

# Tips for Turning Good Ideas into Competitive National Science Foundation Engineering Education CAREER Proposals:

## A Grant Writing Workshop

Olga Pierrakos, Ph.D.

Program Director, Division of Undergraduate Education, Education and Human Resources Directorate  
National Science Foundation  
Arlington, Virginia, USA

**Abstract** — The National Science Foundation CAREER Program offers prestigious awards annually to support junior faculty who exemplify the role of teacher-scholars through outstanding research and the integration of education and research. This three-hour workshop will support faculty who are interested in exploring an engineering education research NSF CAREER proposal.

**Keywords**—NSF CAREER; grant writing; proposal; engineering education research

### I. INTRODUCTION

The National Science Foundation CAREER Program is a “Foundation-wide program that offers NSF’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. Such activities should build a firm foundation for a lifetime of leadership in integrating education and research [1].” **The purpose of this participant-centered workshop is to support new faculty in developing strong engineering education research NSF CAREER proposals.**

### II. WORKSHOP DESCRIPTION

Workshop participants will learn about existing NSF programs that support engineering education research and learn tips for developing strong proposals in developing a research plan and educational plan (two critical elements of successful NSF CAREER proposals). The workshop will be interactive in nature and will include activities designed to help participants identify areas in which their ideas and proposals can be enhanced. A pre-survey will be administered to capture participant expectations; and readings will be provided to support participants’ preparation for this workshop. A post-survey will be administered to evaluate the effectiveness of the session.

*Maximum audience size: no more than 20 participants.  
There is no fee for attendees.*

### III. GOALS

The three overarching goals for this workshop are to:

- (1) Review program eligibility and merit review criteria
- (2) Gain and share tips for preparing a successful NSF CAREER proposal.
- (3) Use a logic model to outline engineering education research NSF grant proposals.
- (4) Gain tips for successful proposal writing and developing strong NSF proposals.

### IV. AGENDA

The following table details the tentative workshop agenda.

TABLE I. WORKSHOP AGENDA

Tentative Agenda		
Goal	Brief Description	Time
Introduction	Welcome, introductions, expectations	15 mins
Program Background	Introduce NSF CAREER program details as well as share eligibility and merit review criteria	15 mins
Share Resources	Share tips for the entire process of preparing an engineering education research NSF CAREER proposal	15 mins
Share Logic Model	Use a grant writing logic model to outline key aspects of a successful NSF CAREER proposal	15 mins
Work Session I	THINK: Individual ‘Logic Model’ work PAIR: Peer Sharing SHARE: Large Group Roundtable Discussion and Q&A	50 mins
Break		15 mins
Work Session II	THINK: Individual ‘Logic Model’ work PAIR: Peer Sharing SHARE: Large Group Roundtable Discussion and Q&A	45 mins
Wrap-up	Reflect and Q&A	10 mins
TOTAL WORKSHOP DURATION		3 hours

The sponsor for this workshop is the National Science Foundation.

## V. OUTCOMES

A key outcome of this workshop is to build capacity in the engineering education research community and support new faculty in the development of successful NSF CAREER proposals. Strong NSF CAREER Awards help the entire engineering education community.

## VI. FACILITATOR QUALIFICATIONS

Dr. Olga Pierrakos is a Program Director in the Division of Undergraduate Education at the National Science Foundation (NSF). She is also a Founding Faculty and Associate Professor in the Department of Engineering at James Madison University, as well as a 2009 National Science Foundation CAREER Awardee in the area of engineering education research. She has served as PI or co-PI on National Science Foundation awards totaling over \$2.5 Million. Over the past

couple of years, she has conducted over ten grant writing workshops, with attendees totaling over 200 faculty.

## ACKNOWLEDGMENT

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## REFERENCES

- [1] National Science Education, 2015, NSF Faculty Early Career Development Program (CAREER), [http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=503214](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503214)