NSF Directorate for Education and Human Resources

CAREER

Faculty Early Career Development Program

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NSF 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."

NSF CAREER is NSF-Wide

- The program started in 1996

- All Directorates/Offices participate

- Proposals are submitted to program of interest

- More than 9,000 CAREER awards have been made over the years

- NSF Presidential Early-Career Awards in Science and Engineering (PECASE) are selected out of the pool of recent CAREER awardees

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NSF 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.

Institutional Eligibility

- Universities and Colleges - Universities and two- and four-year colleges (including community colleges) accredited in, and having a campus located in, the U.S. acting on behalf of their faculty members. Such organizations also are referred to as academic institutions.

- 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

- Hold a doctoral degree in a field supported by NSF by EHR's deadline for submission of CAREER proposals (July 19, 2017; July 18, 2018; and July 17, 2019);

- Be engaged in research and education in a field supported by NSF;

- Be employed in a tenure-track (or tenure-track-equivalent) position as an assistant professor (or equivalent title) as of October 1 after the proposal submission;

- Be untenured as of October 1 following the proposal submission; 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.)
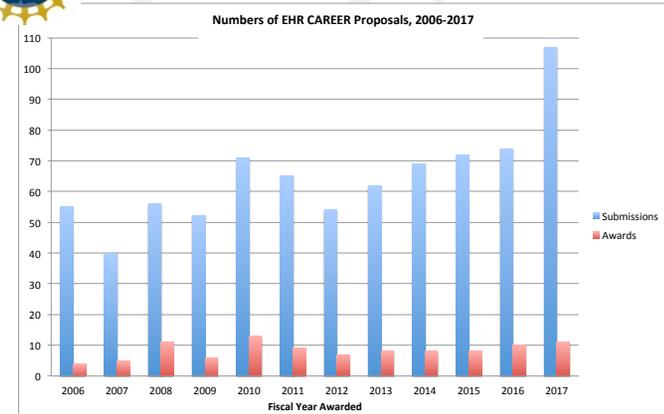
Investigator Eligibility Criteria: Tenure-Track Equivalency

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.

EHR CAREER Proposals Submitted and Awarded

Numbers of EHR CAREER Proposals, 2006-2017

CAREER Proposal Ingredients

- A research plan that is compelling

- An education plan that is both innovative and feasible

- 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 core problems of 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 should include: descriptions of the statistical methods to be used; details on how potential threats to internal and external validity will be addressed; results of power analyses demonstrating the adequacy of proposed sample sizes; and estimates of effect 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.

- 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 evaluation of the impact of the research and education activities.

EHR Programs that Accept CAREER Proposals

Division of Graduate Education

- EHR Core Research (ECR)

Division of Research on Learning in Formal and Informal Settings

- Advancing Informal STEM Learning (AISL)
- Discovery Research K-12 (DRK-12)
- EHR Core Research (ECR)
- Innovative Technology Experiences for Students and Teachers (ITEST)
- STEM + Computing Partnerships (STEM +C)

EHR Programs that Accept CAREER Proposals

Division of Undergraduate Education

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

Division of Human Resources Development

- EHR Core Research (ECR)
- Historically Black Colleges and Universities Undergraduate Program
- Louis Stokes Alliances for Minority Participation
- Tribal Colleges and Universities Program

The CAREER Program Web Site:

www.nsf.gov/career

- Latest Program Solicitation -- NSF 17-537
- Frequently Asked Questions -- NSF 17-050
- CAREER Directorate/Division Contacts
- Link to recent awards
- Link to PECASE awards
- EHR Deadlines for the current solicitation: **July 19, 2017; July 18, 2018; and July 17, 2019**

An Important Document to Consult

The Proposal & Award Policies & Procedures Guide, NSF 17-001, can be found at:

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

Thank you!

Questions?