The NSF CAREER Award

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NSF CAREER website

http://www.nsf.gov/career

- NSF contacts
- Funded awards
- Career-Life Balance supplements
- Supplemental research opportunities
Purpose

- To support junior faculty who exemplify the role of teacher-scholars through outstanding research, excellent education and the integration of education and research.

- To build a firm foundation for a lifetime of leadership in integrating education and research, where research is enhanced by inspired teaching and enthusiastic learning.
Purpose

- A career development award, not just a research award.
Eligibility

- Hold a doctoral degree by the deadline date in a field supported by NSF; be *untenured until October 1 following the deadline*; and have not previously received a CAREER award
  - AND
- Be employed in a tenure-track (or tenure-track-equivalent) position as an assistant professor (or equivalent title by October 1 following the submission deadline.)
Number of submissions

- You can enter 3 CAREER competitions.
- You cannot submit the same research proposal to more than one entity.
- The proposed research must be distinct from any other federally-funded research.
Deadlines

- Directorate-dependant:
  - BIO, CISE, EHR: July 20, 2016
  - ENG: July 21, 2016
  - GEO, MPS, SBE: July 22, 2016
Choosing a Program to Submit To

- Indicate the program you wish to review/fund your proposal on your proposal’s cover page.
- Multidisciplinary proposals can list multiple divisions on the cover page.
Divisions of:

- Biological Infrastructure (DBI)
- Environmental Biology (DEB)
- Integrative Organismal Systems (IOS)
- Molecular and Cellular Biosciences (MCB)
- Emerging Frontiers (EF)
Clusters

- MCB
  - Cellular Dynamics and Function
  - Genetic Mechanisms
  - Molecular Biophysics
  - Systems and Synthetic Biology
See What’s Been Funded: Advanced Search

### Awardee Information

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
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<tbody>
<tr>
<td>Principal Investigator First Name</td>
<td></td>
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<tr>
<td>Principal Investigator Last Name</td>
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**HINT:** Including the Co-Principal Investigator will result in slower searches.

- Include Co-Principal Investigator

### Program Information

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<th>Field</th>
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<tbody>
<tr>
<td>NSF Organization</td>
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<tr>
<td>Element Code</td>
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<tr>
<td>Reference Code</td>
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**HINT:** The "Program" box searches both program element and program reference names and codes.

### Additional Information

<table>
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<tr>
<td>Keyword</td>
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**HINT:** The Keyword field searches on the title and abstract only.

- Search Award Title Only

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<th>Field</th>
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<tr>
<td>Award Number</td>
<td>Select one</td>
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**HINT:** Data prior to 1976 may be less complete.

- Active Awards
- Expired Awards
Funding

- Directorate-dependant:
  - BIO, ENG, and PLR: minimum $500,000 total for 5 years
  - Others: minimum $400,000 total for 5 years
    - Total costs = direct + indirect costs
- Look at what’s been funded to see what the normal level is for your area.
- Talk to your program officer to see what levels they are funding at.
Funding

- Can fund:
  - Yourself
  - Postdocs
  - Grad students
  - Travel
  - Supplies, etc.

- Can’t fund:
  - Senior personnel (other faculty or senior staff)
Supplemental Funding

- Career-Life Balance (if on family leave for childbirth/adoption or elder care)
- Research Opportunities in Europe (collaboration with ERC-funded researchers)
- Research Opportunities in Germany (collaboration with DFG-funded researchers)
Writing the Proposal

- Follow the instructions in the RFA
- Follow the instructions in the NSF Grant Proposal Guide (GPG)
  
Proposal Components

- Project summary (1 page)
- Project description (15 pages)
- Biosketch (2 pages, using NSF format)
- Departmental letter (2 pages)
- Letters of collaboration (if applicable, 1 page each)
- Postdoc mentoring plan (if applicable, 1 page)
- Data management plan (2 pages)
- Facilities & Resources
- References Cited
- Budget
- Budget justification (3 pages)
Preparing to Write

1. Identify a strategic plan.
2. Define your research question.
3. Define your needs.
4. Draft the proposal.
I. Identify a Strategic Plan

- What are your strategic, long-term career goals?
- What steps do you need to take to get there?
- How would this award help you achieve those goals?
2. Define Your Research Question

- Identify a gap in knowledge in your field.
- Identify a problem whose solution will be a big step forward for the field, rather than an incremental step.
- Choose a problem that is going to matter to more people than just you.
2. Define Your Research Question

- Place your research question in the context of your larger research plan for your career.
- Which portion of your long-term career goals will be addressed with this grant?
3. Define Your Need

- What do I need in order to do my research that I don’t already have?
- How much do I need?
- Who do I need to help me?
4. Draft the Proposal

Understand your audience:

- Assume you are not writing for an expert.
- Target your proposal at 3 levels:
  - Someone who doesn’t know your field.
  - Someone familiar with, yet not expert in your field.
  - Someone expert in your field.
4. Draft the Proposal

More detailed instructions available in the “NSF CAREER Award Writing Guide.”
Project Summary

Three Sections:

- **Overview section:**
  - Research and education objectives.
  - Plans for the integration of education and research activities.

- Separate sections on how the proposal meets both the **Intellectual Merit** and **Broader Impact** review criteria.

- 4700 characters, in three separate boxes (can upload PDF if using special characters).
Project Description, per NSF:

- The proposed research project, including preliminary supporting data where appropriate, specific objectives, methods and procedures to be used, and expected significance of the results;
- The proposed educational activities, including plans to evaluate their impact on students and other participants;
- How the research and educational activities are integrated with one another; and
- Results of prior NSF support, if PI or co-PI on any grant in last 5 years.
Project Description

- Proposers should address:
  - what they want to do,
  - why they want to do it,
  - how they plan to do it,
  - how they will know if they succeed, and
  - what benefits could accrue if the project is successful.
Project Description

- Include:
  - Objectives/Specific aims
  - Research Plan
  - Education Plan
  - Broader Impacts
  - Timeline/Milestones
  - Results from Prior NSF Support (or say “Not applicable”)
Project Description

- For the Research Plan, include:
  - Background and Significance
  - Preliminary Data
  - Research Design and Methods
  - Potential Pitfalls and Alternative Approaches
  - Evaluation/Expected Outcomes
  - Timeline
  - Future steps
Presentation is important!
- Proper English
- Correct grammar
- Attractive formatting
- Effective figures and tables (don’t forget the titles and captions)
NSF Peer Review Criteria

What is the intellectual merit of the proposed activity?

What are the broader impacts of the proposed activity?
Peer Review Criteria

**Intellectual Merit:**
The potential to advance knowledge

**Broader Impacts:**
The potential to benefit society and contribute to the achievement of specific, desired societal outcomes
NSF Peer Review Criteria

1. What is the potential for the proposed activity to:
   a. Advance knowledge and understanding within its own field or across different fields (Intellectual Merit); and
   b. Benefit society or advance desired societal outcomes (Broader Impacts)?

2. To what extent do the proposed activities suggest and explore creative, original, or potentially transformative concepts?
3. 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?

4. How well qualified is the individual, team, or organization to conduct the proposed activities?

5. Are there adequate resources available to the PI (either at the home organization or through collaborations) to carry out the proposed activities?
Peer Review Scoring

- Excellent
- Very Good
- Good
- Fair
- Poor
NSF Staff Review Criteria

- Integration of research and education.
- Integrating diversity into NSF programs, projects, and activities.
The NSF CAREER Award: Creating a winning education plan

Kate Spohr
Research Outreach Specialist
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Berkeley Research Development Office
CAREER program

Goal of Faculty Early Career Development Program—
To support junior faculty who exemplify the role of teacher-scholars through outstanding research, excellent education and the integration of education and research.

- Objectives/specific aims
- Research plan
- Education plan
- Broader impacts
- Results from prior NSF support

15 page project description
Developing your education plan
Identify the “right” focus & scope

- What types of E&O activities does your research lend itself to?
- What unique expertise, resources, and assets can you provide?
- Where can you have the biggest impact?
- What do you want to spend 5 years on? (AND: What are you realistically able to accomplish in 5 years?)
- How will the education plan be integrated with your research plan?
Involving the community, leveraging partnerships

- What gaps can you address?
- How can you involve others in your research—particularly those underrepresented in STEM?
- How can you involve your whole lab?
- What partners can you engage with?
Partnerships are key

Per NSF: Proposers are encouraged to collaborate with, utilize resources in academia and from other sectors (i.e. industry, museums, schools, after school programs, community orgs, etc).

Benefits of partnering

- Lends credibility to your project.
- Adds expertise to your team.
- Provides in-kind resources—e.g. marketing lists, facilities, volunteers.
- Helps with scaling up, dissemination.
- Builds in sustainability.
Elements of a successful education plan

- Activities go beyond your ordinary job duties. BUT: the workload is not be unreasonable.
- Activities are informed by research & best practices in education/pedagogy (use references).
- Traditionally underrepresented communities are included in meaningful ways.
- Activities include measurable outcomes.
- Activities match the expectations of the NSF directorate to which you are applying (search abstracts, check with program officer).
Education plan (suggested length 3-5 pgs)

- Overview, background, aims
- Design and methods
- Evaluation
- Integration of research and education
- Broader impacts
- Timeline
Remember the review criteria!

All 5 review elements apply to Intellectual Merit and Broader Impacts.
Frequently asked questions

- How much weight does NSF give to each criteria in the review process?
- What number and scope of education activities is reasonable?
- How important are the concepts of creativity and originality in education plans?
- What level of effort & financial commitment is expected?
Beyond the award – supplements

- **REU** – Research Experiences for Undergraduates, $6k/student/year. Up to 2 students; more if URM.

- **RET** – Research Experiences for Teachers, up to $10k/teacher/year (stipend/supplies). 1-2 teachers per year, ENG and CISE only.

- Contact your program director first.
- Apply at beginning of fiscal year (October).
- All progress reports must be up to date!
Broader impacts help, consultations

Role and purpose of Broader Impacts - provide examples and links to NSF Broader Impacts guidelines.

Resources and training.

Kate Spohr, kspohr@berkeley.edu
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