



Directorate for Education and Human Resources

CAREER

Faculty Early Career Development Program

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CAREER

“... is a Foundation-wide activity that offers the National Science Foundation’s most prestigious awards in support of early-career faculty who have the potential to serve as academic role models in research and education, and to lead advances in the missions of their departments or organizations.”



CAREER is NSF-Wide

- The program started in 1996
- All Directorates/Offices participate
- Proposals are submitted to program of interest
- NSF Presidential Early-Career Awards in Science and Engineering (PECASE) are selected out of the pool of recent CAREER awardees
- The latest solicitation is NSF 20-525, which includes significant revisions.



Goal of the CAREER Program

The intent of the program is to provide stable support at a sufficient level and duration to enable awardees to develop careers not only as outstanding researchers, but also as educators demonstrating commitment to teaching, learning, and dissemination of knowledge.



The CAREER Program Web Site:

www.nsf.gov/career

- Latest Program Solicitation -- NSF 20-525
- Frequently Asked Questions -- NSF 20-025
- CAREER Directorate/Division Contacts
- Link to recent awards
- Link to PECASE awards
- Deadline for the current solicitation: **July 27, 2020**



Institutional Eligibility

- Institutions of Higher Education (IHEs) - Two- and four-year IHEs (including community colleges) accredited in, and having a campus located in, the U.S. acting on behalf of their faculty members.
- Non-profit, non-academic organizations: Independent museums, observatories, research labs, professional societies and similar organizations in the U.S. associated with educational or research activities.
- NSF encourages proposals from different institutional types, including Minority Serving and Predominantly Undergraduate Institutions.



Investigator Eligibility Criteria

Proposers must meet all of the following eligibility requirements as of the annual deadline:

- Hold a doctoral degree in a field supported by NSF;
- Be engaged in research in an area of science, engineering, or education in a field supported by NSF;
- Hold at least a 50% tenure-track (or tenure track-equivalent) position as an assistant professor (or equivalent title);
- Be untenured; and
- Have not previously received a CAREER award. (Prior or concurrent Federal support for other types of awards for non-duplicative research does not preclude eligibility.)



Investigator Eligibility Criteria: Tenure-Track Equivalency

For a position to be considered tenure-track-equivalent, it must meet all of the following requirements:

- (1) the employee has a continuing appointment that is expected to last the five years of a CAREER grant;
- (2) the appointment has substantial research *and* educational responsibilities; and
- (3) the proposed project relates to the employee's career goals and job responsibilities, as well as to the mission of the department or organization.



Investigator Eligibility Criteria: Tenure-Track Equivalency

For non-tenure-track faculty, the Departmental Letter must affirm that the investigator's appointment is at an early-career level equivalent to pre-tenure status, and the Departmental Letter must clearly and convincingly demonstrate how the faculty member's appointment satisfies all the above requirements of tenure-track equivalency.



EHR Programs that Accept CAREER Proposals

Division of Graduate Education

- EHR Core Research (ECR)
- Innovations in Graduate Education (IGE)
- Secure and Trustworthy Cyberspace (SaTC)

Division of Research on Learning in Formal and Informal Settings

- Advancing Informal STEM Learning (AISL)
- Computer Science for All
- Cyberlearning for Work at the Human-Technology Frontier
- Discovery Research PreK-12 (DRK-12)
- EHR Core Research (ECR)
- Innovative Technology Experiences for Students and Teachers (ITEST)



EHR Programs that Accept CAREER Proposals

Division of Undergraduate Education

- EHR Core Research (ECR)
- Improving Undergraduate STEM Education (IUUSE)
- Improving Undergraduate STEM Education (HSI Program)
- Robert Noyce Teacher Scholarship Program (Track 4)

Division of Human Resources Development

- EHR Core Research (ECR)
- Historically Black Colleges and Universities Undergraduate Program
- Improving Undergraduate STEM Education (HSI Program)



CAREER Proposal Ingredients

- A research plan that is compelling
- An education plan that is both innovative and feasible and is fully integrated in the research
- Departmental letter
- Statements of collaboration if relevant
- Appropriate proposal budget



What Makes a Successful EHR CAREER Proposal ?

CAREER investigators are expected to formulate research questions that are likely to yield significant knowledge relevant to STEM education. To support this goal, the proposed research methods should be detailed and carefully justified.

EHR CAREER proposals should meet the following basic requirements:

- Investigators should pose research problems of compelling importance deeply rooted in one or more STEM fields. Proposed research methods must closely align with clear, specific research questions.



What Makes a Successful EHR CAREER Proposal ?

- Investigators must demonstrate how the proposed research plan builds upon existing theory and evidence from relevant fields. Proposals must draw broadly on the current education-relevant literatures and also on the specific literature in any STEM domain of central focus.
- Investigators must explicitly describe the research design, including underlying methodological assumptions, targeted population and sampling, measures and instruments, and data gathering and analysis plan. Data collection procedures should be well specified, particularly with information on the reliability, validity, and appropriateness of proposed measures and instruments or particular plans for establishing them if not initially known.



What Makes a Successful EHR CAREER Proposal ?

- Proposals involving *quantitative* research could for example include: descriptions of the statistical methods to be used; details on how potential threats to internal and external validity will be addressed; estimates of effect sizes, results of power analyses demonstrating the adequacy of proposed sample sizes as appropriate.
- Proposals involving *qualitative* research should explain the procedures that would be used to collect, code, reduce, and analyze data, and describe the specific conceptual frameworks that will guide analyses, along with ways to triangulate results.
- Proposals can strengthen their competitiveness by reporting pilot results and and providing examples of anticipated findings.



What Makes a Successful EHR CAREER Proposal ?

The *Common Guidelines for Education Research and Development* (NSF 13-126), jointly developed by the National Science Foundation and the Institute of Education Sciences in the U.S. Department of Education, are a useful reference to help in the preparation of CAREER proposals for submission to EHR.

The Guidelines can be found at

<http://www.nsf.gov/pubs/2013/nsf13126/nsf13126.pdf> .



Integration of Research and Education

How will your research impact your education goals and how will your education activities feed back into your research? Some possibilities:

- Involving others (postdocs, grad. students, undergraduates, K-12, high school teachers, public) in your research using new tools, lab methods, field study, cyber networks, etc...
- Partnering with those in other communities, especially those historically underrepresented in science and engineering
- Bringing the excitement of your research topics to help in the education of others
- Searching for new methods to deliver your research results to a broader audience than those in the research community
- Using the broader community to gather data for your scientific pursuits ("citizen science")



Evaluation and Advisory Boards

- **Evaluation:** One of the elements to be considered in the review of both the intellectual merit and broader impacts of proposals is the mechanism to evaluate success. Meaningful assessment and evaluation of NSF-funded projects should be based on appropriate metrics. Thus, individual CAREER projects submitted to EHR should include clearly stated goals, specific descriptions of the activities that the PI intends to do, and a plan in place to document the outputs of those activities.
- **Advisory Boards:** CAREER proposals submitted to EHR may include advisory boards, including experts from the fields represented in the proposals to ensure appropriate advice, oversight, direction of the proposed scopes of work, and assessment/evaluation of the research and education activities.



Merit Review Criteria

BOTH CRITERIA, INTELLECTUAL MERIT AND BROADER IMPACT, WILL BE GIVEN FULL CONSIDERATION DURING THE REVIEW AND DECISION-MAKING PROCESSES. EACH CRITERION IS NECESSARY BUT NEITHER, BY ITSELF, IS SUFFICIENT. PROPOSERS MUST FULLY ADDRESS BOTH CRITERIA.

The following elements should be considered in the proposal's review for both criteria:

- What is the potential for the proposed activity to
 - advance knowledge and understanding within its own field or across different fields (Intellectual Merit); and
 - benefit society or advance desired societal outcomes (Broader Impacts)?



Merit Review Criteria (Cont'd)

- To what extent do the proposed activities suggest and explore creative, original, or potentially transformative concepts?
- 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?
- How well qualified is the individual, team, or institution to conduct the proposed activities?
- Are there adequate resources available to the PI (either at the home institution or through collaborations) to carry out the proposed activities?



Important Documents

- The Proposal & Award Policies & Procedures Guide, NSF 20-1, can be found at:

https://www.nsf.gov/publications/pub_summ.jsp?ods_key=papp

- Please also be aware of the relatively new requirement for information on Collaborators and Other Affiliations to be submitted. Please see the [Collaborators and Other Affiliations Information website](#) for updated guidance.
- The NSF CAREER webpage at: https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503214 has additional information pertinent to preparing your proposal.



Thank you!

Questions?