

NSF CAREER Proposal Development Workshop



May 2015

Jennifer Sinclair Curtis

Associate Dean for Research and Facilities, College of Engineering
392-0946

jcurtis@che.ufl.edu

Sobha Jaishankar

Assistant Vice President

Research Program Development, UF Office of Research
392-8247

sjaishan@ufl.edu

Recent NSF CAREER Award Recipients

Tanmay Lele, CHE, tlele@che.ufl.edu

George Lan, ISE, glan@ise.ufl.edu

Greg Hudalla, BME, ghudalla@bme.ufl.edu

Mrinal Kumar, MAE, mrinalkumar@ufl.edu

Sharing tips for success

Upcoming Webinar

NSF CAREER Program Webinar: 1:00 - 3:00 pm EDT May 26, 2015 -- URL:
http://www.nsf.gov/events/event_summ.jsp?cntn_id=134940

Documents

- NSF CAREER solicitation, 15-555:
- http://www.nsf.gov/publications/pub_summ.jsp?WT.z_pims_id=503214&ods_key=nsf15555
- My Slides
- 2015 NSF Faculty Career Development (CAREER) Program Summary (Jenn Hubbs, Office of Research)

Please add your name/e-mail to sign-in sheet if you want to receive copies of these last two items

Eva, my assistant will also e-mail you about participation in a mock panel

CAREER: The Faculty Early Career Development (CAREER) Program

- NSF's most prestigious award in support of junior faculty
- Emphasizes outstanding research, excellent education and the *integration* of education and research
- Funds the academic *career development* of new faculty (it is not purely a research award)

CAREER Program

“A Foundation-wide activity that offers the National Science Foundation’s most prestigious awards in support of junior faculty who exemplify the role of ***teacher-scholars*** through outstanding research, excellent education and the ***integration of education and research*** within the context of the mission of their organizations.”

CAREER Program

- 5 years
- \$500,000 (ENG)
- A PI may submit only one CAREER proposal per annual competition.
 - may not participate in more than three CAREER competitions
 - proposals that are withdrawn before review or are returned without review do not count in three max

Eligibility

- Hold a doctoral degree by the deadline date in a field supported by NSF
- Be untenured until October 1 following the deadline, not an Associate Professor
- Have not previously received a CAREER award
- Be employed in a tenure-track position by October 1 following the deadline
- No citizenship requirements, except PECASE

PECASE

Each year NSF selects nominees for the Presidential Early Career Awards for Scientists and Engineers (PECASE) from among the most meritorious recent NSF CAREER awardees. No application for PECASE and up to 20 are selected each year.

Selection criteria:

- 1) innovative research at the frontiers of science and technology that is relevant to the mission of the sponsoring organization or agency, and
- 2) community service demonstrated through scientific leadership, education or community outreach.

Deadlines

- Full Proposal Deadline Date: July 21, 2015

BIO (Biological Sciences), CISE (Computer and Information Sciences), EHR (Education and Human Resources)

- Full Proposal Deadline Date: July 22, 2015

ENG (Engineering)

- Full Proposal Deadline Date: July 23, 2015

GEO (Geosciences), MPS (Mathematical and Physical Sciences), SBE (Social, Behavioral and Economic Sciences)

NSF Award Criteria

- Intellectual merit
 - Advancing/transforming the frontiers of knowledge
 - Creativity and novelty of approach
 - Well-organized, clear, sound approach
 - Qualification of investigator
 - Access to adequate resources
- Broader impacts (not an afterthought)
 - Benefit society through research itself
 - Promote of teaching and training
 - Inclusion of under-represented minorities
 - Assessment and dissemination of results

Some Critical Elements

- Research *and* education/outreach – best CAREER proposals integrate both
- No co-PIs are permitted
- Project title begins with “CAREER”
- One page project summary
- 15 pages for project description
- Proposal follows the Proposal & Award Policies and Procedures Guide NSF15-1

Supplementary Documentation

- Letters of collaboration, single sentence format (anything deviating from that can cause rejection without review)
- No letters of recommendation for PI
- Length of departmental letter, 2 pages, must include specific elements
 - PI's activities integrated into goals of department and UF
 - Department is committed to support of PI, mentoring of PI
 - Certifying PI is eligible
- Post-doc mentoring must be included (one page), if post-doc funding in budget
- Data management plan – dissemination and sharing of data, publications, samples, physical collections, software and models

<http://research.ufl.edu/research-program-development/proposal-development-resources.html>

Project Summary

Probably the most important page

Three sections/Four Paragraphs

1. Overview

My long-term research goal is...In pursuit of this goal, the research objective of this CAREER proposal is... and the research approach is....

My long-term educational goal is...In pursuit of this goal, the educational objective of this CAREER proposal is...and the educational approach is...

2. Intellectual Merit

3. Broader Impact

Research

- Your career involves a ***research path/overall goal***
- Determine your research path – your lifelong research goals and put this upfront in your proposal
- In pursuit of this goal, the ***objective*** of this CAREER proposal is....
- NSF does not support (except as incidental to the goals of the award) design, development, control, or commercialization
- Rather...Test a hypothesis X, account for X

Research

- Is innovative and pushes the frontiers of knowledge (need thorough literature search)
- Builds on your strengths
- Worth doing, contributes to national needs and priorities
- Differentiates from previous research work

Broader Impacts

Means to benefit society include:

- Economic/environment/health/policy
- Education and training (all ages)
- Providing opportunities for underrepresented groups

Pick 2 or 3 things to do and do them well

Sustainability of your activities

CAREER Education Plan Tips

- Provide statement of philosophy towards education
- Provide concise review of pertinent literature and/or rationale for your approach – shows you are serious in the area
- Focus on innovative, highly leveraged (impact) programs – may also plug into existing programs
- Need evaluation plans - both formative (immediate) and summative (cumulative)
- Outline meaningful dissemination plan

Education

K-12 (we have Center for Precollegiate Outreach, Director, Dr. Mary Jo Koroly, korolymj@cpet.ufl.edu)

Undergraduate

- **Curriculum, new course or new minor**
- **Research Projects (we have Center for Undergrad Research, (Dr. Anne Donnelly, adonnelly@aa.ufl.edu)**

Graduate

- **Curriculum, Conferences, Involvement with industry, national labs, Public access website, Develop an app**

Museum exhibits (we have Florida Museum of Natural History, Dr. Bruce MacFadden, bmacfadd@flmnh.ufl.edu)

Write to the Reviewers

Write to the reviewers – not to your PhD/post-doc advisor and not to yourself

It is a proposal, not a manuscript

Your proposal will be judged by a panel of reviewers

The review panel members will have broad expertise

CAREER PROPOSAL TIPS

Help the reviewers

Clearly answer these questions – no confusion on these points

1. What is it about (the research objective)?
2. How will you do it? (the approach)
3. Can you do it? (your qualifications and facilities)
4. Is it worth doing? (impact)

CAREER PROPOSAL TIPS

Establish your credibility in problem area and amongst your community

- Evidence the quality of your past work
- Walk the modest/bragging line

Make it clear that you have necessary resources

Use some special formatting – bold, underline, italics to add effect and call attention to important details

Organization – make use of headings and subheadings

Pitfalls

- Too much text devoted to complex details
 - Goals are buried in proposal
 - Too ambitious for time/money
 - Lack of knowledge of state-of-the-art
 - Poor English, grammar, sloppiness
 - Failure to establish significance of research
-
- ***Do not wait until last week to prepare your proposal***
 - ***Proposal draft should be ready one month before deadline***
 - ***Participate in the mock review panel and get feedback on your proposal***

Selecting Program/Contact NSF

- Closest to your strengths
- View past awards

<http://www.nsf.gov/crssprgm/career/awards.jsp>

- Contact program officer for advice

<http://www.nsf.gov/crssprgm/career/contacts.jsp>

- Do this asap, send project summary, does my research fit well with your program? (Not... is it a good topic?)
- Review panel comments from previous unsuccessful proposal
- Give you ideas for collaborations, other resources

Proposal Review

- ~ Review 3 to 4 months after submission
- Panel review
- Reviews obtained from non-conflicted experts—at least three required, more typical
- ~ 6 months decision is finalized; you hear back

Be a Reviewer

Proposal review is an important service to your community

There's no better way to see how the system works

There's no better way to understand what makes a winning proposal

Meet NSF staff and network

How to Volunteer

Contact your program director

E-mail a brief (1-page) bio to your program director

Be sure to include your contact information

Indicate your areas of expertise

This will get you an expense-paid trip to visit your program director

Beyond the Award

Beyond the award there are supplements

- REU (Research Experience for Undergraduates): \$8,000 per year per student, nominally one student per award (two, provided one is from an underrepresented group), does NOT include equipment**
- RET (Research Experience for Teachers): \$10,000 to involve a K-12 teacher in your research**
- Must contact your program director first and submit early in the fiscal year**