓ By October 1 (following the July deadline) - Be employed in a tenure-track or tenure-track equivalent position as an assistant professor (or equivalent title) at an institution in the U.S. that awards degrees in an NSF supported field
 - ✓ Be untenured
- Submission limits:
 - ✓ Only one CAREER proposal per annual competition
 - ✓ May not participate in more than three CAREER competitions
 - ✓ Have no previous CAREER award



NO EXEMPTIONS from eligibility requirements!

Success Lies in the Planning

- Are you at the right stage of your career?
- Do you have an appropriate project that aligns with your long-term career path?
- Have you discussed your ideas with mentors and colleagues?
- Is your department supportive?
- What NSF Program/Division/Directorate does your project fit?
- Have you
 - ✓ Reviewed the list of recent CAREER awards in your discipline?
 - ✓ Drafted a concept summary?
 - ✓ Contacted the Program Officer to see if the program/division is the right home for your research, and your ideas are of interest, as well as to discuss appropriate budgets?
 - ✓ Read the FAQs
 - ✓ Created a draft budget?
 - ✓ Created an outline using the RFP sections?
- Now you are ready to begin writing!



Contact the Program Officer

- Program Officers (PO) give **valuable advice** on matters related to the program, including **if your concept is a good fit** with the program's goals and objectives
- First, email your concept summary to the PO
- Ask for a time to call and discuss
- Pay close attention to feedback, whether they are suggestions to modify your proposal or apply to another program
- Confirm program fit, education expectations, confirm average budget amount
- Send a follow-up email thanking the PO and summarizing key points
- Contact information: <http://www.nsf.gov/crssprgm/career/contacts.jsp>



Project Description

Faculty Early Career Development Program (CAREER)

Includes the description of NSF Presidential Early Career Awards for Scientists and Engineers (PEGASE)

PROGRAM SOLICITATION
NSF 20-525

Project Description:

The Project Description section should contain a well-argued and specific proposal for activities that will, over a 5-year period, build a firm foundation for a lifetime of contributions to research and education in the context of the Principal Investigator's organization. The proposed project should aim to advance the employee's career goals and job responsibilities as well as the mission of the department or organization. The Project Description may not exceed 15 pages.

The Project Description should include:

- a description of the proposed research project, including preliminary supporting data where appropriate, specific objectives, methods and procedures to be used, and expected significance of the results;
- a description of the proposed educational activities and their intended impact;
- a description of how the research and educational activities are integrated or synergistic;
- a description of other broader impacts, besides the education activities, that will accrue from the project; and
- results of prior NSF support, if applicable.

Successful applicants will propose creative, effective research and education plans, along with strategies for assessing these components. The proposed activities should help applicants develop in their careers as both outstanding researchers and educators. While excellence in both education and research is expected, activity of an intensity that leads to an unreasonable workload is not. The research and educational activities do not need to be addressed separately if the relationship between the two is such that the presentation of the integrated project is better served by interspersing the two throughout the Project Description.

CAREER Proposal Ingredients

- An integrated plan for research and education, ambitious but feasible
- Compelling argument that project will achieve effective integration of or synergy between research and education activities
- Departmental Letter demonstrating commitment to the career development of the investigator
- Letters of Collaboration (not of support or endorsement) when appropriate
- A budget that is consistent with the scope of the research and education activities



Research and Education Plan

- 5-year plan
- Well-argued and specific proposal activities
- Clarify your goals and objectives and provide a plan for how to accomplish them
- Be as specific as possible
- Creative, effective, and integrated plan
- Research and education plan can be presented together or separately
- Activity of an intensity that leads to a reasonable workload is expected — don't be overambitious or unrealistic
- Place this plan within the context of a research path leading to your career development



Integration of Research and Education

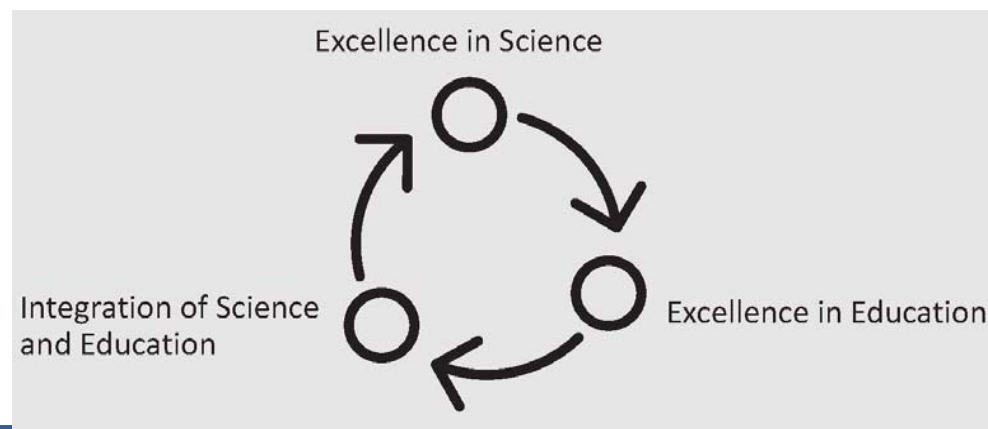
- How will your research impact your education goals AND how will your education activities feed back into your research?
- Reciprocal relationship in your career development
- Plans should reflect your own disciplinary and educational interests and goals, as well as the needs and context of your organization
- **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
- Communicate with the CAREER contact(s) in the Division(s) closest to your area of research to discuss expectations



Integration of Research and Education

Ways to think about integration:

- Involve others in your research using new tools, laboratory methods, field components, web outreach, cyber networks, etc. (graduate students, undergraduates, K-12 students, high school teachers, public)
- Partner with communities, especially those traditionally underrepresented in Sciences and Engineering
- Bring the excitement of your research topics to help in the education of others
- Search for new methods to deliver your research results to a broader audience than those in the immediate research community
- Use the broader community to gather data for your scientific pursuits (“citizen science”)
- Involve NMT programs (such as OSL, MST, Science Fair, Science Olympiad)



Education Plan

- Either as a separate section or fully integrated into Research Plan
- Activities should **go beyond** what is expected from any assistant professor in your field
- Workload should not be unreasonable
- Should be informed by what has been successful in the past—intellectual merit of the education component
- Do a literature review on educational research too—teaching and learning **in your field**—**Educational** Resources Information Center (ERIC) is a good resource
- Most panels have a person with expertise in education/outreach
- **Should have a plan for assessing the success of the education program**
- Include diversity component—for ideas talk to NMTSU programs such as MST, OSL, Science Fair, Science Olympiad
- International component is gaining importance



Education Component: Examples

- Design **innovative** courses or curricula
- Support **teacher preparation** and enhancement
- Conduct **outreach and mentoring** activities for traditionally underrepresented students
- **Integrate research activities** into undergraduate courses
- Link **education activities** to industrial, international, or cross-disciplinary work
- Design **new educational materials and practices** or adapt materials developed elsewhere



Evaluation/Assessment

- Describe the **purpose and scope** of evaluation, including what questions will be answered and the types of evaluation to be undertaken (e.g., formative, summative)
- Describe how program success will be determined, including **criteria or metrics** for progress or success
- Discuss data collection and analysis
- Include anticipated outcomes
- **Especially important for Education Component**



Management Plan/Timeline

- Needed if you have collaborators
- Complete timeline of all project years and activities
 - Include research activities
 - Include education activities
 - Include evaluation activities



Departmental Letter

- 2 pages
- Purpose
 - Verify PI eligibility
 - Demonstrate level of commitment of the department to the career plan of the junior faculty member (value of and reward for integrating research and education)
- Professional development and mentorship available to you
- Describe how your career goals and responsibilities mesh with that of the university and department
- Potential sustainability of CAREER awardee's efforts in the department
- These are reviewed, not just a check in a box



Summary

The key to any successful proposal, including CAREER, requires you to

- **Start early**
- Develop a sound understanding of the agency/program and its research priorities
- Review funded projects **in your discipline** - Analyze the RFP thoroughly
- Plan the development of the proposal, **including contacting the Program Officer**
- Review literature thoroughly on your research topic, **as well as your education topic**
- **Sell your idea** — remember that a proposal is a sales document, not a scientific or scholarly paper
- Be persistent (keeping in mind eligibility and limit of three tries—one per year)



CAREER Resources

- NSF CAREER Program Page (Solicitation, FAQs, Previous Awards, Directorate & Division Contacts)
<https://beta.nsf.gov/funding/opportunities/faculty-early-career-development-program-career>
- NSF Proposal and Award Policies and Procedures Guide
https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappg
- NSF Data Management Plan
<https://www.nsf.gov/bfa/dias/policy/dmp.jsp>
- Data Management Planning Tool
<https://dmptool.org/>
- NSF Merit Review
http://www.nsf.gov/bfa/dias/policy/merit_review/
- NSF Awards Abstracts Database
<http://www.nsf.gov/awardsearch/>
- NSF Strategic Plan for Fiscal Years 2018-2022
https://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf18045
- ERIC – Education Resources Information Center
<http://eric.ed.gov/>

Faculty Development Programs

National Science Foundation	Faculty Early Career Development Program (CAREER)	http://www.nsf.gov/career
National Aeronautics & Space Administration (NASA)	New (Early Career) Investigator Program	https://nspires.nasaprs.com/external/solicitations/solicitations!init.do
National Institute of Health	Career Development Awards	http://grants.nih.gov/training/careerdevelopmentawards.htm
Health Effects Institute	Walter A. Rosenblith New Investigator Awards	http://www.healtheffects.org/funding.htm
American Chemical Society Petroleum Research Fund	Doctoral New Investigator Grants	https://www.acs.org/content/acs/en/funding/grants/petroleum-research-fund/programs/doctoral-new-investigator-grants.html
Air Force Office of Scientific Research	Young Investigator Program (YIP)	https://community.apan.org/wg/afosr/w/researchareas/12792/young-investigator-program-yip/
Office of Naval Research	Young Investigator's Program (YIP)	http://www.onr.navy.mil/Science-Technology/Directorates/office-research-discovery-invention/Sponsored-Research/YIP.aspx
Office of Naval Research	Summer Faculty Research and Sabbatical leave Program	https://www.onr.navy.mil/en/Education-Outreach/faculty/summer-faculty-research-program
U.S. Air Force	Summer Faculty Fellowship Program	https://afsffp.sysplus.com/
Department of Energy - Office of Science	Early Career Research Program	https://www.energy.gov/science/listings/early-career-program
Sandia National Laboratory	Faculty Appointment and Summer Faculty Research	https://www.sandia.gov/working-with-sandia/academic-partnerships/faculty-collaborations/
Oak Ridge National Lab	Higher Education Research Experiences (HERE)	https://education.ornl.gov/faculty/