National Science Foundation
Division of Engineering Education and Centers (EEC)

NSF Engineering Education and Centers Division
Engineering Education

Demystifying the NSF CAREER Program: Tips from a Program Officer
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- Live captioning service (see link in chat window)
- We have muted all participants
- Your camera is optional—we are recording this webinar
- Type questions into chat box as we go or during Q&A session
- If I don't get to your question during Q&A, please email me afterwards

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Today's Webinar

- Program goals
- Eligibility requirements, new rules
- Proposal mechanics
- How proposals are evaluated
- What happens after you submit
- My advice

CAREER Program Goals

- Foundation-wide activity that offers NSF's most prestigious awards for faculty members beginning their independent careers
- To provide stable support at a sufficient level and duration to enable awardees to develop careers as outstanding researchers and educators who effectively integrate teaching, learning, and discovery

CAREER Program Goals

- Awardees are selected on the basis of their plans to develop highly integrative and effective research and education careers
- Increase participation of those traditionally under-represented in science and engineering

Award Duration and Size

- All awards are for a 5-year duration
- Minimum ENG award size of $500,000
- No maximum award size- check with PO if you're going above

PI Eligibility Requirements

- Hold a doctoral degree as of submission date.
- Be employed in a tenure-track (or equivalent) position as of October 1 following submission
- Be employed as an assistant professor (or equivalent) as of October 1 following submission
- Have not competed more than two times previously in the CAREER program
- Have not previously received an NSF CAREER award

New Eligibility Rules for Non-Tenure Track

- Tenure track equivalent is eligible (more permissive than previously)
- Adjunct faculty not eligible
- Continuing appointment that is expected to last the five years of the CAREER award
- Appointment has substantial research and educational goals and component
- Early career equivalent to pre-tenure
- All other eligibility requirements also apply
- Eligibility certified in Departmental Letter

Departmental Letter

- An indication that your CAREER activities are supported by and integrated into the goals of the Dept. and organization and the Dept. is committed to supporting, mentoring and your professional development
- A description of the relationship between the CAREER project, the your career goals and job responsibilities, and the goals of your department/organization
- Verification of the PI's self-certified CAREER eligibility

Letters of Collaboration

- Letters of Collaboration should contain only one sentence:
  - If the proposal submitted by Dr. First Last entitled “Title” is selected for funding by the NSF, it is my intent to collaborate and/or commit resources as detailed in the Project Description.
- The spirit of the new guideline is that no additional project description content should be included in the letter itself

Budget – New Rules

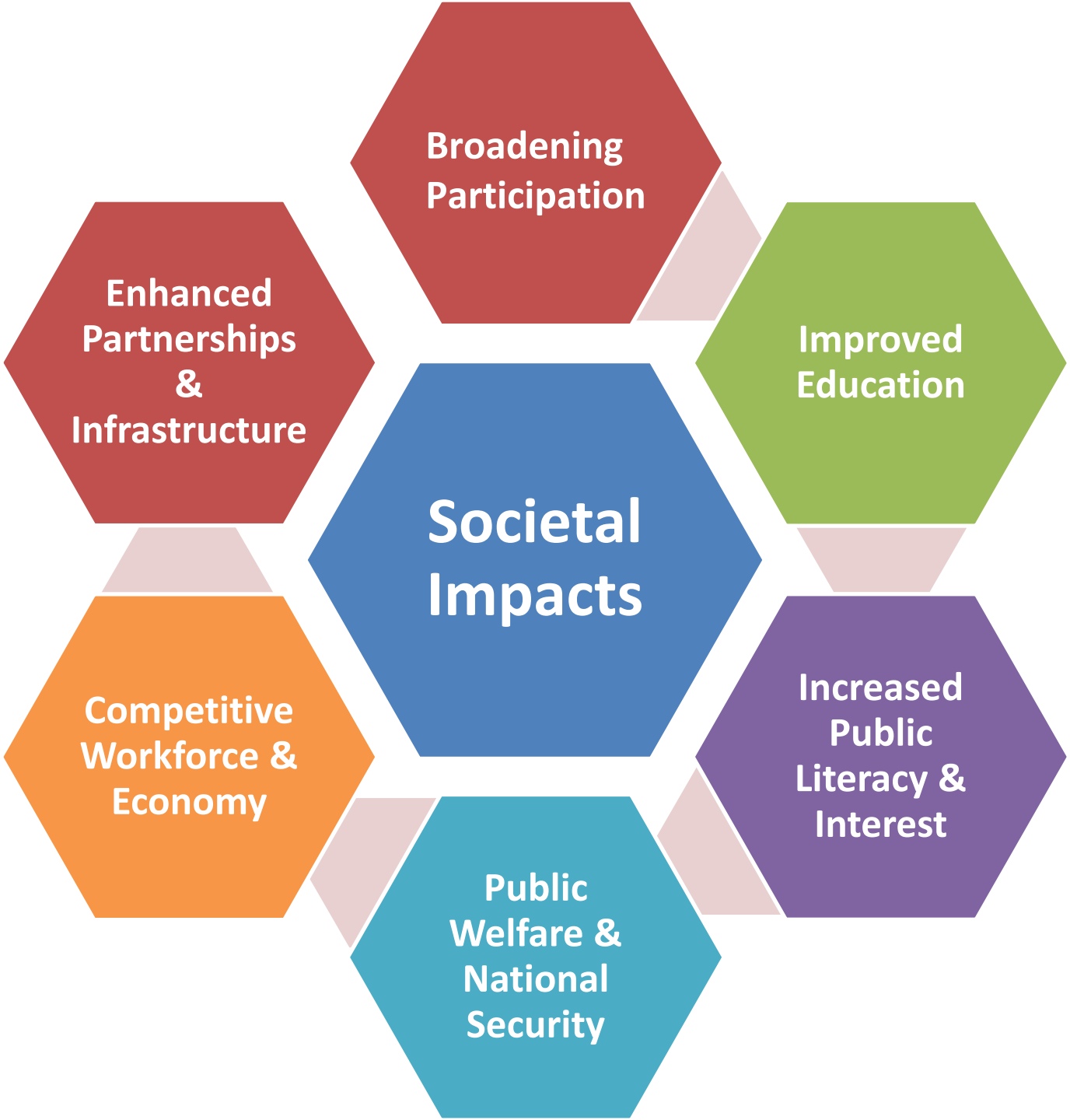
- Support for Senior Personnel now allowed
- Senior Personnel must have limited role, with corresponding limited support
- Intent is that they are involved in the project as a "helper", not major intellectual contributor
- Salary support for Senior Personnel appears in Budget Category A, but they must not appear on coversheet as co-PI

Review Criteria

- Evaluated using NSF's two merit review criteria:
- What is the intellectual merit of the proposed activity?
- What are the broader impacts of the proposed activity?
- Additional Consideration for CAREER proposals
  - Integration of Research and Education

Intellectual Merit

- Advancing & contributing to science
- Well-conceived & organized
- Expertise evident
- Strong methodology


Broadening Participation
Enhanced Partnerships & Infrastructure
Improved Education
Societal Impacts
Competitive Workforce & Economy
Increased Public Literacy & Interest
Public Welfare & National Security

Characteristics of Broader Impacts

- Don't just list activities
  - Describe the **impacts** of activities
  - More is not always better
- Include strategies to achieve impacts
  - Have a well-defined set of objectives and outcomes
  - Discuss the rationale for the expectation
  - Provide details on implementation
  - Include evaluation and metrics
  - Approach with same level of detail as intellectual merit content

Research & Education Integration

- According to NSF17-537
  - All CAREER proposals must have an integrated research and education plan at their core
- Integration of Research and Education
  - NSF encourages all applicants to think creatively about how their research will impact their education goals and, conversely, how their education activities will feed back into their research.

Research & Education Integration

- Research and educational activities do not need to be addressed separately - the presentation of the integrated project is better served by interspersing the two throughout the Project Description
- Does the PI propose creative, effective and integrated research and education plans as well as plans for assessing these components?
- Is it a well-argued and specific proposal for activities that will, over a 5-year period, build a firm foundation for a lifetime of contributions to research and education?

What Happens After you Submit?

Proposal Receipt and Review
3 Months

Proposal Processing
3 – 6+ Months

4 – 6 WEEKS **PROPOSAL RECEIVED** Administrative review, compliance checking	2 – 3 MONTHS **REVIEWERS SELECTED** Potential panelists contacted, panel finalized	~ 3 MONTHS **PEER REVIEW** Panel meets. Panel provides guidance to PO, NOT a decision
3 – 6+ MONTHS **PROGRAM OFFICER RECOMMENDATION** PO considers panel input and other factors, may contact PI for additional information, decides on recommendation	3 – 6+ MONTHS **DIVISION DIRECTOR REVIEW** PO makes recommendation, recommendation reviewed at higher levels	3 – 6+ MONTHS **NOTIFICATION** Notification received by PI and/or SPO

What Happens After You Submit

- Panel provides guidance to PO: HR, R, DNR. Even if a proposal was highly recommended by panel it may not be awarded
- Receiving a request for additional information does not guarantee an award will be made
- If a proposal is shown in Fastlane as recommended, be patient. The PO has made a recommendation and it is being processed at higher levels

What Happens After You Submit

- Overdue reports will delay awards, and in some cases can mean an intended award will not be made
  - Reports should be submitted by the due date (**not the overdue date**!). The 90 days between the due date and overdue date are for the PO to review and request changes
  - Overdue reports for **any** proposal you are associated with will prevent an award from being processed

IRB: This is important!

- While a proposal can be reviewed without IRB approval, projects involving human subjects **cannot** be recommended for funding until this certification or its equivalent is filed in the proposal jacket
  - You should file your proposal with you local IRB **at the same time you submit it to NSF**, so that the approval procedure will not delay the award processing
  - Approval for project with indefinite plans
- For detailed information: https://www.nsf.gov/bfa/dias/policy/human.jsp

CAUTION

The following part of this presentation largely represents the opinions of the individual program officer and not an official NSF position.

Hallmarks of the CAREER (Julie's advice)

- This is a research proposal *and a career development plan*—provide a roadmap for how this 5 years of funding will provide the foundation for a career-long research and education career
- You need more than just a great research design, the research questions you address must transform the field
  - What are the research questions you want to answer in your academic career and your CAREER proposal? These must be BIG—they must be field-changing types of questions—"If only the field of engineering education could answer [insert your question here], or figure out [insert your dilemma here], then we would really be moving the field forward!"
- What are the educational goals of your academic career and your CAREER proposal?
  - Who are the "learners" in your education plan? It doesn't have to be students

Hallmarks of the CAREER (Julie's advice)

- The CAREER is Uniquely YOU! Spend time (space) convincing the reviewers that you are right (the only) person to do this
- Provide a very clear roadmap of how this work will be the foundation for the rest of your academic career. Explain how you will make good headway creating this foundation in 5 yrs with $500,000
  - Start by telling the reviewers about your overall career vision; spell out the BIG PICTURE question you want to address in your career, then explain and justify why you are starting with these particular RQs, scope, etc. of this particular project.
  - No one else has the same career vision, so if you you do this successfully, you'll be making a great start at achieving the rest of the info on this slide
  - The link between the BIG PICTURE questions and the CAREER RQs needs to be tight
- Describe why you are uniquely situated to do this work; why it makes sense to your institutional context, individual professional experience, interests
- Tell the reviewers why YOU are the only person who can do this work—litmus test: *if I (as a program director) could replace your name with another researcher with similar qualifications and be confident that the project would still be successful, it's not really a CAREER proposal*
- Do all of these things in both the 15 page proposal and the 1-page summary (very abbreviated, obviously)

Writing a Persuasive Proposal

- By the end of page 1, the reviewer needs to know what you will do (roughly)
- The activities alone are not persuasive; you need an argument for why those activities lead to desired outcomes in both intellectual merit and broader impacts
- Build trust in the reviewers that what you can't fit in the page limit is within your grasp
- Whatever decisions you make–be transparent and justify them
- You **MUST** follow the rules of the solicitation and the PAPPG

Writing a Persuasive Proposal: Help the Reviewers

- Make what they are looking for easy to find, using the language of the review criteria and headings to highlight the elements in the project description
- Don't assume that all reviewers will know the jargon of your discourse community or commonly used acronyms
- Consider how your proposal will read both when reading start to finish and when a reviewer skims to look for certain elements

Contacting Program Officers- General Advice

- Recognize that program officers are *busy*
- Better to email rather than call
- Do NOT mass email—multiple POs may work on a program, talking to >1 creates redundant work
- Be prepared to say what you're asking for: advice on where to submit an idea, feedback (what kind?) on a one-pager to a program, procedural advice or answers to specific questions
- Consider the Policy Office for legal/policy

Contacting Program Officers- My Guidelines

- Available to answer quick questions by email (please be patient)
- If you'd like to discuss your idea:
  - Read the solicitation
  - Review this webinar
  - Discuss your ideas with colleagues, then
- Email me (julmarti@nsf.gov) to set up a 15 min call. Send:
  - 1 page summary that addresses Broader Impacts, Intellectual Merit, review specific criteria
  - 2-3 "burning questions" to be answered during the call
  - Several available times (keep in mind that I stay booked up 2-3 weeks ahead)
- Once we have talked, I'm happy to have follow-on calls with updated summaries and questions, or answer quick questions by email

Questions

- Am I eligible?
- To what extent do I need to include preliminary results?
- Should I hire a postdoc or a grad student?
- Does the NSF Eng Ed program allow linking the CAREER project to NSF Big 10 ideas?
- Is it better to do research in class or out of class/or combined?

Questions?

Type your question into the chat window