NSF CAREER Program

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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 - CAREER is a development award–the described project must be set within the researcher's long-term career path
  - ➢ Education Plan - Integrated Research and Education Focus
  - ➢ Departmental Support – documented by a letter

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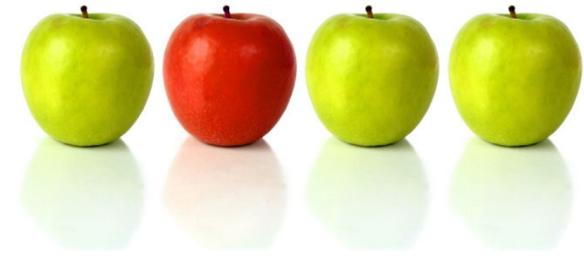
Success Lies in the Planning

- 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

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Faculty Early Career Development Program (CAREER)
Includes the description of NSF Presidential Early Career Awards for Scientists and Engineers (PECASE)

PROGRAM SOLICITATION
NSF 22-586

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 when appropriate (not of support or endorsement)

- A budget that is consistent with the scope of the research and education activities

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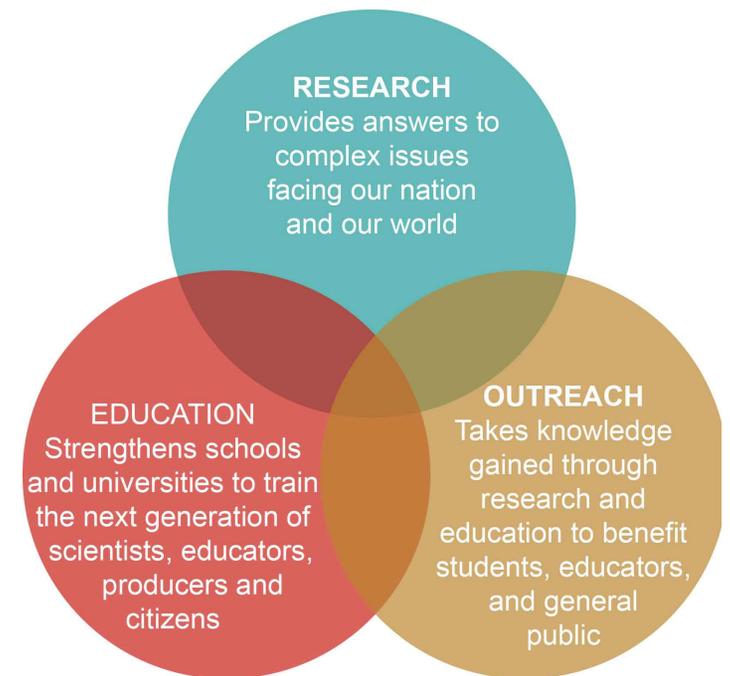SCIENCE • ENGINEERING • RESEARCH UNIVERSITY

Departmental Letter

- No more than 2 pages
- Include the department head's name and title below the signature
- Statement that the PI is eligible for the CAREER program.
- An indication that the PI's proposed CAREER research and education activities are supported by and advance the educational and research goals of the department and the organization, and that the department is committed to the support and professional development of the PI
- A description of a) the relationship between the CAREER project, the PI's career goals and job responsibilities, and the mission of his/her department/organization, and b) the ways in which the department head (or equivalent) will ensure the appropriate mentoring of the PI, in the context of the PI's career development and his/her efforts to integrate research and education throughout the period of the award and beyond.
- These are reviewed, not just a check in a box

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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

RESEARCH
Provides answers to complex issues facing our nation and our world

EDUCATION
Strengthens schools and universities to train the next generation of scientists, educators, producers and citizens

OUTREACH
Takes knowledge gained through research and education to benefit students, educators, and general public

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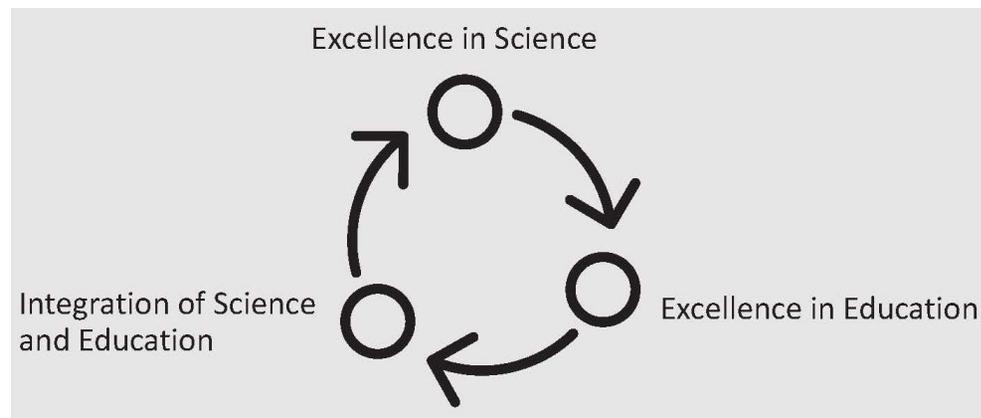
Integration of Research and Education

- 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

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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)

Excellence in Science

Integration of Science and Education

Excellence in Education

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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
- Work with museum and other outreach organizations
- Create web-based activities that can be accessed nation-wide

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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)

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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 2022-2026
https://www.nsf.gov/about/performance/strategic-plan
- NSF CAREER Webinar - https://www.nsf.gov/events/cise-career-proposal-writing-webinar/2025-05-02
- Opportunities for Early Career Researchers - https://www.nsf.gov/funding/early-career-researchers
- ERIC – Education Resources Information Center - http://eric.ed.gov/

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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
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)	https://www.nre.navy.mil/education-outreach/sponsored-research/yip
Office of Naval Research	Summer Faculty Research and Sabbatical leave Program	http://onroutreach-summer-faculty-research-sabbatical.com/#:~:text=The%20Office%20of%20Naval%20Research%20%28ONR%29%20sponsors%20the,or%20research%20appointments%20at%20U.S.%20colleges%20and%20universities.
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/