NSF CAREER Proposal Preparation

April 2018

Sally Bond
Assistant Director of Research Development Services
Proposal Coordination
Office of the Executive Vice President for Research and Partnerships

PURDUE UNIVERSITY

Research and Partnerships

Funding and Grant Writing Help

PURDUE UNIVERSITY | Office of the Executive Vice President for Research and Partnerships

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- Where do I go for help with...
- Cost Sharing
- Research Bridge Program

Funding and Grant Writing

The goal of the EVPRP Research Development staff is to assist faculty in the development of research and education proposals. EVPRP staff provide a broad range of services and resources related to funding and grantsmanship. Below are some of the ways we can assist.

Funding Resources

The funding page provides information on internal, external, seed, and early investigator funding opportunities. Links to helpful funding search tools and e-mail alerts can also be found here.

Limited Submissions

Check here for details on internal competitions including deadlines, templates and submission guidelines.

Grant Writing

Research Development staff can provide assistance with both large and small proposals. This page explains our services and provides links to other useful proposal preparation resources.

Site Visits

Our staff can assist with the logistics and coordination of site visits allowing the research team to focus on their science and team. Follow this link to find out more about these services.

Events

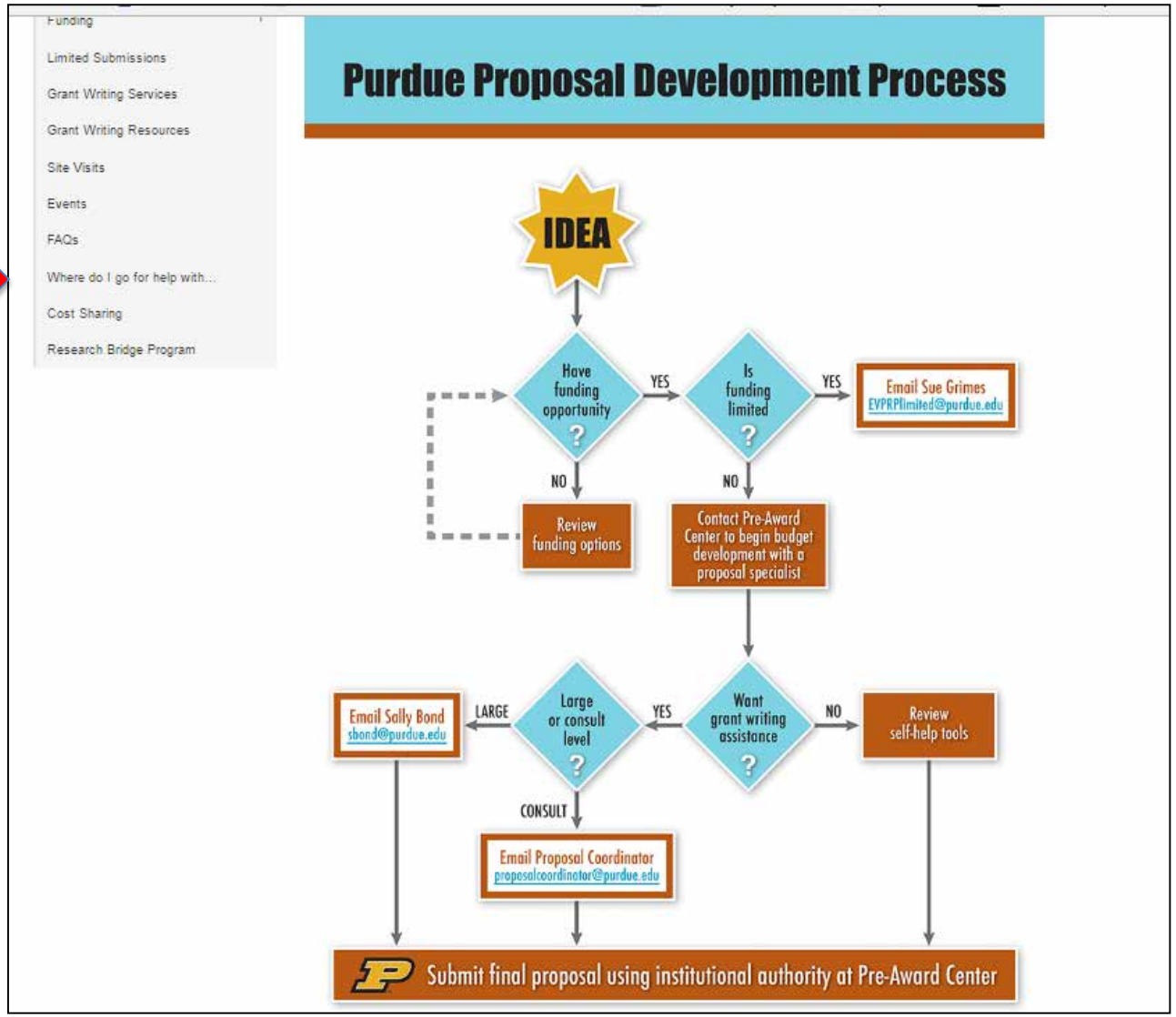
The events page provides information on upcoming grantsmanship workshops and events including dates, times, and registration information. Presentations from previous events can also be accessed from this site.

Other Useful Links

Our *Guide to the Grants Process at Purdue University* and information on potential education and outreach partners are available here as well as links to other grantsmanship resources.

Where Do I Go for Help with….?

http://www.purdue.edu/research/funding-and-grant-writing/flow-chart.php



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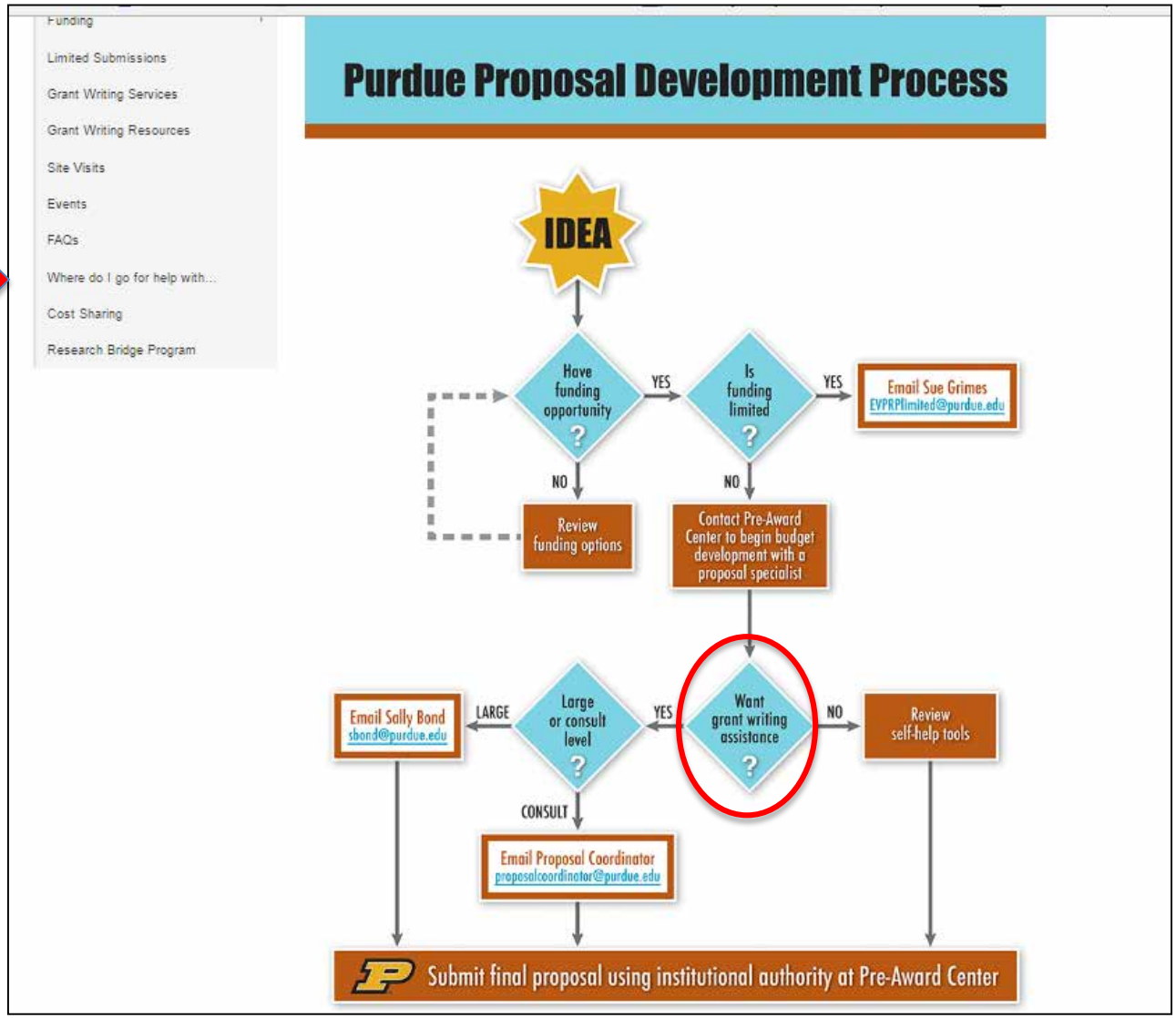

Research Development Cheat Sheet

Proposal Prep 101

Distinctives…Examples…Process

What Makes a Good CAREER Proposal?

Not your typical NSF research proposal

- more “path” than project

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- more “path” than project
- strategic fit with institution

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- more “path” than project
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- clearly transformative research direction

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Not your typical NSF research proposal

- more “path” than project
- strategic fit with institution
- clearly transformative research direction
- creative and integrated education and research

Research Path Not Project

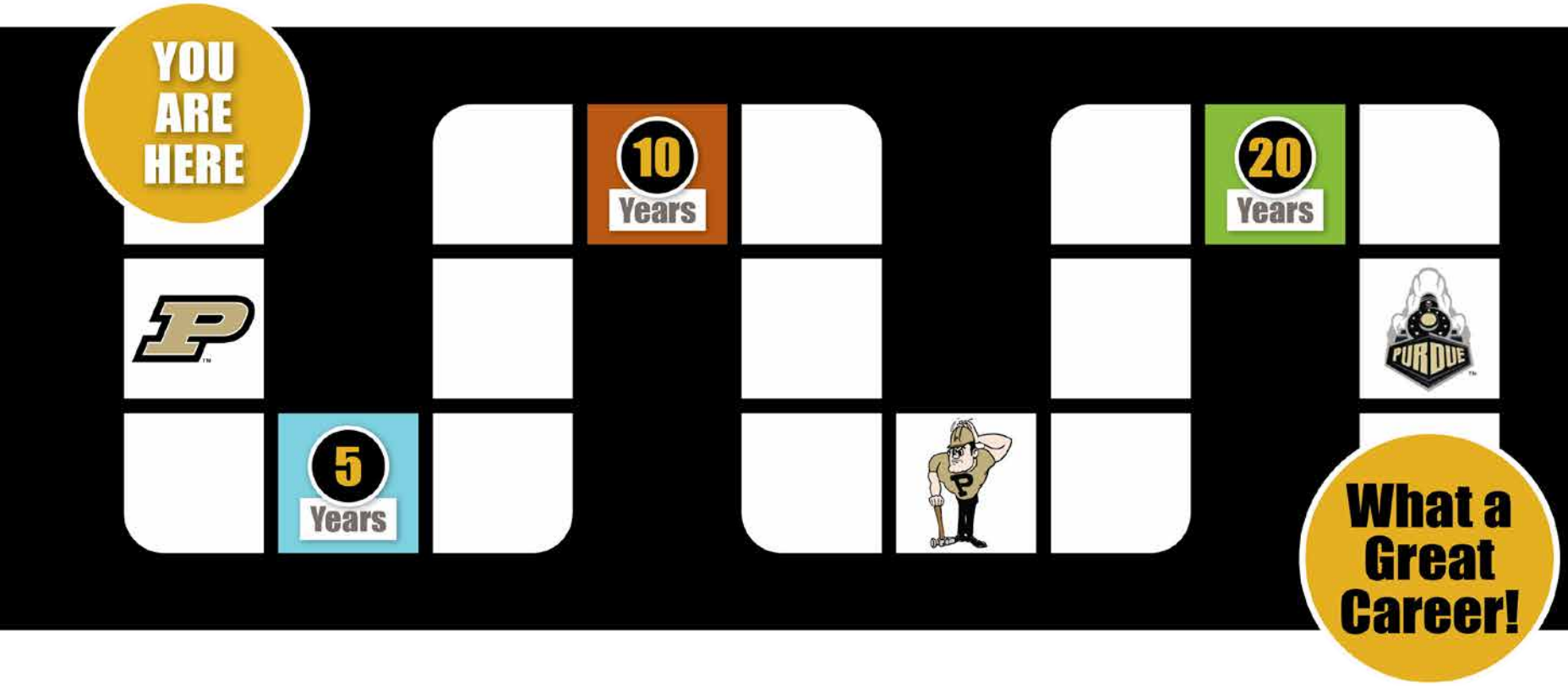
Funds academic career development of new faculty

….should contain a well-argued and specific proposal that will, over a 5-year period, build a firm foundation for a lifetime of contributions to research and education in the context of the Principal Investigator's organization."

(Section V in CAREER solicitation)

Research Path Not Project

What is your strategic plan?



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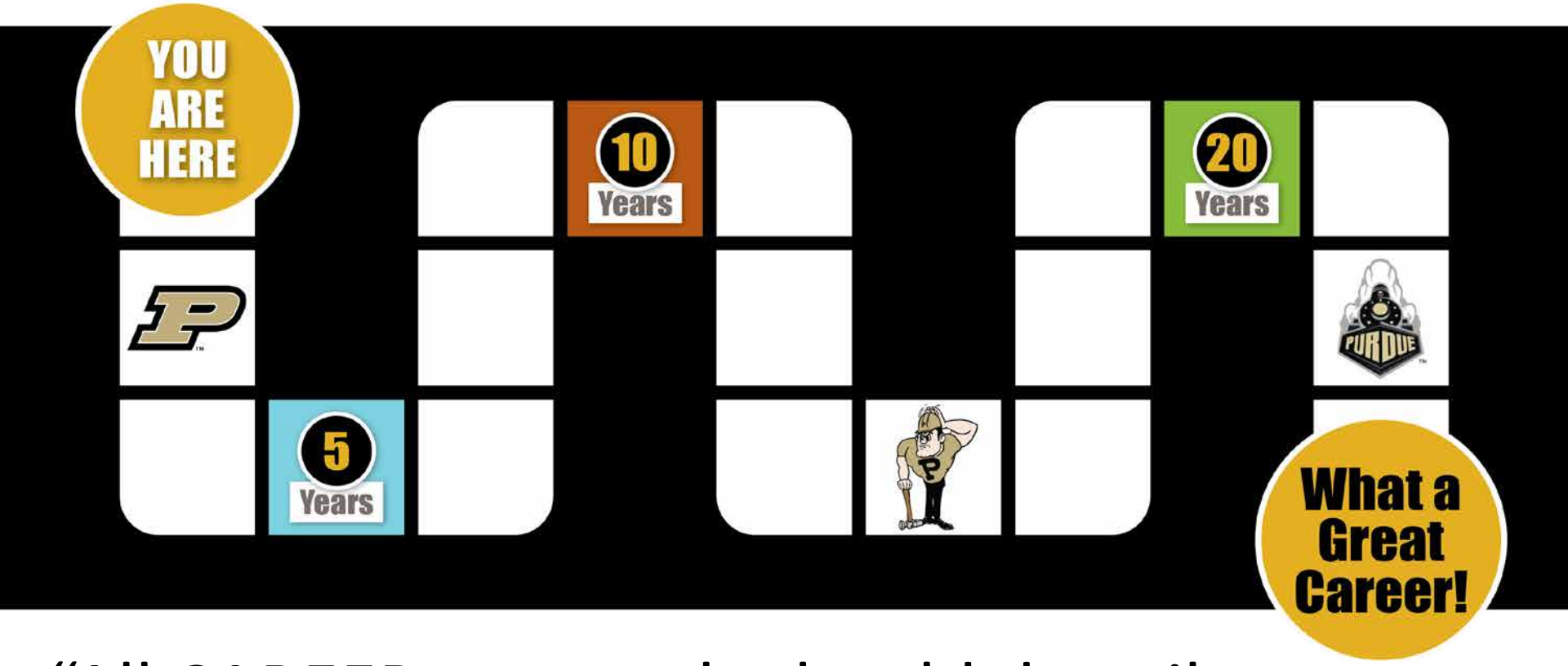

"All CAREER proposals should describe an integrated path that will lead to a successful career…" (section II in CAREER solicitation)

Research Path Not Project

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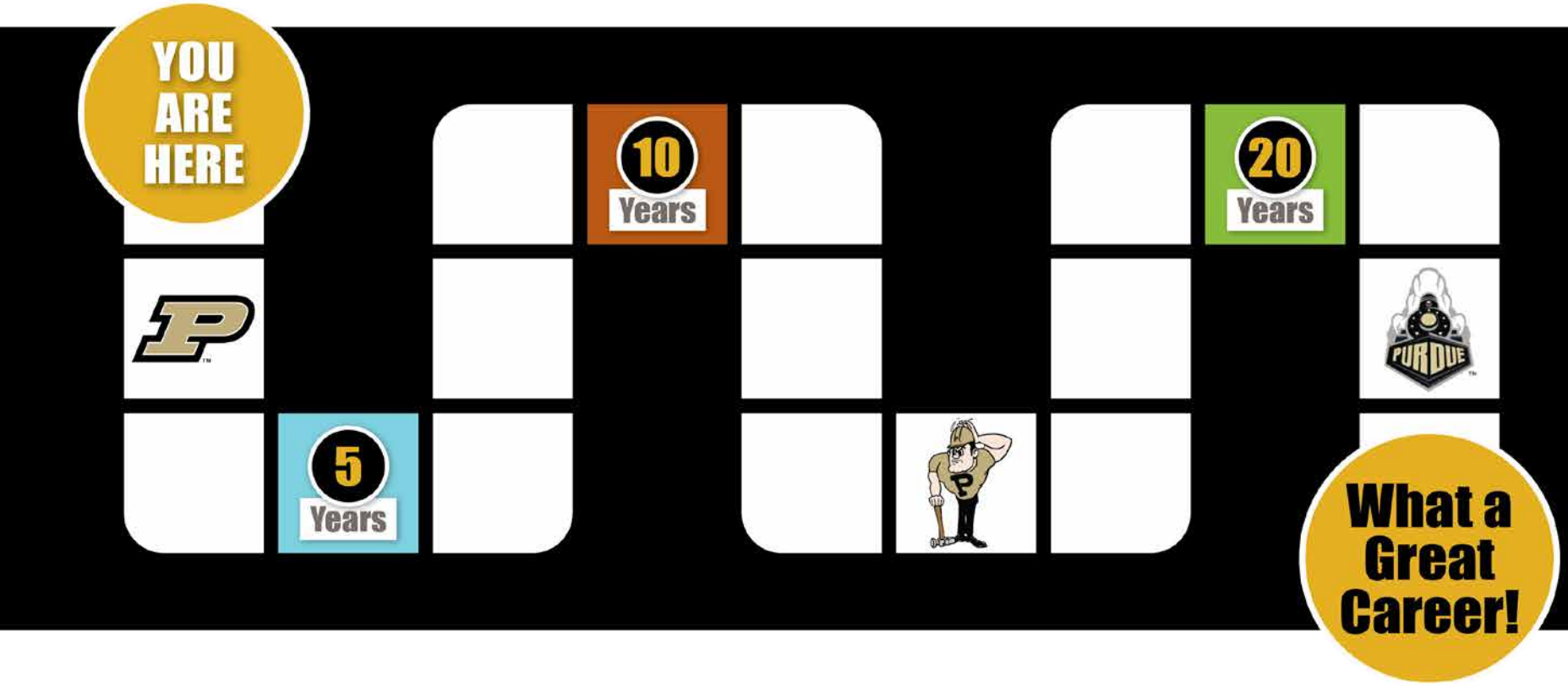
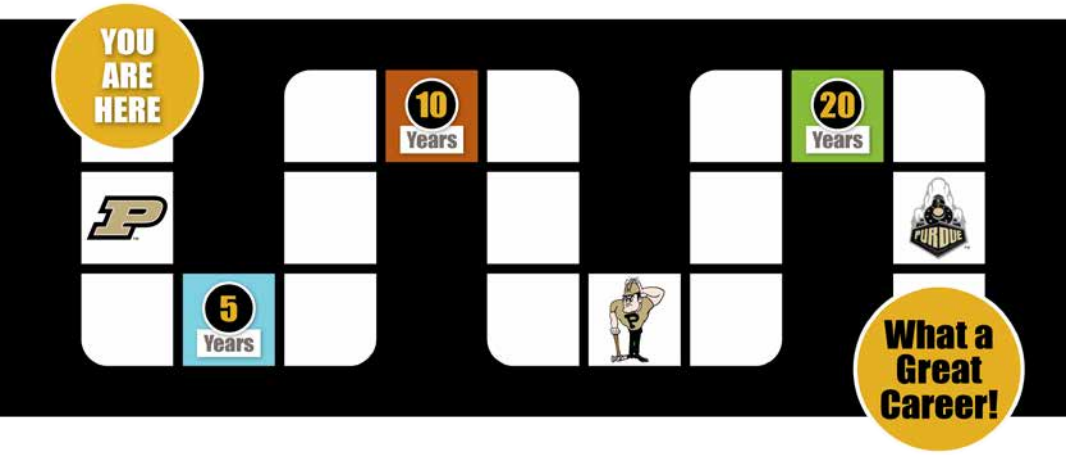


Where do you want to be in 5 years? 10 years? 20 years?

Research Path Not Project

You want your review panel to say this too



…"has made an excellent case for how the proposed research and education plan will help her achieve her personal career vision."

Reviews from Senay Purzer, 2012 Purdue CAREER Awardee
Assistant Professor of Engineering Education

Ask yourself blue sky questions…

- What problem do you feel passionate about?
- Where do you want to have a transformative impact?
- In what ways are you prepared to push the frontiers of knowledge?
- Where can you contribute to national needs and priorities?

Clear Career and Research Goals

1.3 Career objectives

The long term career goal of the PI is to integrate excellence in the science and engineering of nano-structured semiconductor devices with education of future scientists and engineers. Achieving this goal will contribute significantly to the *fundamental knowledge about band, polarization, and strain engineering* of nitride nanostructures and will bring these materials to the level of maturity necessary for infrared commercial applications. The research plans detailed in this proposal naturally continue the PI's previous studies of infrared lasers, and current investigations of correlations between semiconductor structure and infrared optical properties. The proposed program will expand prior and ongoing work to a novel class of nanostructured devices, the nonpolar nitride infrared devices, devices that hold promise for new functionalities in the underdeveloped spectral regions of the infrared. By improving fundamental understanding of the physics and material science of nitride materials, this work will enable ultra-fast and versatile infrared light emitting and detecting devices that will ultimately enhance the performance and wide-acceptance of commercial infrared systems for spectroscopy, telecommunications, sensors, etc.

Oana Malis, 2013 Purdue CAREER Awardee
Assistant Professor of Physics

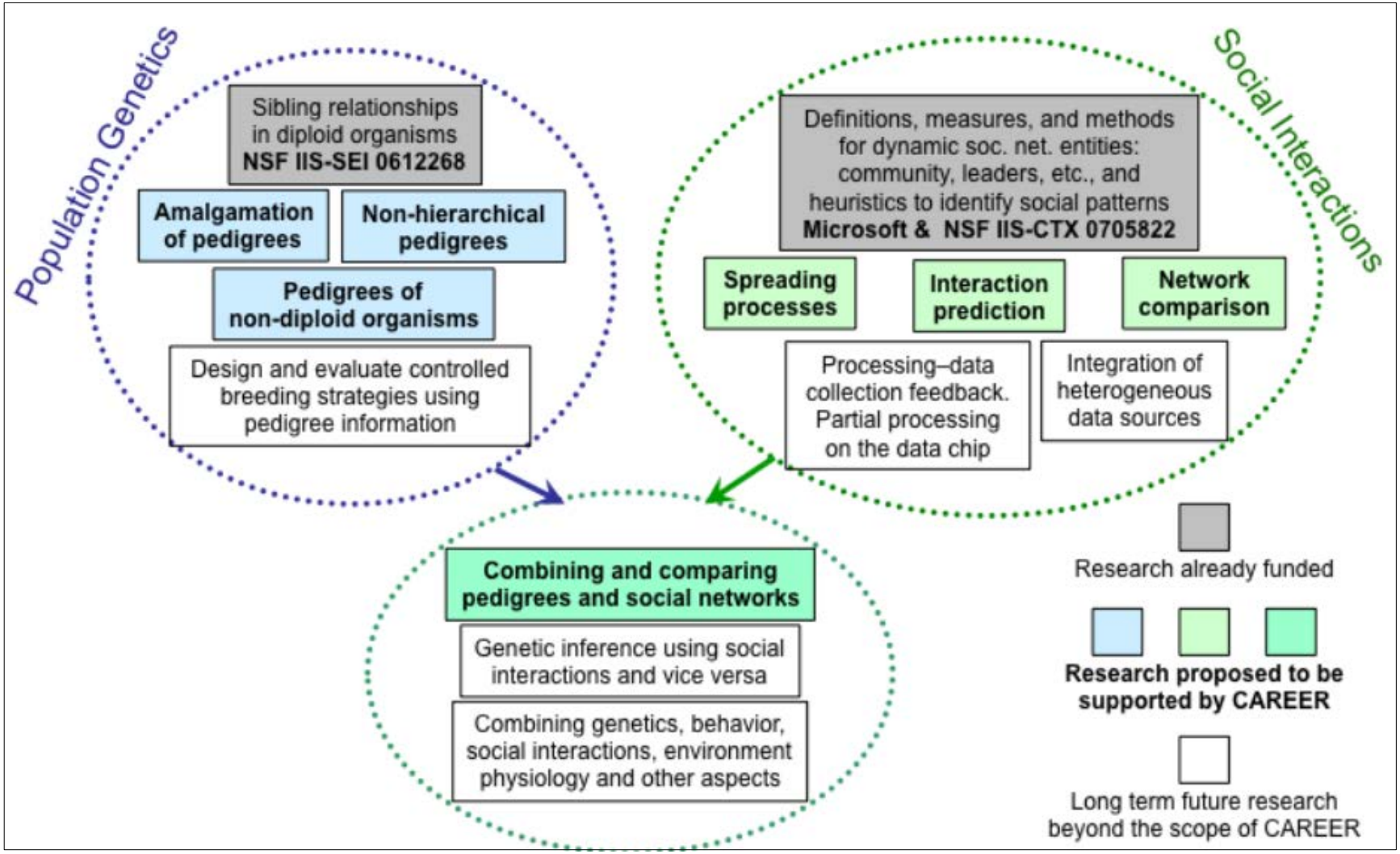
Vision and Impact

The goal of my interdisciplinary research is to develop a robust and scalable computational framework for the emerging field of computational population biology. Ultimately, this research will enable biologists in their scientific inquiry to take advantage of new data by focusing on its underlying qualitative (rather than numerical) and explicitly dynamic structure.

Tanya Berger-Wolf CAREER (Univ of Illinois, Chicago)

Long-Term Pathway

Be specific about what has been done, will be done, and will be done in future



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Institutional Fit

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PURDUE NEUROSCIENCE

Transformative Research

Why is this work essential?

- Needs to be solved now?

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- What industries/communities will be positively impacted by your work?

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Cannot be incremental

Integrating Education and Research

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Integration is critical…cannot be an afterthought. Innovative but doable.

- What are you passionate about?

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- What are you passionate about?
- Where do you have a track record to build on?

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- Both “vanilla” and creative initiatives
- Sustainable

Integrating Education and Research

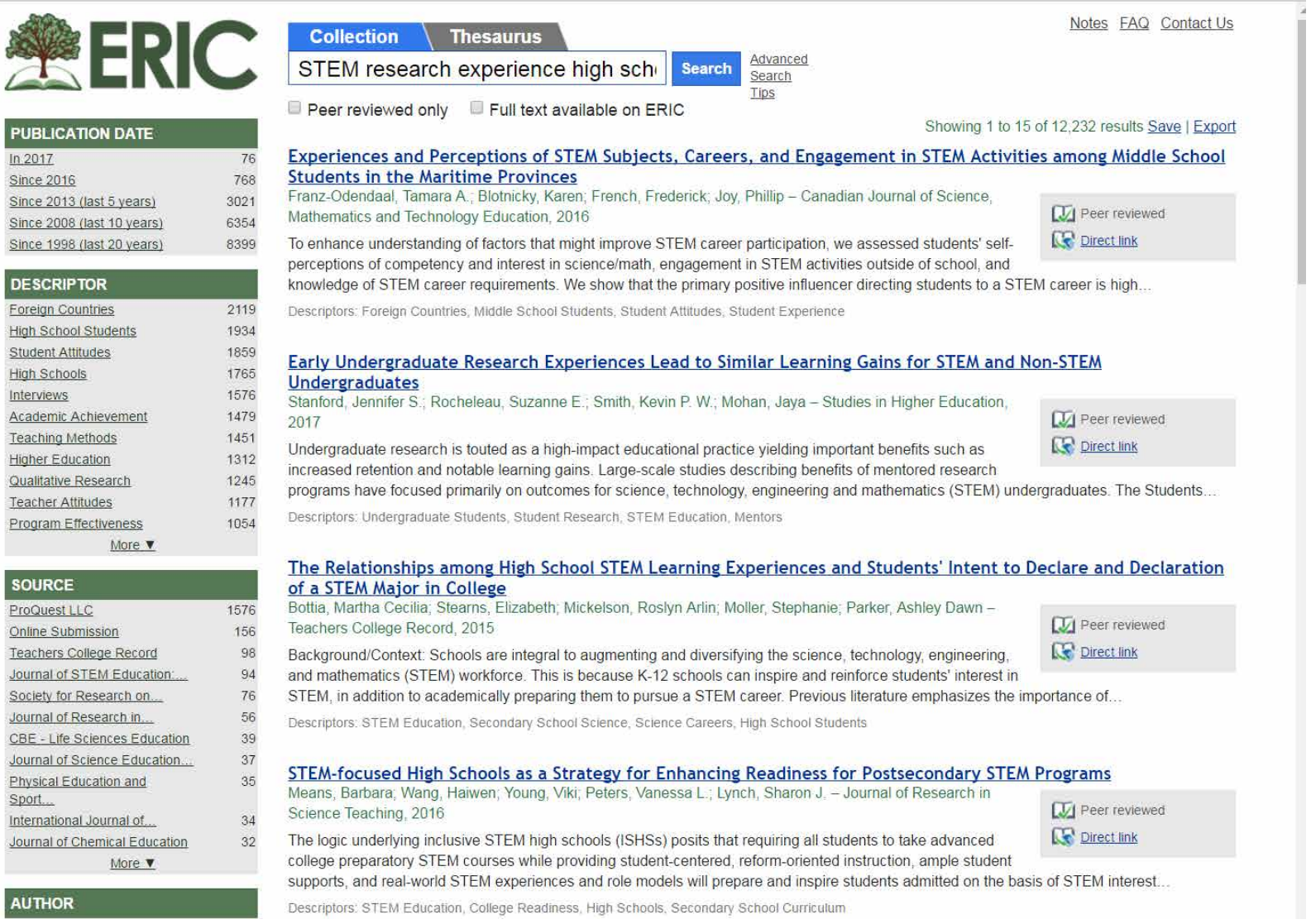
Integration is critical…cannot be an afterthought. Innovative but doable.

- What are you passionate about?
- Where do you have a track record to build on?
- Do not reinvent the wheel!
- Both “vanilla” and creative initiatives
- Sustainable
- Based on best practices

“Such activities should be consistent with research and best practices in curriculum, pedagogy, and evaluation.”

Evidence-based Education

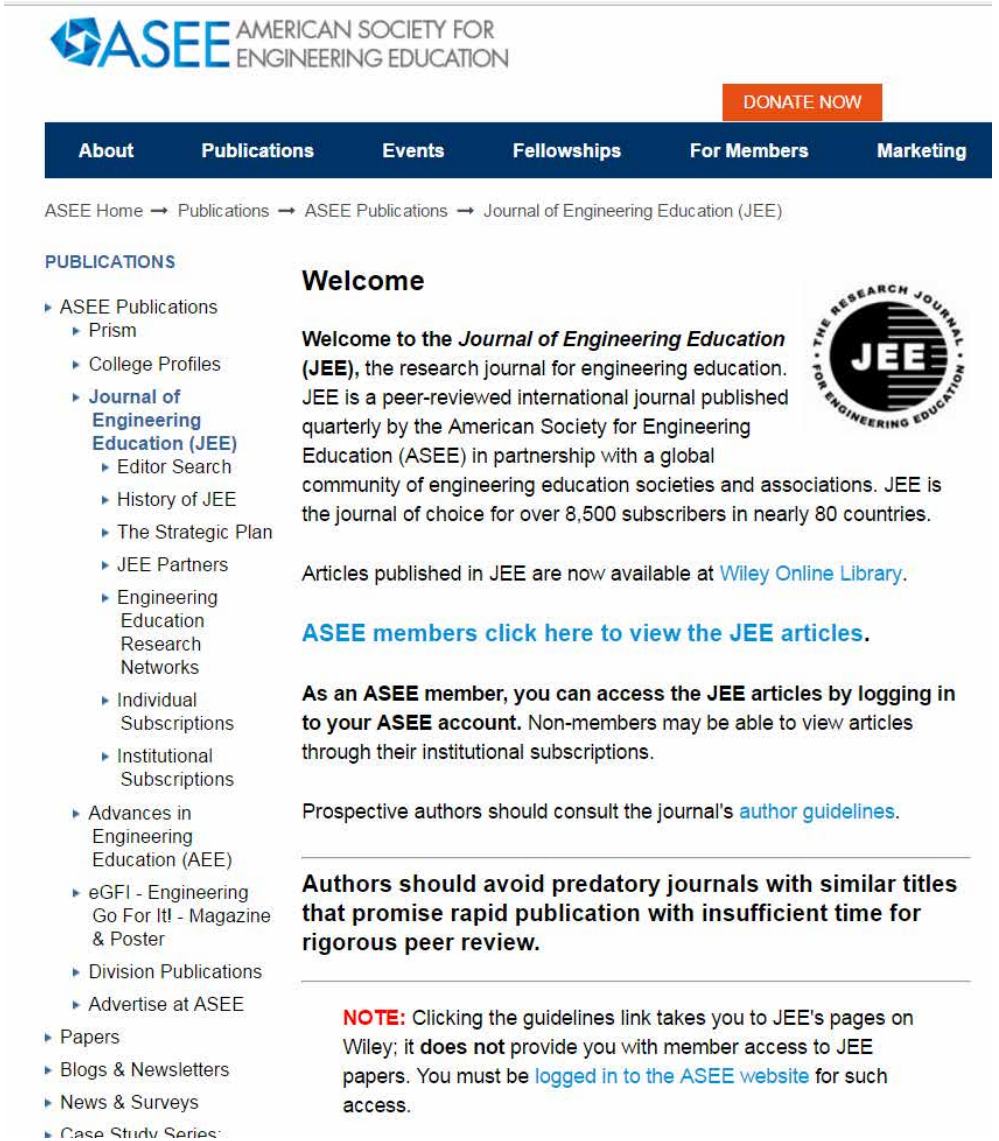
ERIC (Education Resource Information Center) https://eric.ed.gov



Evidence-based Education

ASEE Journal of Engineering Education

https://asee.org/papers-and-publications/publications/jee



Think Beyond Business as Usual

- Cross-listed course
- Innovative undergraduate instruction
- Involve K-12 teachers and students
- Outreach through summer camps
- Partnerships with museums and informal science learning organizations Citizen science and building public STEM literacy
- Service learning
- Entrepreneurship (include I-Corps!)

Consider Diversity for Broader Impact

- How will you attract and mentor diverse students?

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- Don’t quantify

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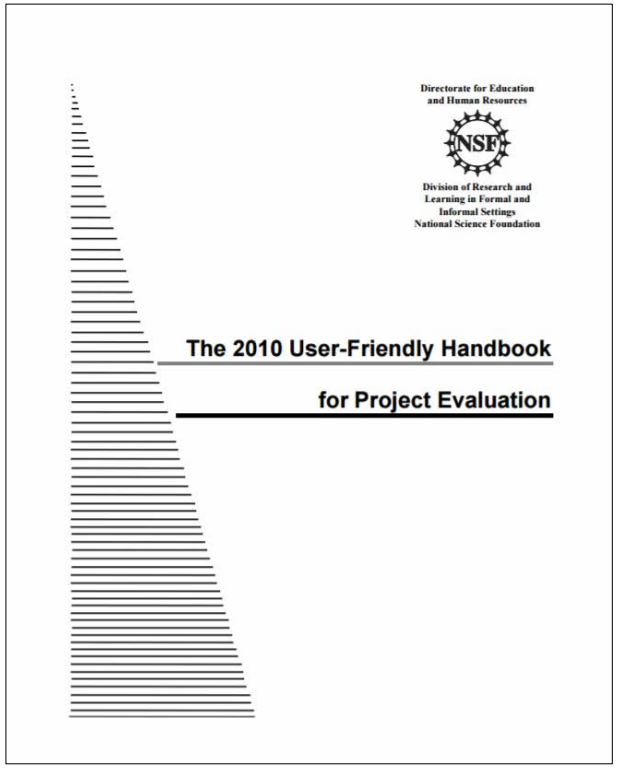
- Underserved rural areas, disabled, gender diversity, veterans
- Don’t quantify
- Can involve teachers recruited from schools with particular demographics

Integrating Education and Research

You MUST assess educational initiatives

W.K. Kellogg Foundation
Logic Model Development Guide



Integrating Education and Research

Logic model helpful to develop even if not included in proposal

For Whom	Assumptions (Theory of Change) *Moving from...*	Inputs	Strategies/Activities *through...*	Outputs	Outcomes *through...*	Impact

Integrating Education and Research

Consider an integrated advisory board. Need commitment letters.

XI. PROJECT ADVISORY BOARD

Members of my CAREER Advisory Board, listed below, are experts in engineering, cognitive psychology, and innovation education. The assessment review panel will formally meet five times during the project. I will also have on-one-one meetings with my advisors when necessary throughout the project. I have already had detailed meetings with each one of them as I prepared this proposal.

Mary Besterfield-Sacre *(Associate Professor and Fulton C. Noss Faculty Fellow, Swanson School of Engineering, Industrial Engineering, University of Pittsburgh)*: Dr. Besterfield-Sacre's research expertise includes engineering education evaluation methodologies and quality improvement in manufacturing and service organizations. She is a renowned expert in assessment and evaluation in engineering education and for her research on innovation, which has been funded by the NSF and NCIIA.

Nathalie Duval-Couetil (*Director, Certificate in Entrepreneurship and Innovation Program, Associate Director, Burton Morgan Center for Entrepreneurship*): Dr. Duval-Couetil has launched and currently leads Purdue' university-wide multidisciplinary undergraduate entrepreneurship program. This program has involved over 2,000 students from all majors since 2005. She also leads initiatives on leadership education for women. Dr. Duval-Couetil also has experience in market research and business strategy consulting in Europe and the United States. She will contribute to this project in significant ways through her diverse expertise and by helping recruit student participants.

Vincent Duffy (Associate Professor, Industrial Engineering and Agricultural and Biological Engineering,

Senay Purzer, 2012 Purdue CAREER Awardee
Assistant Professor of Engineering Education

Integrating Education and Research

Letters of collaboration for educational partners?

Must follow the single-sentence format:

"If the proposal submitted by Dr. [insert the full name of the Principal Investigator] entitled [insert the proposal title] is selected for funding by the NSF, it is my intent to collaborate and/or commit resources as detailed in the Project Description or the Facilities, Equipment or Other Resources section of the proposal."

Integrating Education and Research

Use a unified schedule

	Semester	Research Plan	Educational Plan
Year 1	Spring'12	• Detailed planning of the data collection and data analysis • Train graduate and undergraduate students in data collection & analysis. • Pilot data collection in the ELO lab (complete 10 interviews & verbal protocols)	
	Summer' 12	• Analyze pilot data • Refine and finalize coding protocols • Refine procedures for data preparation for analysis: editing, chunking, etc.	• Develop assessment tools, such as rubrics, for classroom use.
	Fall'13	• Contact engineering faculty to recruit additional participants • Recruit student participants • Start data collection	• Develop short course activities on innovation.
Year 2	Spring'13	• Continue data collection (complete 75 interviews & verbal protocols with senior engineering students) • Data preparation, editing, and coding.	• Develop an innovation-focused teacher professional development module for PBS Teacher Line
	Summer'13	• Data analysis (coding) • Develop case studies • Present findings at ASEE	• K-12 teacher professional development as part of SLED and INSPIRE
	Fall'13	• Present findings at FIE • Data analysis (frequency calculations)	• Present findings at the industry advisory board
Year 3	Spring'14	• Continue data collection (complete 75 interviews & verbal protocols with senior engineering students) • Submit conference proposals on preliminary findings • Present findings at NCIIA	• NCIIA faculty workshop • Analyze pilot first-year engineering survey data
	Summer'14	• Data analysis (case studies) • Submit a journal manuscript to JEE	• Develop a graduate course on innovation and research methods

Senay Purzer, 2012 Purdue CAREER Awardee
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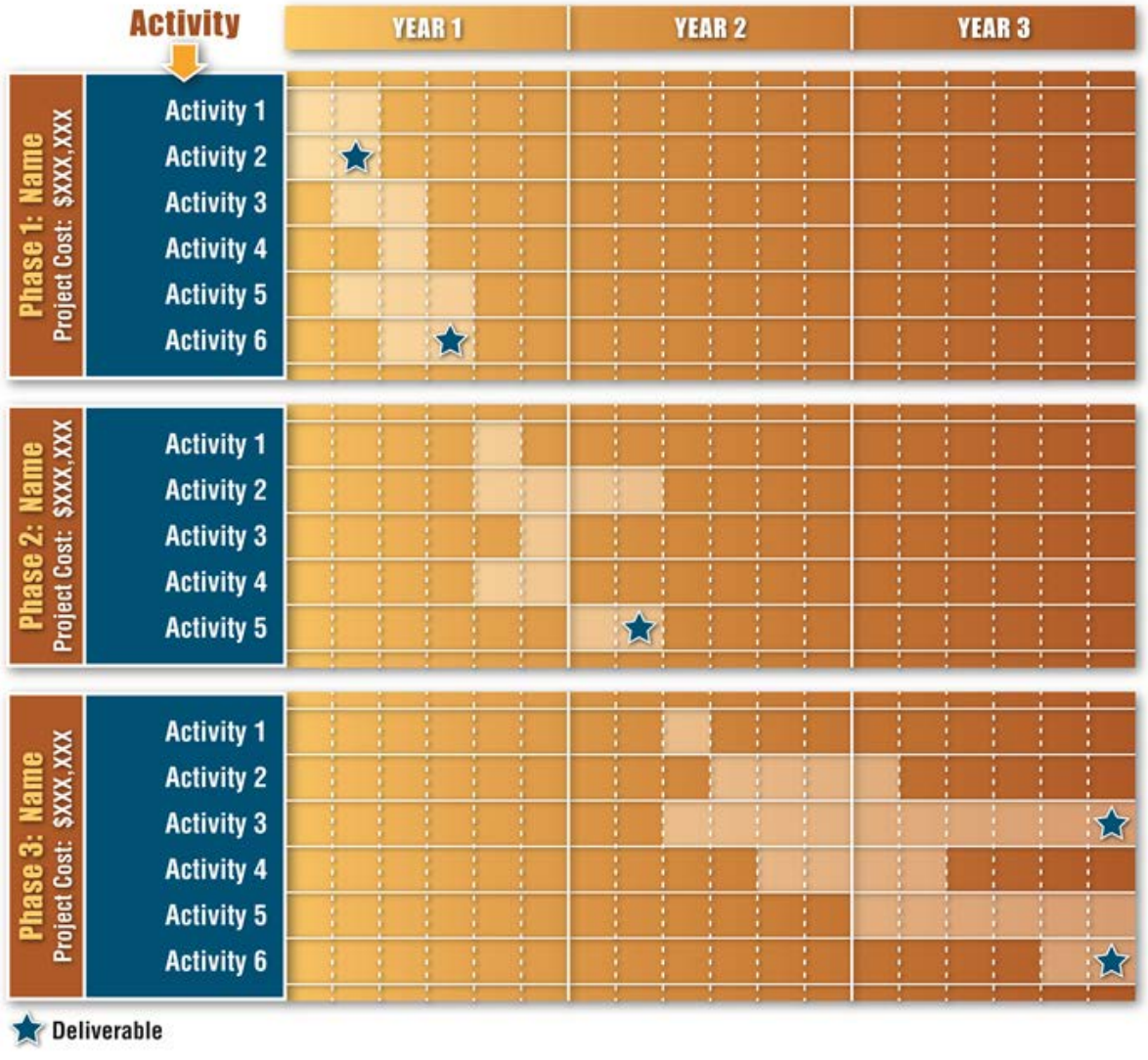
Integrating Education and Research

If interested, contact sbond@purdue.edu for help with timeline graphic



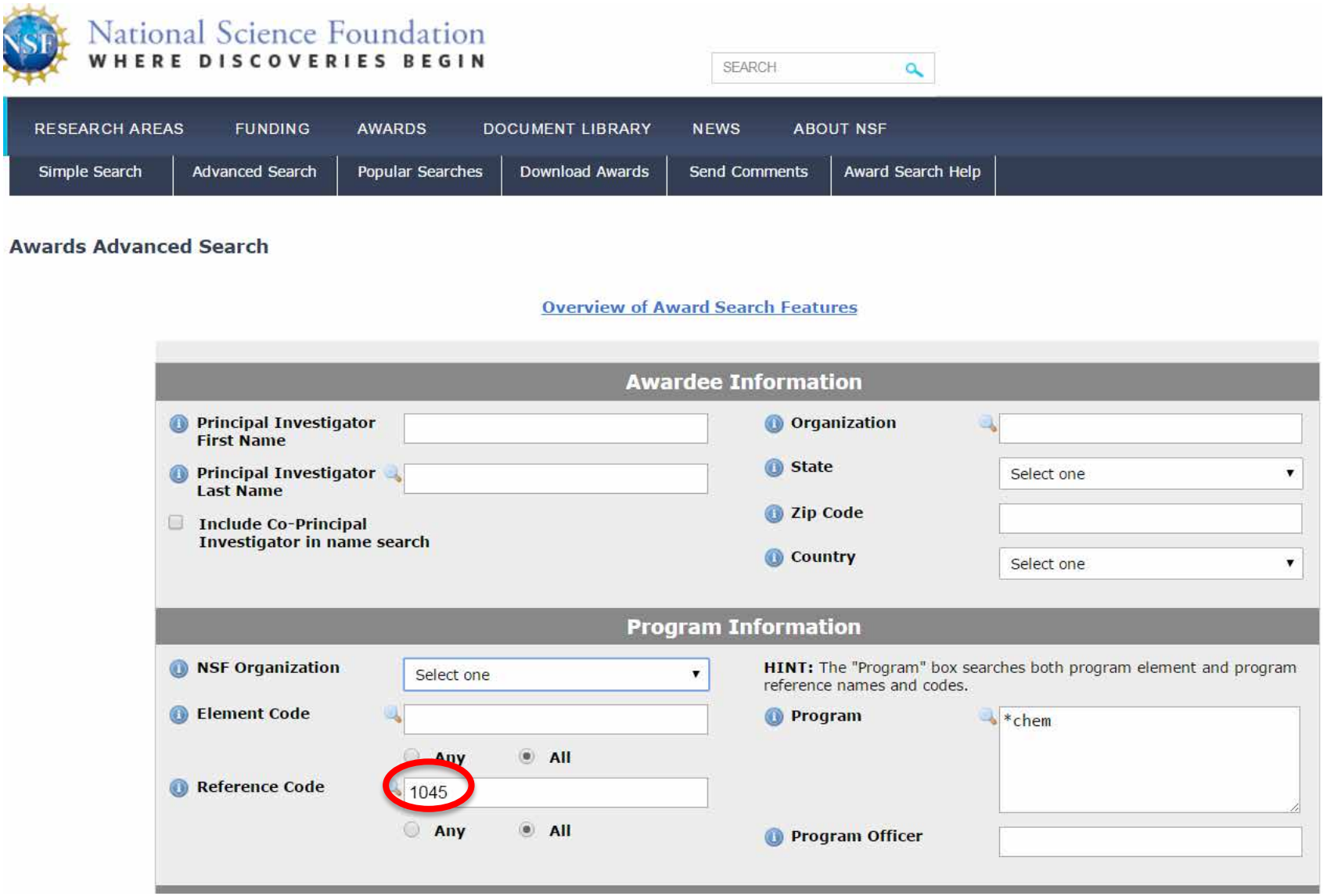
Plan of Action

Proposal Preparation Timeline

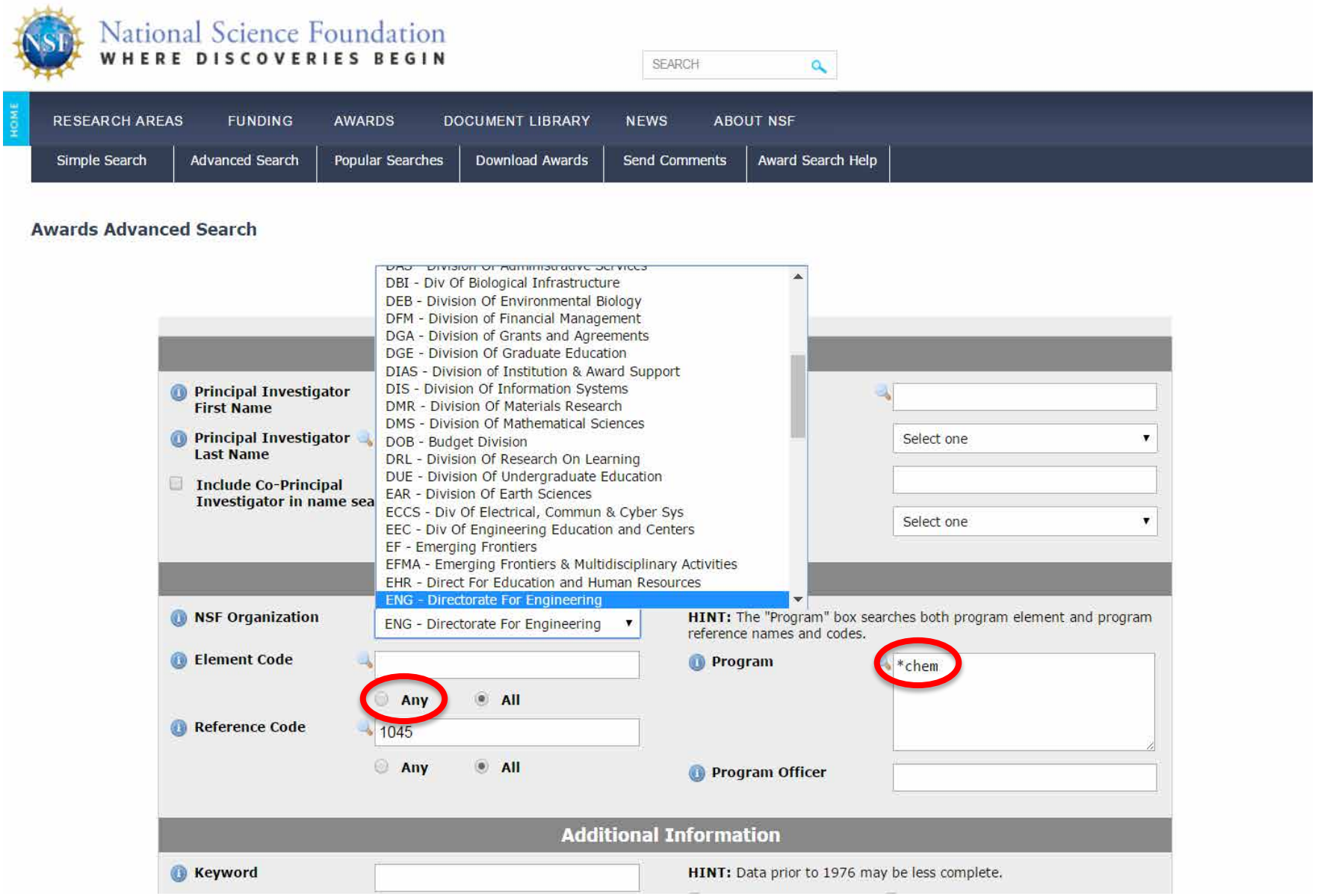
CAREER 2018 Proposal Preparation Timeline * Red denotes must do this before writing any proposal text

	Mon 4/23	Mon 4/30	Mon 5/7	Mon 5/14	Mon 5/21	Mon 5/28	Mon 6/4	Mon 6/11	Mon 6/18	Mon 6/25	Mon 7/2	Mon 7/9	Fri 7/13	Mon 716	Thu 7/18
Analysis and Planning															
Read abstracts of funded CAREERS for directorate/division fit															
Notify Pre-Award Center for assigned specialist															
Storyline Development • What is the problem? • What has been done already to address this problem? • What is the gap that still remains? • How do you propose to address this gap?															
Map out long-term pathway and vision															
Research and education goals															
Identify win themes/discriminators															
Program Officer Input															
Draft one-pager for PO															
One-pager reviewed internally															
Identify appropriate program / PO															
If you have international component, contact relevant country program officer to discuss															
Email one-pager to PO/ request appt															
Revise storyline based on PO feedback															
Proposed Outline															
Develop detailed outline															
Identify graphics needed															
Partnerships															
Recruit any collaborators, if needed															
Recruit advisory board members, if needed															
Identify assessment partner, if needed															
Collect any letters of collaboration (required TEMPLATE)															
Request department head about letter															
Proposal Writing and Editing															
Develop NSF bio to reflect research & education															
Use outline to write sections															
Edit															
Internal review of near final draft															
Revise based on review															
Write data management plan															

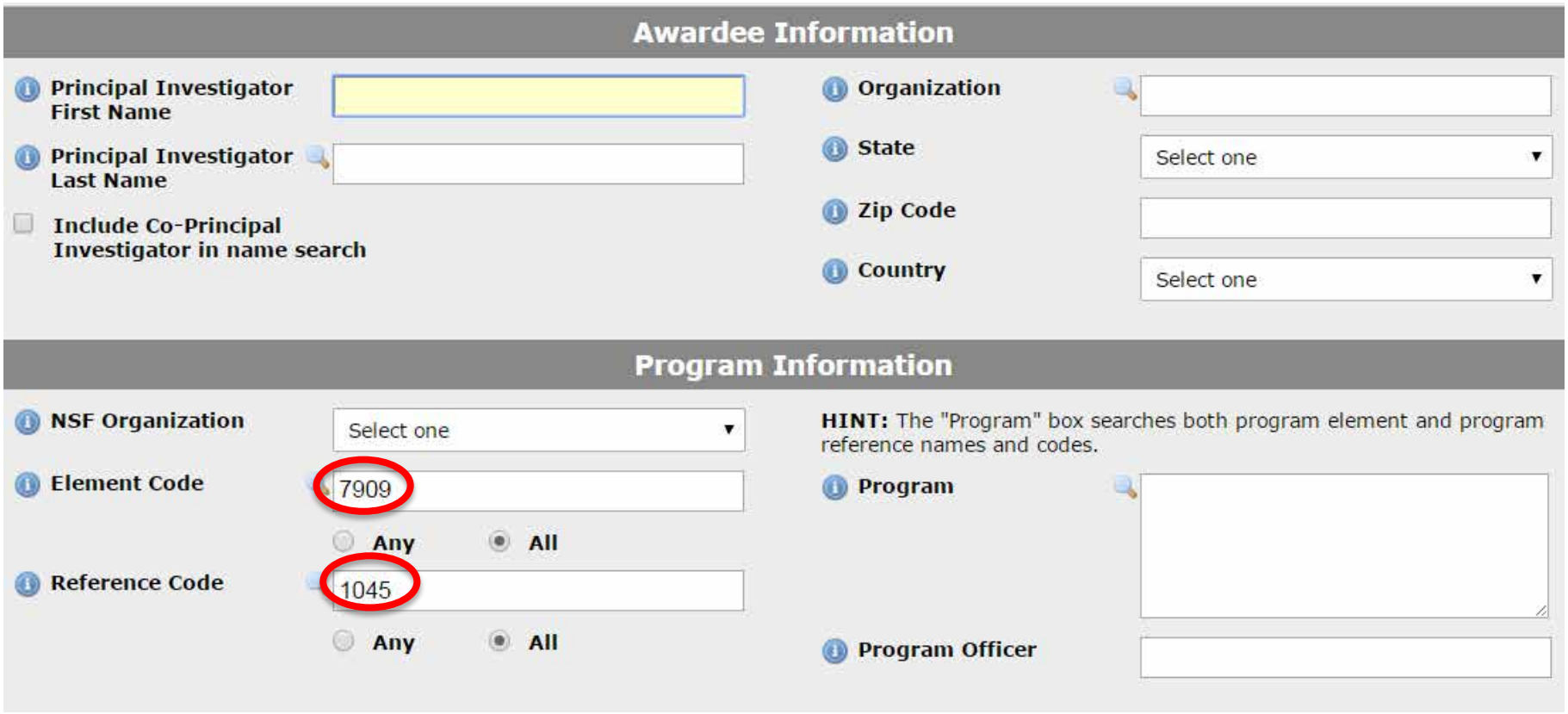
Search Awards by CAREER Code 1045



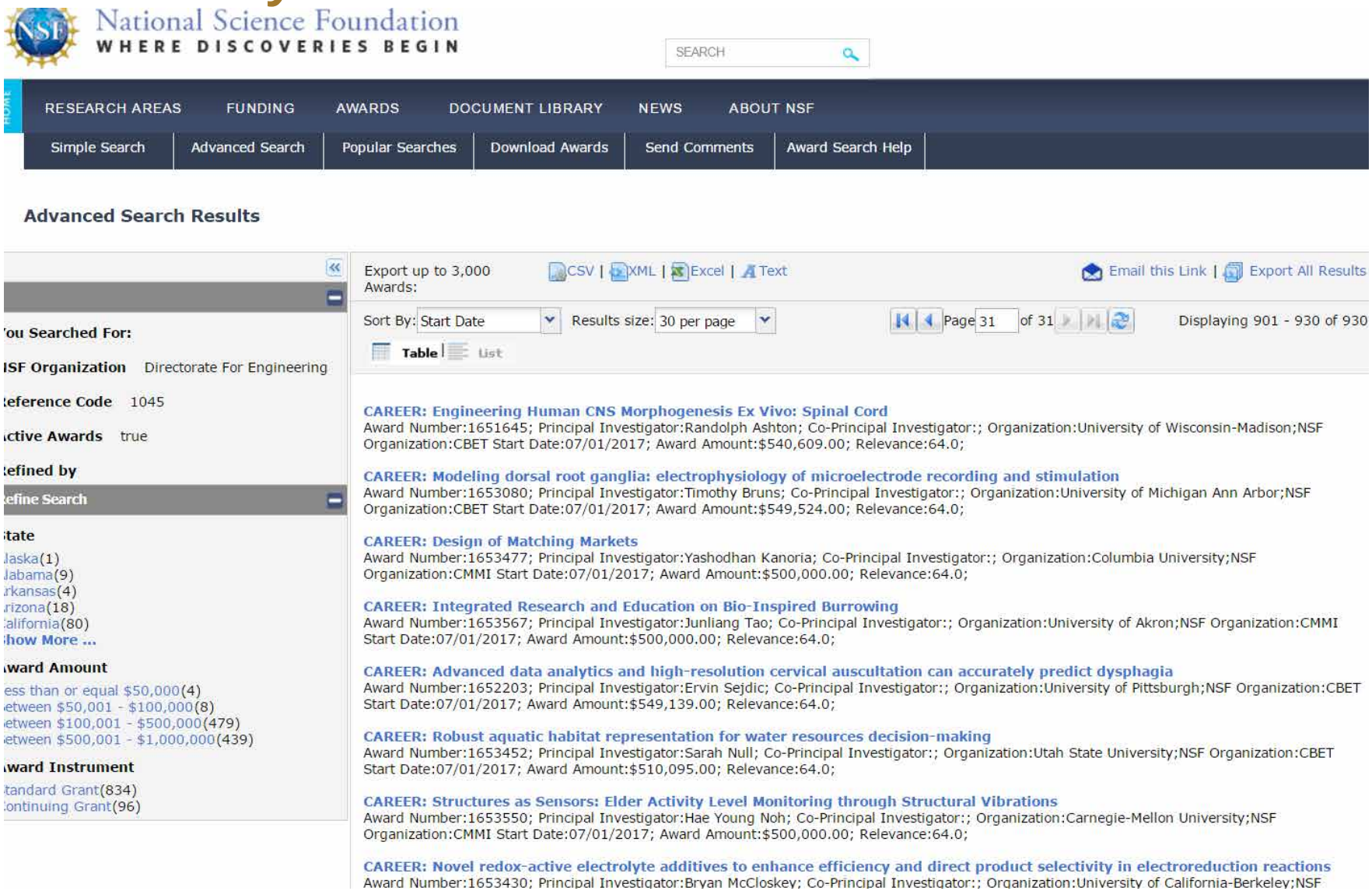
Choose Directorate



Or Search by CAREER and Programs



Sorted by Start Date



Abstracts +

Award Abstract #1651645

CAREER: Engineering Human CNS Morphogenesis Ex Vivo: Spinal Cord

NSF Org:	CBET Div Of Chem, Bioeng, Env, & Transp Sys
Initial Amendment Date:	February 23, 2017
Latest Amendment Date:	February 23, 2017
Award Number:	1651645
Award Instrument:	Standard Grant
Program Manager:	Michele Grimm CBET Div Of Chem, Bioeng, Env, & Transp Sys ENG Directorate For Engineering
Start Date:	July 1, 2017
End Date:	June 30, 2022 (Estimated)
Awarded Amount to Date:	$540,609.00
Investigator(s):	Randolph Ashton rashton2@wisc.edu (Principal Investigator)
Sponsor:	University of Wisconsin-Madison 21 North Park Street MADISON, WI 53715-1218 (608)262-3822
NSF Program(s):	BIOMEDICAL ENGINEERING
Program Reference Code(s):	1045, 8091, 9102

Abstract+

PI: Ashton, Randolph S.

Proposal #: 1651645

The recently observed ability of combinations of human pluripotent stem cells (hPSCs) to spontaneously transform in vitro into "cerebral organoids" containing diverse brain tissues suggests the possibility that organoids can be engineered ex vivo to generate brain and spinal cord tissues with structure, composition and function (including neural circuits) that can mimic many features of the human Central Nervous System (CNS). The availability of controlled ex vivo CNS models can lead to platforms for 1) investigating human developmental biology and physiology, 2) investigating degenerative diseases and traumatic injury, 3) enhanced drug screening and personalized medicine and 4) eliminating the need for questionably relevant animal studies. The goal of this project is to develop methods for engineering human cord organoids displaying spinal cord grey matter architecture and CNS-like neuronal circuitry. Success could lead to a paradigm shift relative in spinal cord injury research and drug screening. The proposed methods can be implemented to engineer diverse neural, heart, and gut organoids. The education and outreach plan includes: 1) development of a comprehensive "Stem cell-based Tissue Engineering & Morphogenesis (STEM)
BME courses and middle and high sch
findings, 2) outreach programs design
students, including at elementary and
creation of a live "Building a Human S
and tissue engineering research.

This project will use innovative culture
for reproducibly engineering human s
comparatively simplified tissue morph
objectives with related hypotheses: 1
neural tube (PNT) tissue structure--Th
morphology at developmental length
tested using a novel molding technolo
engineer annular tubes of polarized, h
mimetic of early PNT structure, 2) Eng
(D/V) cytoarchitecture mimetic of spi
exogenous morphogen gradients can
composition and tissue cytoarchitectu
"Stamp-On" microfluidics to generate
whether they can recapitulate D/V pa
cytoarchitecture within cylindrical hNS
organoids with rostrocaudal (R/C) cyt
tissue--The hypothesis that directed a
formation of biomimetic neural will be tested by using organoids generated from cervical, thoracic, and lumbar hNSCs and testing whether their directed assembly yields a composite spinal cord organoid with biomimetic R/C tissue cytoarchitecture and functional neuronal circuitry. The 4th objective is to promote development of a diverse workforce for future hPSC-based tissue engineering industries by integrating a multifaceted approach for inspiring and educating the general public and students, especially underrepresented minorities. Though Human PSC-derived organoids possess tremendous possibilities for modeling human biology and physiology, their utility is limited by a lack of control over their spontaneous morphogenesis processes, which produces random organoid structure and composition. Using a spinal cord organoid exemplar, this project will develop novel tools and methodologies for engineering human organoid morphogenesis at the micro-to-millimeter scale. Instructing reproducible ex vivo morphogenesis at this scale is critical for developing advanced biomanufacturing processes to produce functional, biomimetic tissues and organs. Engineering parameters identified as critical to instructing emergence of biomimetic 3-D spinal organoids could elucidate broadly applicable morphogenesis engineering principles and provide new insights into CNS development and disease. The tools and knowledge generated will significantly advance scientists' ability to engineer biomimetic human tissues, specifically providing the most humanoid experimental platform to date for investigating degenerative spinal cord diseases and traumatic injury. The proposed tools and methods are designed for simplicity, thus can be broadly disseminated and implemented for engineer human organoids. Captivating data and explanations of human organoid morphogenesis will be curated as an online educational resource and introduced to the general public and students to promote political support, interests, and workforce development.

The goal of this project is to develop methods for engineering human cord organoids displaying spinal cord grey matter architecture and CNS-like neuronal circuitry. Success could lead to a paradigm shift relative in spinal cord injury research and drug screening. The proposed methods can be implemented to engineer diverse neural, heart, and gut organoids.

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The education and outreach plan includes: 1) development of a comprehensive "Stem cell-based Tissue Engineering & Morphogenesis (STEM)" website to serve as an educational resource for BME courses and middle and high school teachers and as a site for sharing research findings; 2) outreach programs designed to expose underrepresented minority (URM) students, including at elementary and middle school levels, to STEM experiences; and 3) creation of a live "Building a Human Spinal Cord" exhibit to engage the public in stem cell and tissue engineering research.

Plan of Action

Proposal Preparation Timeline

CAREER 2018 Proposal Preparation Timeline * Red denotes must do this before writing any proposal text

	Mon 4/23	Mon 4/30	Mon 5/7	Mon 5/14	Mon 5/21	Mon 5/28	Mon 6/4	Mon 6/11	Mon 6/18	Mon 6/25	Mon 7/2	Mon 7/9	Fri 7/13	Mon 716	Thu 7/18
Analysis and Planning															
Read abstracts of funded CAREERS for directorate/division fit															
Notify Pre-Award Center for assigned specialist															
Storyline Development • What is the problem? • What has been done already to address this problem? • What is the gap that still remains? • How do you propose to address this gap?															
Map out long-term pathway and vision															
Research and education goals															
Identify win themes/discriminators															
Program Officer Input															
Draft one-pager for PO															
One-pager reviewed internally															
Identify appropriate program / PO															
If you have international component, contact relevant country program officer to discuss															
Email one-pager to PO/ request appt															
Revise storyline based on PO feedback															
Proposed Outline															
Develop detailed outline															
Identify graphics needed															
Partnerships															
Recruit any collaborators, if needed															
Recruit advisory board members, if needed															
Identify assessment partner, if needed															
Collect any letters of collaboration (required TEMPLATE)															
Request department head about letter															
Proposal Writing and Editing															
Develop NSF bio to reflect research & education															
Use outline to write sections															
Edit															
Internal review of near final draft															
Revise based on review															
Write data management plan															

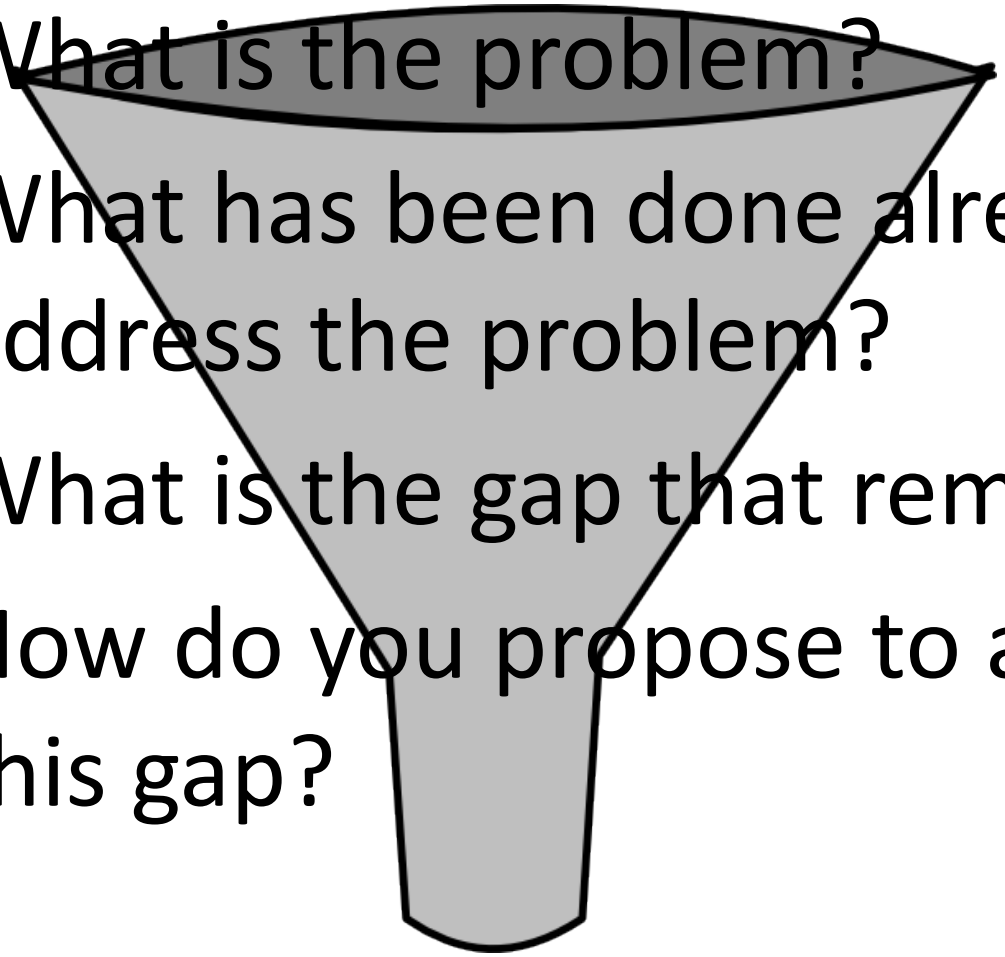
Tell a Compelling Story

Four helpful questions

- What is the problem?
- What has been done already to address the problem?
- What is the gap that remains?
- How do you propose to address this gap?

Tell a Compelling Story

Logic flow goes from broad to narrower



- What is the problem?
- What has been done already to address the problem?
- What is the gap that remains?
- How do you propose to address this gap?

Tell a Compelling Story

Where? Very first part of your introduction.

Despite the crucial link between engineering and innovation, research on engineering innovation education is limited. The challenge, however, is not the volume of studies on this topic but the integration and application of research. Prior studies conducted by cognitive scientists, design researchers, and business scholars highlight some of the individual characteristics important for creativity, characteristics of innovators and entrepreneurs, and the critical role of organizations in supporting innovation. However, very little is known about how engineering students approach innovation and ways to measure these processes and their outcomes. Hence, this study will examine engineering students' cognitions, motivations, and predispositions using interviews and think-aloud protocols. Their processes will then be analyzed to identify possible curricular, gender, and cultural differences among students.

Senay Purzer, Assistant Professor of Engineering Education

Tell a Compelling Story

Sets up the logical flow and significance for your proposal. Hooks reviewer.

In 2013, 61% of raw energy (namely, coal, natural gas, and oil) was wasted as heat because of the low efficiency of power conversion. A thermophotovoltaic (TPV) system desirable for its low maintenance and quiet, portable operation can uniquely capture this waste heat as electricity by using thermal photons (discrete units or quanta of light) whose energies match the bandgap of the photovoltaic (PV) cell. However, TPV systems emit the vast majority of thermal photons at low energies, thus greatly reducing efficiencies. To overcome this barrier, we propose to develop a highly innovative approach to TPV, which we call thermo-photonics (TPX), by redirecting thermal photons into useful energies matching the PV cell. TPX can significantly increase the efficiency of TPV converters up to 50%. What is more, this device may efficiently utilize standard silicon PV technology, thus ensuring a relatively easy transfer to commercial development when the concept is proven.

Peter Bermel, Assistant Professor of Electrical and Computer Engineering, 2014 Purdue CAREER Awardee

Storyline is Basis for PO Discussion

Create a one-page brief

One-page project description includes:

- concise storyline
- career vision/integrative goals
- brief qualifications…why you?
- overview of methodology/approach
- impact and why this is novel

Contacting Your Program Officer

Do not make a 'cold call' to PO

- Find the right program
    - RFP has link for contact list

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

- Contact PO(s) to request conversation
    - include one-page project description

Know Reviewing Mechanism

Ad hoc +/- Panel	Mostly Panel
GEO	ENG
BIO	CISE
SBE	HER
MPS: DHE, DMR	MPS: AST, DMS

Questions to Ask Program Officer

Contact by middle of May at the latest. Get moving on that storyline!

Ask questions such as:

1. Does my research goal fit well with your program?
2. Is this the right scope? Do I need more preliminary data?
3. What is the typical award size?
4. What type of review? Ad Hoc or Panel?
5. What is preference for RET/REUs?

Outline before Writing

Be kind to reviewers. Make your proposal easy to read. Format consistently.

Possible Outline for CAREER Project Description

- Use "I" instead of "we" or "our" because this is about YOUR five-year career path. (However, one-page summary is required to be third person.)
- 15 pages for project narrative
- 1" margin
- Allowed fonts: Arial, Courier new, Palatino Linotype at 10points or larger; Times New Roman at 11point or larger.
- No urls allowed except in the references
- Avoid passive voice whenever possible
- Include quality graphics and figures with clear captions

1. Significance and Rationale (~1 page)

- Compelling storyline that excites your reviewers with the logic flow of:
  - What is the problem?
  - What has been done already to address this problem?
  - What is the gap that still remains?
  - How do you propose to address this gap?
- vision for how this will launch you into novel contributions in your career
  - you must be proposing novel work rather than incremental
- state both research and education goals
- concisely state what will be the impact on the field when you are successful with your proposed CAREER

1.1 Intellectual Merit

- state potential to advance

1.2 Broader Impacts

- Read NSF Grant Proposal Guide for instructions on this required section. How is your research benefiting society? In what ways are you broadening accessibility?
- Refer to Broader Impacts resources on Research Development website at: https://www.purdue.edu/research/vpr/rschdev/proposal_prep_resources.php
- Entrepreneurship activity?

2. Approach

- provide an overview of your overall approach to the research plan before you go into details on your plan
- if you have any collaborators, clearly explain their roles in the appropriate section
- if you will need special equipment or instruments, include text on how you will acquire these resources or gain access to existing ones

2.1 Background

- this is not a literature review for your dissertation. Cite key references strategically particularly in light of "what has been done already to address this problem?"
- can include your relevant preliminary studies within this section or have separate section

Submitting

Proposal prep timeline

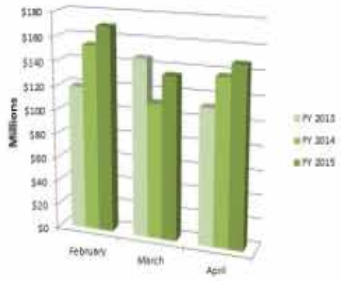
Complete Collaborators and Other Affiliations Spreadsheet															
Write postdoc mentoring plan, if needed															
Write budget justification															
Write facilities document (use epubs)															
Write one-page summary															
Final check of references															
Final budget, justification, and draft narrative due to PreAward															
Submit all documents except narrative															
Submit project narrative															

Submitting

Follow PreAward deadlines at the minimum!

- Regionals
- Pre-Award Menu
- Pre-Award Service Level Agreement

Proposal Submissions



Tweets by @Research_Purdue

Research at Pur…

Liked

Welcome to Pre-Award Services

Calculate Your Processing Timeline (MM/DD/YYYY):

07/19/2018

Enter Sponsor Deadline

Your Processing Timeline	Due to Pre-Award
1. Initial notification/initial budget request	6/27/2018
2. Final budget, justification, and draft proposal/SOW	7/12/2018
3. Final documents for submission (excl. final SOW)	7/17/2018
4. Final SOW/project description/research strategy	7/18/2018

West Lafayette Campus only, for regional campus, please click here

EIN: 35-6002041

DUNS: 072051394

Cage/NCAGE Code: 6D418

Cognizant Federal Agency:

DHHS, Matthew Dito, 214-767-3261

F&A Rate

Mailing Address
155 S Grant Street
West Lafayette, IN 47907-2114

Need More

Follow PreAward Deadlines as Minimum

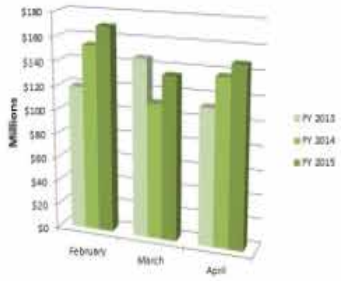
https://www.purdue.edu/business/sps/preaward/

Regionals

Pre-Award Menu

Pre-Award Service Level Agreement

Proposal Submissions



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Need More

Compliance Check

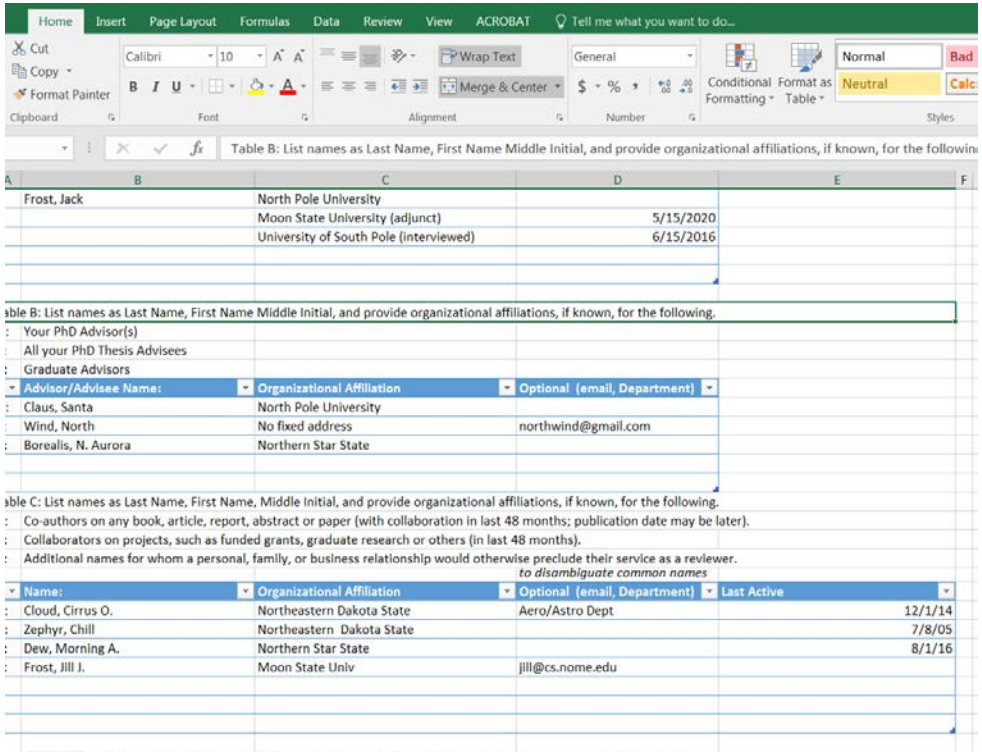
Read NSF Grant Proposal Guide as well as RFP

NSF returns many CAREERs without Review.

Remember…

- Include department chair letter
- Font, margin, page count follows GPG
- Budget in allowable range
- No Co-PIs
- No unauthorized documents, e.g. support letters

New Template for Affiliations



Frost, Jack	North Pole University		
	Moon State University (adjunct)	5/15/2020	
	University of South Pole (interviewed)	6/15/2016	

Table B: List names as Last Name, First Name Middle Initial, and provide organizational affiliations, if known, for the following.

Your PhD Advisor(s)
All your PhD Thesis Advisees
Graduate Advisors

Advisor/Advisee Name:	Organizational Affiliation	Optional (email, Department)
Claus, Santa	North Pole University	
Wind, North	No fixed address	northwind@gmail.com
Borealis, N. Aurora	Northern Star State	

Table C: List names as Last Name, First Name, Middle Initial, and provide organizational affiliations, if known, for the following.

Co-authors on any book, article, report, abstract or paper (with collaboration in last 48 months; publication date may be later).
Collaborators on projects, such as funded grants, graduate research or others (in last 48 months).
Additional names for whom a personal, family, or business relationship would otherwise preclude their service as a reviewer.
to disambiguate common names

Name:	Organizational Affiliation	Optional (email, Department)	Last Active
Cloud, Cirrus O.	Northeastern Dakota State	Aero/Astro Dept	12/1/14
Zephyr, Chill	Northeastern Dakota State		7/8/05
Dew, Morning A.	Northern Star State		8/1/16
Frost, Jill J.	Moon State Univ	jill@cs.nome.edu	

https://www.nsf.gov/bfa/dias/policy/coa.jsp

Effective April 24, 2017, NSF requires the submission of a spreadsheet template to identify collaborators and other affiliations.

Top 10 CAREER Mistakes

10. Difficult to read with small fonts, illegible figures, too many acronyms
9. Unsubstantiated use of “innovative,” “novel,” “transformative”
8. Poor distinction between preliminary results and proposed work
7. Incremental research with narrow focus

NSF Top Ten Mistakes

6. Long sentences and unclear writing
5. Too similar to PhD work
4. Business-as-usual education plan
3. Little impact in broader impacts
2. Treating as a regular proposal instead of long-term trajectory

NSF Top Ten Mistakes

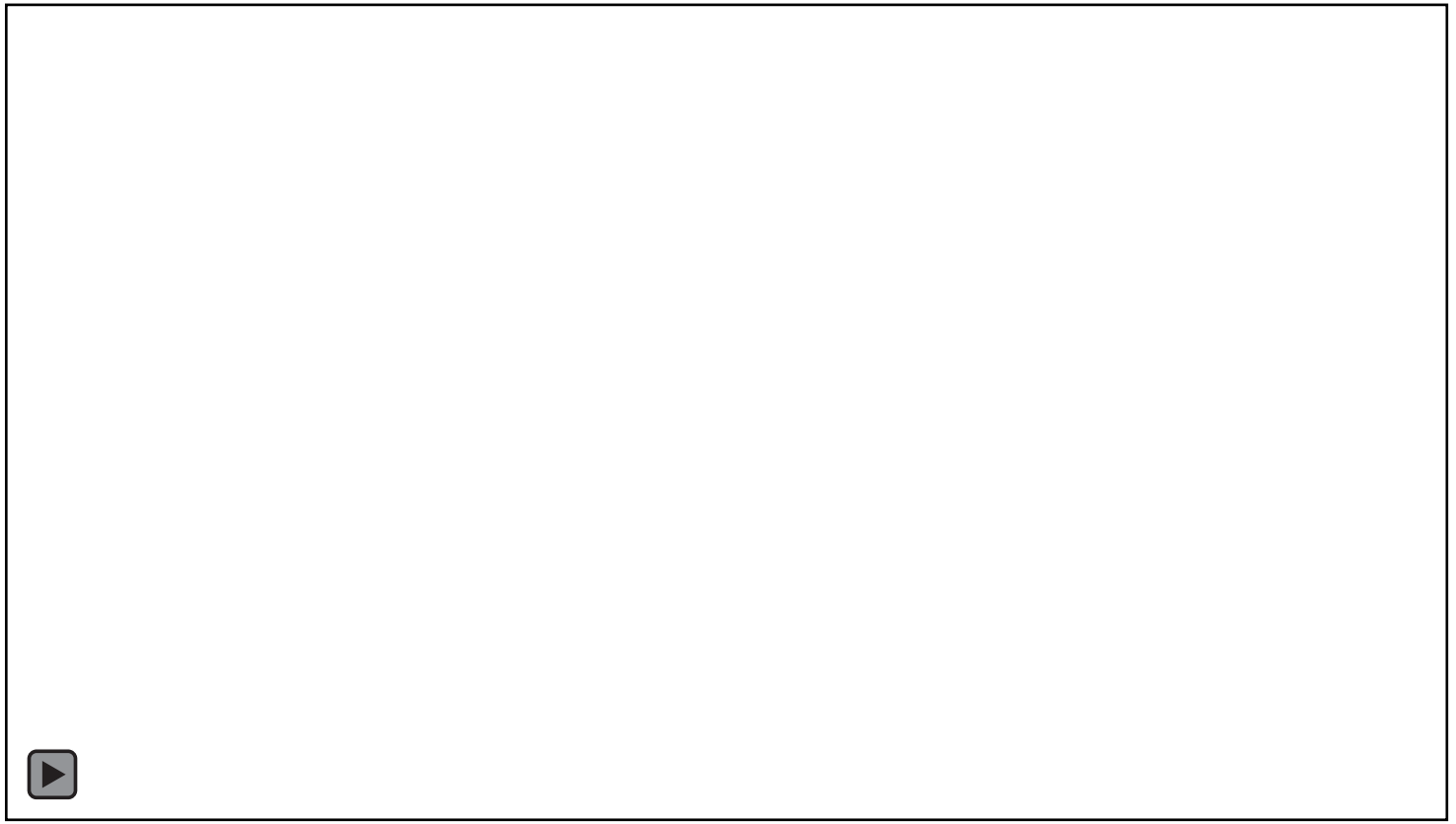
1. Research plan lacking cohesion

- Collection of loosely related ideas
- No gap identified to provide rationalization

Tell a story with your narrative

Internal Review

Because sometimes what is obvious to you is not obvious to others



Key Online Resources

EVPRP e-Pubs for searchable, citable, up-to-date institutional text

http://docs.lib.purdue.edu/ovpr/

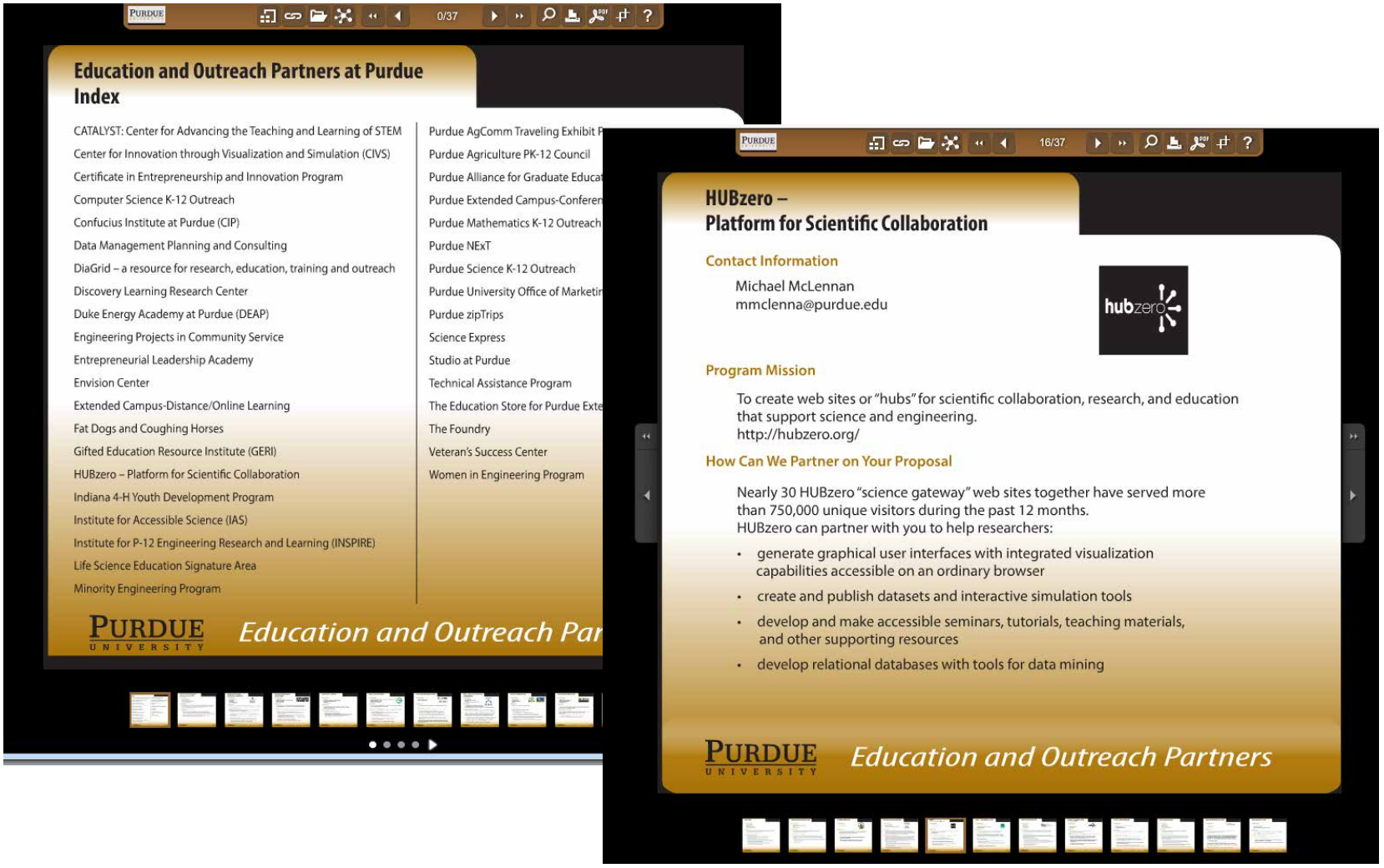
Key Online Resources

EVPRP e-Pubs for searchable, citable, up-to-date institutional text

Key Online Resources

Virtual Rolodex for broader impact partners at Purdue

http://catalog.e-digitaleditions.com/i/256966-256966-edoutreachpart37

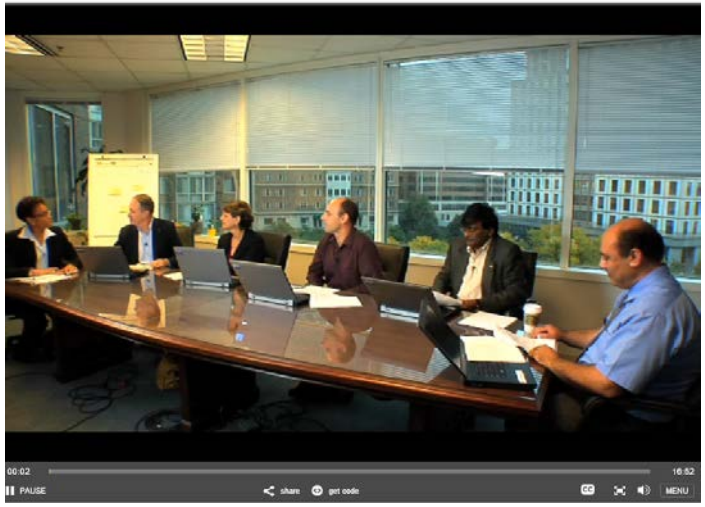


CAREER Resource Websites

NSF Program Officer Contacts by Divisions
http://www.nsf.gov/crssprgm/career/contacts.jsp

CAREER FAQs
https://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf17050

Mock Review Panel for CAREER
http://www.nsf.gov/eng/cbet/multimedia/webinar.jsp



Questions?

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