NSF CAREER Award Workshop 2023

NSF Faculty Early Career Development Program

TEXAS TECH UNIVERSITY
Office *of* Research Development & Communications™

Agenda

- Overview and Q&A (~30 minutes)
- Panel and Q&A (~60 minutes)
- Networking Lunch (~60 minutes)

Handouts

- Slide notes

NOTICE!
Presentation is based on **solicitation NSF 22-586**. A 2023 version may be published closer to deadline and should be used instead for proposal preparation.

Virtual Handouts

- NSF CAREER Proposal Guide
- Crafting a Concept Paper
- Contacting the Program Manager
- Example CAREER Proposal

Purpose

What is CAREER? A foundation.

"CAREER: The Faculty Early Career Development (CAREER) Program 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 mission of their department or organization."

NSF 22-586 Solicitation https://www.nsf.gov/publications/pub_summ.jsp?WT.z_pims_id=503214&ods_key=nsf22586

"Activities pursued by early-career faculty should build a firm foundation for a lifetime of leadership in integrating education and research."

https://beta.nsf.gov/funding/opportunities/faculty-early-career-development-program-career

Project is for 5-year period, but it has aspects of a firm foundation, so it looks ahead. Balance how to convey this. CAREER project should not be a side project in your lab, but it is the main project on which to build career.

From NSF CAREER Webinar 5/10/2022 https://www.nsf.gov/news/news_summ.jsp?cntn_id=300464&org=NSF&from=news

Preparation

NSF

Directorates

Divisions

Programs

Funding level is Directorate dependent

Divisions may have different expectations for CAREER

Programs must agree to fund CAREER

MANDATORY!

You will need to use the Solicitation (NSF 22-586) and the NSF Proposal & Award Policies & Procedures Guide (PAPPG) to prepare a proposal.

TIP!

"Proposers are encouraged to communicate with the CAREER contact or cognizant Program Officer in the Division closest to their area of research to discuss the expectations and approaches that are most appropriate for that area"

-NSF 22-586

Project Description

Reviewers need to know just a few things

What is the Research about?	➢ Research Objective
How will you do it?	➢ Technical Approach
Can you do it?	➢ You & Your Facilities
Is it worth doing?	➢ Intellectual Merit & Broader Impacts
Will effort provide firm foundation for career plans?	➢ Integration of Education & Research

-from 2021 NSF CAREER Program Briefing NSF 20-525 (webinar slides)

CAREER is Different

What do you want your proposal to be evaluated on?

inadequacy
unclearness
inference
doubt

vs.

IDEA
EVIDENCE
MERIT
IMPACTS

Value

Key to Successful Proposals

- Communicate value of your Idea
- Communicate appropriateness of your approach & broader impacts to deliver valuable outcomes

…research to NSF, to TTU, to your field, to your career

…broader impacts to who?

Key concepts to support value

- Well-conceived
- Evidence-based
- Validated (methods, metrics, models, etc.)
- Defined (success, outcomes, career goals, etc.)

Key impression to give reviewers

- You can deliver on that value described

Research Plan

Advance knowledge and balanced with societal outcomes

Integrated and balanced with Education Plan

Well-conceived. High quality

Creative, original, or potentially transformative. Effective

Education Plan

Research inspired. Creative. Effective

Integrated and balanced with Research Plan

Evaluated

Broader Impacts

Advance societal outcomes and balanced with knowledge

Accomplished by activities of, related to, or complementary to the research

Evaluated

Disseminated

Research Plan

TIP!

What types of research has NSF supported lately in your field?

Most of Project Description and most of Budget

Education Plan

Suggested length is 3-5 pages.

TIP!

Trends change. Consider recent examples from NSF.

Broader Impacts

"A good broader impact activity does not need to be innovative; but it must be effective."
http://cisebroaderimpacts.org/

TIP!

Trends change. Consider recent examples from NSF.

Education and Research Integration

You are a scholar and a teacher.
You are already integrated.

"While excellence in both research and education is expected, activity of an intensity that leads to an unreasonable workload is not. For instance, teaching additional courses or taking on additional duties is not expected. What is expected is a well-argued and specific proposal for activities over a 5-year period that will build a firm foundation for a lifetime of integrated contributions to research and education."

https://nsf.gov/pubs/2022/nsf22100/nsf22100.jsp#q19

Education goes beyond regular professorial responsibilities. But it cannot use up all your time. Education should be balanced and tied to research.

-From NSF CAREER Webinar 5/10/2022 https://www.nsf.gov/news/news_summ.jsp?cntn_id=300464&org=NSF&from=news

Just mentoring grad students and post docs is not a great education piece but K-12 and community piece is good to add, for example. Weave together as whole.

-From NSF CAREER Webinar 5/10/2022

Assessment and Evaluation

How will you know if the Education Plan or Broader Impacts are successful?

You need a way to evaluate. You should learn assessment. But you do not have to come up with tools, etc. You can leverage resources at institutions to do assessment.

-From NSF CAREER Webinar 5/10/2022 https://www.nsf.gov/news/news_summ.jsp?cntn_id=300464&org=NSF&from=news

Evaluation scale depends on discipline and on norms in type of program to which you are submitting, as well as type of research questions. You should be able to document what you did and have some sense of how positive it was. This is not another research activity, though, and most of funding should be toward research. This is not a huge component.

-From NSF CAREER Webinar 5/10/2022

Diversity

MERIT REVIEW!

"NSF's mission calls for the **broadening of opportunities** and expanding participation of groups, institutions, and geographic regions that are **underrepresented in STEM disciplines**, which is essential to the health and vitality of science and engineering. NSF is committed to this **principle of diversity** and deems it central to the programs, projects, and activities it considers and supports."

(emphasis added) NSF 22-586 (V.I.)

Budget

supports the project description and covers proposed activities

…and Other Required Documents

make them work for you to support the narrative

NSF Merit Review Criteria

Intellectual Merit & Broader Impacts

"Both criteria are to be given full consideration during the review and decision-making processes; each criterion is necessary but neither, by itself, is sufficient."

-Faculty Early Career Development Program (CAREER) NSF 22-586

Goal!
A reviewer who champions your proposal to the Program Officer, a Program Officer who champions your proposal to the Division Director, and a Division Director who concurs.

Merit Review

Potential	Intellectual Merit, Broader Impacts
Originality	Creative, original, transformative?
Methods	Sound rationale? Assessed for success?
Qualifications	PI, team, organization?
Resources	Adequate?

Common Mistakes

education plan lacks measurable objectives, evaluation plan, timeline

research and education are not aligned, i.e., parallel lines that will never intersect

education plan lacks innovation and creativity; doesn't meet expectations of the program

no effort to include traditionally underrepresented communities in meaningful ways

proposer lacks familiarity with research / best practices in curriculum, pedagogy, evaluation

Returned Without Review

Listing a Co-PI on the cover page

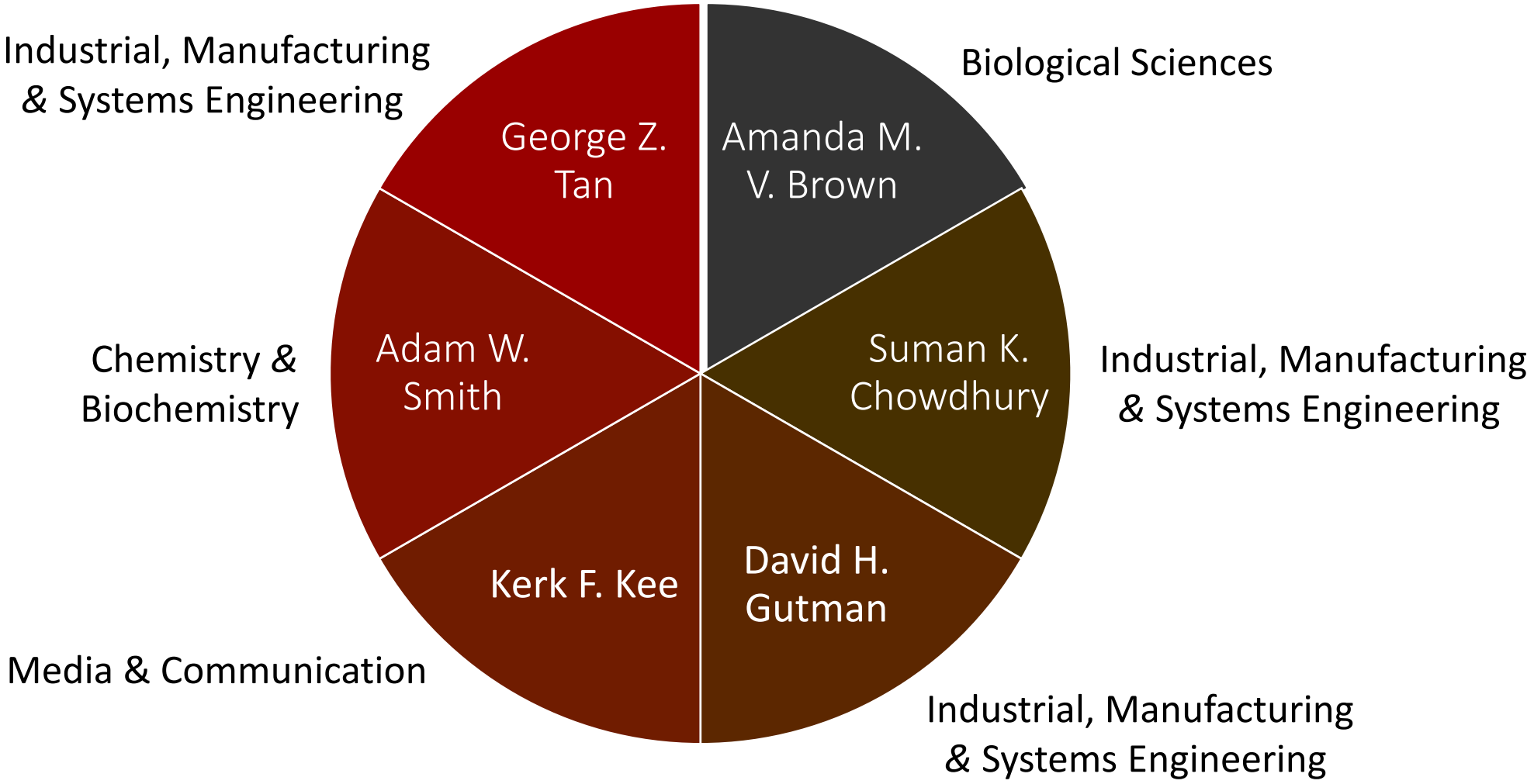
Missing departmental letter

Departure in the format of letters of collaboration

Proposed work duplicates proposal under consideration by NSF

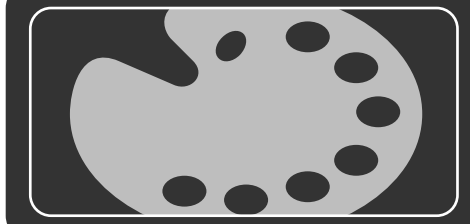
Proposal previously declined and not revised from prior NSF review

TTU Panelists



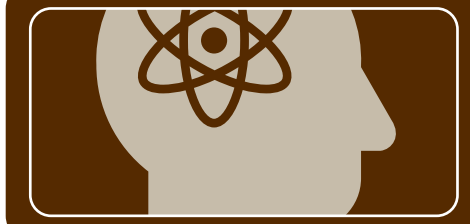
Questions

Evaluation



Graphics

- Amber McCord, CoMC

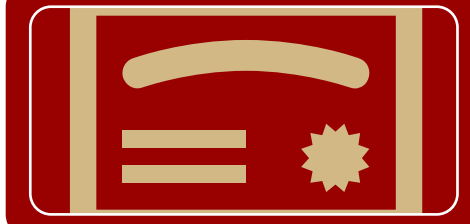


STEM Center for Outreach, Research & Education (STEM CORE)

- Director - Jessica Spott, PhD
- Outreach Coordinator - Allison Eubanks, MEd

Human Research Protection Program, HRPP

- Director - CassiDe Street, PhD



Previous CAREER Recipients and Panelists