FAS RESEARCH DEVELOPMENT
2019 NSF CAREER AWARD GUIDANCE FOR FACULTY

Program Summary

The Faculty Early Career Development (CAREER) Program offers the National Science Foundation’s most prestigious awards in support of junior faculty who exemplify the role of teacher-scholars through the integration of outstanding research and excellent education. This competition is open to scholars in all of the fields supported by NSF. NSF anticipates making 450 new and continuing awards this year.

Deadlines

July 17, 2019
Directorates for Biological Sciences (BIO), Computer & Information Science & Engineering (CISE), and Education & Human Resources (EHR)

July 18, 2019
Directorate for Engineering (ENG)

July 19, 2019
Directorates for Geosciences (GEO), Mathematical & Physical Sciences (MPS), and Social, Behavioral & Economic Sciences (SBE)

NOTE: Applications must be submitted to Harvard’s Office for Sponsored Programs for internal review and approval at least 5 business days in advance of the NSF deadline.

Award Information

- 5 year duration
- \$400,000 minimum (including indirect costs), except for applications to the Office of Polar Programs (OPP), Directorate for Engineering (ENG), and Directorate for Biological Sciences (BIO), which have a minimum of \$500,000
- No maximum award size – funding should be requested in accordance with the scope of your project. When determining the size of your request, review prior awards made by the Program(s) considering your application and discuss your planned request with your Program Officer(s) (see NSF Organization List and Division CAREER contacts).

Eligibility

- Tenure-track Assistant Professors who will still be non-tenured on October 1st following the July proposal deadline. Associate Professors are not eligible for the CAREER program.
- CAREER eligibility is not limited by time from degree or years in a tenure-track appointment
- No citizenship restrictions
- You may only receive one CAREER award
You may participate in three CAREER competitions – you may submit one proposal per competition

You may not submit a proposal for a project that is substantially the same as another currently under review by NSF

You may not submit a proposal that was previously declined by NSF and has not been revised to take into account the major comments from the prior review

First Steps

1) Carefully review the program solicitation and FAQs.
2) Discuss your plan with your Department Chair, academic mentors, and peers that have been successful obtaining awards from NSF. For a list of NSF CAREER Award winners at Harvard, contact FAS Research Development at research_development@fas.harvard.edu.
3) Determine which program area(s) at NSF is/are most appropriate to review your proposal (i.e. Molecular and Cellular Biosciences, Earth Sciences) and identify a Program Officer in those area(s). For a list of NSF’s program areas, see http://www.nsf.gov/staff/orglist.jsp.
4) Also identify the appropriate contact for the CAREER program in those Division(s), listed at: http://www.nsf.gov/crssprgm/career/contacts.jsp.
5) If your project has an international component, identify the appropriate country representative(s) in the Office of International Science and Engineering.
6) Send an email to the contacts you have identified, including a brief description of your proposed project and a request for feedback. Below are several questions you may want to ask:
   - Is your project a good fit for the program?
   - What are the expectations for the scope of research and education plans in this particular program area?
   - What is the typical award size in this program?
   - What type of review process does this program undertake (i.e. panel or ad hoc reviews)?

Developing the Education Plan

NSF’s CAREER program requires that you include an education plan in addition to your plans for research and broader impacts. The research and education plans can be described separately within the Project Description, or you may present them together in an integrated narrative. Remember that reviewers who are subject experts in your field will be mostly familiar with your research component. Some programs may also send your proposal for review to education experts in your field, and for that reason, you should make sure that your education component is solid and well-argued. Education activities should be consistent with research and best practices in curriculum, pedagogy, and evaluation. Education plans must cite relevant publications, and local curricula and state education standards to be addressed, if applicable (e.g. for work with K-12 classes).

While NSF expects your education plan to be distinctive, innovative, and go beyond what is expected from a typical Assistant Professor in your field, it should also be doable and not require so much time that your other professional activities are compromised. In addition, it is important to choose activities that really matter to you, and that fit well with your Department’s mission and priorities.

Proposed education activities may be in a broad range of areas and may be directed to any level: K-12 students, undergraduates, graduate students, and/or the general public, but should be related to the proposed research.
Some examples are:

- designing innovative courses or curricula;
- supporting teacher preparation and enhancement;
- contributing to museum exhibits or programs;
- conducting outreach and mentoring activities to enhance scientific literacy or involve students from groups that have been traditionally underrepresented in science;
- researching students' learning and conceptual development in the discipline;
- incorporating research activities into undergraduate courses;
- teaching a graduate seminar on the topic of the research;
- engaging the broader public with your research;
- creating cyberinfrastructure that facilitates involvement of the broad citizenry in the scientific enterprise;
- providing mentored international research experiences for U.S. students;
- linking education activities to industrial, international, or cross-disciplinary work;
- implementing innovative methods for evaluation and assessment;
- designing new or adapting and implementing effective educational materials and practices, and plans for disseminating them;
- building on, or otherwise meaningfully participate in, existing NSF-supported activities or other educational projects ongoing on campus; and
- using new or existing tools to broadly disseminate your research and education activities.

A competitive proposal will include plans for assessing or evaluating your educational activities, tools, or materials. You are encouraged to make connections with appropriate education experts, and to include the necessary letters of commitment in your application. NSF recommends that applicants leverage existing NSF-supported activities or other educational projects ongoing on campus. **For assistance with identifying resources and programs at Harvard that you can leverage, contact FAS Research Development at research_development@fas.harvard.edu.** See the appendix to this document for examples of Harvard programs with which CAREER applicants commonly collaborate. Please note the recommended deadlines listed in the table below if you plan to request this type of assistance.

**Broader Impacts**

The Project Description in your CAREER proposal must include a separate section entitled “Broader Impacts.” While your discussion of broader impacts will likely refer to the education and outreach activities outlined in your education plan, you will also want to include information in this section about how your work advances scientific knowledge and contributes to the achievement of societally relevant outcomes, such as: full participation of women, persons with disabilities, and underrepresented minorities in science, technology, engineering, and mathematics (STEM); improved well-being of individuals in society; development of a diverse, globally competitive STEM workforce; increased partnerships between academia, industry, and others; improved national security; increased economic competitiveness of the US; or enhanced infrastructure for research and education. FAS Research Development can provide a sample upon request of a particularly exemplary education plan and broader impacts statement.
Application Components

✓ Cover sheet (completed by administrator)
✓ Project Summary (1 page limit divided into Overview, Intellectual Merit, Broader Impacts)
✓ Project Description (15 pages, including Intellectual Merit, Broader Impacts, and Results from Prior NSF Support sections)
✓ References Cited (no page limit)
✓ Budget and budget justification (5 pages)
✓ PI Biosketch (2 pages)
✓ Current and Pending Support
✓ Facilities, Equipment and Other Resources (no page limit)
✓ Departmental letter from Chair committing institutional support for the professional development and mentoring of the PI, supporting the proposed activities and confirming that they fit well with the department/organization’s mission, and certifying that the PI is eligible to apply (2 pages)
✓ Letters of collaboration, NOT letters of support or recommendation (1 page each, should use NSF’s single-sentence format)
✓ Data management plan (2 pages)
✓ Post-doctoral mentoring plan, if applicable (1 page)
✓ Collaborators and Other Affiliations Information (in NSF Excel template)

Research Support Services Provided for Faculty by FAS Research Development

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<th>Application Component</th>
<th>Service</th>
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<td>Pre-application Research</td>
<td>Assistance with determining the appropriate directorate(s)/program(s) for your proposal</td>
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<td>Provide samples of award-winning Harvard proposals, including an example of an outstanding Education Plan and Broader Impacts statement</td>
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<tr>
<td>Project Narrative</td>
<td>Introduction to Harvard program(s) for support for your education plan and related assessment/evaluation activities (draft proposal ideally provided at least one month in advance of NSF deadline)</td>
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<td>Resources for identifying external evaluators</td>
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<td>Recommendations on how to leverage existing resources for your Broader Impacts plan</td>
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<td>Conduct a &quot;responsiveness review&quot; to ensure your narrative addresses NSF’s evaluation/review criteria</td>
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<td>Coordinate an internal review panel of FAS faculty members prior to submission (draft proposal ideally provided at least one month in advance of NSF deadline)</td>
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<td>General grantsmanship advice and strategy</td>
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<td>Resubmission advice - strategies for drafting a successful resubmission if you were declined in a previous round</td>
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Departmental Letter          Template available
Letters of Collaboration     Obtain detailed information about the support services partner organizations/programs will provide, along with letters of commitment
Data Management Plan         Template available
Postdoctoral Mentoring Plan  Template available

For assistance, please contact Jennifer Corby, jcorby@fas.harvard.edu, 617-495-1590, or Susan Gomes, susan_gomes@harvard.edu, 617-496-9448.
APPENDIX A
The Derek Bok Center for Teaching and Learning

Mission: By supporting experimentation, innovation, and evidence-based practices, the Derek Bok Center for Teaching and Learning seeks to create transformational learning experiences for faculty, graduate students, and undergraduates in Harvard's Faculty of Arts and Sciences.

Potential activities by which the Bok Center can support faculty applying for NSF CAREER proposals:

• Brainstorming educational activities to include in your CAREER proposal.
• Helping faculty design new courses or revise existing courses to engage students with scientific inquiry and incorporate evidence-based teaching practices. Example activities might include:
  o developing active learning exercises to transform the classroom;
  o creating exercises or case studies in which students investigate original data;
  o developing multimedia materials that allow faculty to share their research with students;
  o designing alternative assignments that allow students to explore concepts and data in ways other than traditional problem sets or essays; and
  o implementing a blended learning approach that combines out-of-class assignments and videos with in-class activities.
• Providing support for assessment and/or evaluation of the results of these activities.
• Offering guidance to faculty interested in working with K-12 students or teachers. The Bok Center works directly with several programs for K-12 students and teachers, and can also provide advice for developing outreach activities.
• Identifying appropriate references to cite in your Education Plan.

Requested Timeline: In order to provide the most effective support, the Bok Center requests that CAREER applicants initiate discussions with them at least one month prior to the grant deadline.

Fee for Services: Generally no, with the exception of focus group costs or personnel effort in the case of especially large engagements.

Contacts:

For pedagogy support:
Marty Samuels, Associate Director for Science
msamuels@fas.harvard.edu, 617-495-8946

For program evaluation support:
Jenny Bergeron, Director of Educational Research and Evaluation
jbergeron@fas.harvard.edu, 617-495-4983

For support with K-12 outreach:
Susan Johnson, Assistant Director for Socially Engaged Learning
susanjohnson@fas.harvard.edu, 617-496-3457
APPENDIX B

Media Production Center

Mission:

The Media Production Center (MPC) provides access to high quality audio and video production capabilities through its facilities and technical staff. The Center works with faculty, their classes, and departments to produce materials to support teaching, outreach, and research.

Potential Activities:

Studio Recording
The MPC oversees two studios: the Plympton studio at 59 Plympton Street and the Hauser studio in Widener Library. The Hauser studio is larger, can accommodate more people on-camera at a time, and features a green screen cyc-wall for chroma-key shoots. The Plympton studio doubles as both a video and music recording space and has a Steinway piano. When reserving either studio, that reservation includes the studio space, all the necessary equipment (cameras, lights, microphones), and staff to operate the equipment.

Video Post-production
MPC staff can work with you to edit video and audio material recorded in its studios or elsewhere. They can encode video files that will be ready to share online.

Requested Timeline:

If you are considering working with the MPC, please reach out as soon as possible so that your project can be added to the schedule at 617-495-9440 or ims_mpc@fas.harvard.edu. Reservations for the studios are typically made at least two weeks in advance.

Fee for Services:

Studio recording in the Hauser Studio: no charge
Studio recording in the Plympton Studio: starting at $93/hr
Video and audio post production: $83/hr