How to Write a Competitive NSF CAREER Proposal

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Our Team

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Office of Strategic Interdisciplinary Research – Proposal Strategy and Development

Grant Help: Intake Form

Grant Writing Resources:

OVERVIEW

NSF Faculty Early Career Development Program (CAREER)

CAREER Proposals

- 5 years
- ~80k-100K/year
- Single-PI
- Department commitment to PI
- Education Plan and Rationale
- Research Path and Rationale
- Synergy between education and research
- Broader Impacts of research and education

My long-term goal is… The PI's long-term goal

Core Program Proposals

- 3 years
- ~100k/year
- Allows for Co-PIs
- No department endorsement needed
- Research Plan and Rationale
- Broader Impacts only

Our goal is…

NSF Solicitation Link: CAREER 2026
NSF PAPPG: Proposal/Policy Guide

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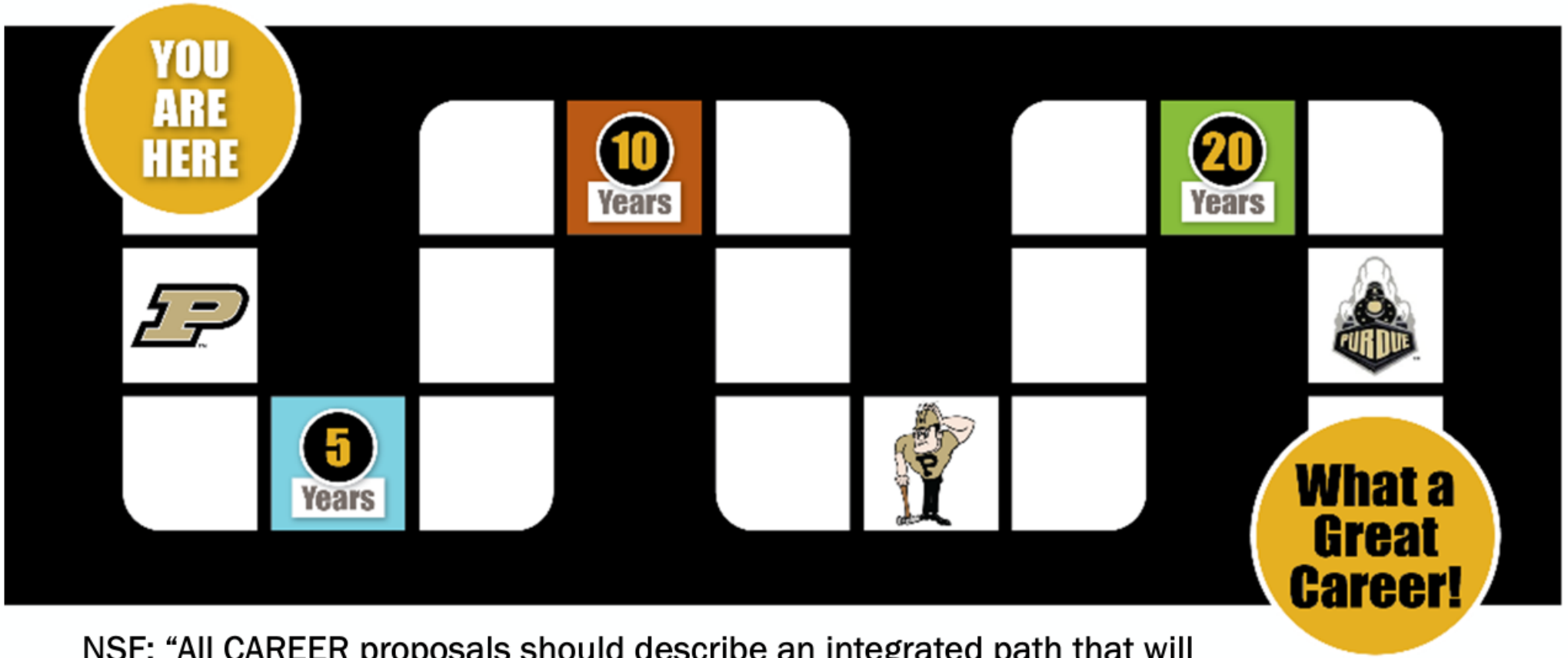
Vision: Career Pathway as Scholar and Educator

Career Path Not Project



NSF: "All CAREER proposals should describe an integrated path that will lead to a successful career as an outstanding researcher and educator."

Vision: Career Pathway as Scholar and Educator

What Makes a Good CAREER Proposal?

- More “path” than project
- Strategic fit with institution
- Clearly transformative research direction
- Creative and well-integrated education plan

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Long-term Career Goal?

The shiny object problem

- Become a recognized thought leader in my field?
- Be internationally known for my research?
- Be a billionaire entrepreneur from my research discoveries and products?
- Publish in top journals?

What problem is this solving?

Image Source: GreekBoston.com

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Long-term Career Goal?

Source: Billion Dollar Code 2021 (English)

"Use software [to] erase borders between countries and nations" – Source: BDC Review: AIN

Image: Art + Com/Source: BDC Review: AIN

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Long-term Career Goal?

Careers are built on solving problems

- Careers emerge from questions
- Impact comes from persistence
- Recognition follows contribution

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Long-term Career Goal?

Before: My long-term career goal is to lead innovative research in renewable energy systems.

Better: My long-term career goal is to transform real-time control of decentralized energy systems while helping engineers understand system-level tradeoffs so renewable integration becomes more stable and scalable.

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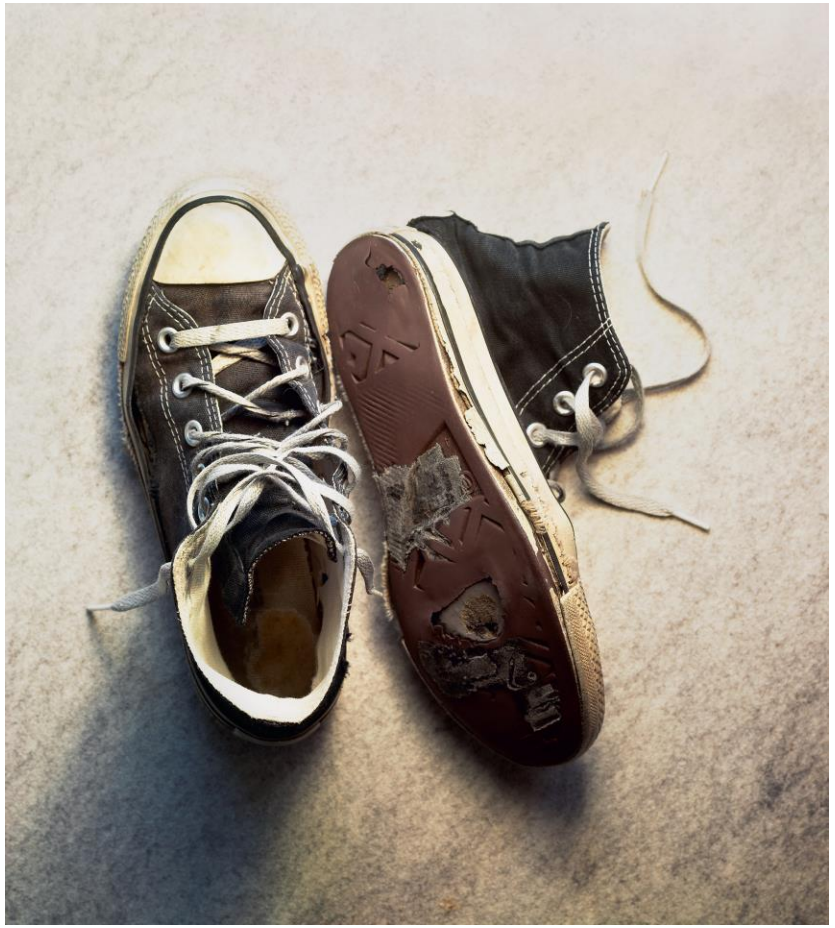
Identifying the Research Gap

A Need is Not the Same as a Problem

I need new shoes!

- **My shoes are worn out** → *functional problem* (they no longer do their job)
- **My feet hurt** → *comfort / physical problem*
- **My style feels dated** → *identity / image problem*
- **Everyone at work dresses sharper than me** → *status / belonging problem*
- **My sister took them and I literally have none** → *resource problem*



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Transformative

Transformative, not incremental

- Needs to be solved now?
- Says who?
- Radical change in understanding
- Facts and figures of cost to country/industry/communities
- Industries/communities positively impacted by your work

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Transformative

Why is this work essential?

"This research will have far-reaching effects, delivering new tools to tailor transformative mobility solutions to citizens' needs, decongest urban networks and expand mobility to… communities."

Amanda Stathopoulos CAREER 2019

Civil and Environmental Engineering

Northwestern University

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Institutional Fit

INSPIRE!™

INSPIRE Research Institute for Pre-College Engineering

Purdue unveils comprehensive AI strategy; trustees approve 'AI working competency' graduation requirement

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Integration: Research & Education Plan Best Practices

What is the education gap area?

Finish this sentence: ***A persistent problem in my field is…***

This matters because:

Learning barrier: **A concept that is hard for my students to understand is….Or current education is constrained by…**

Education Gap

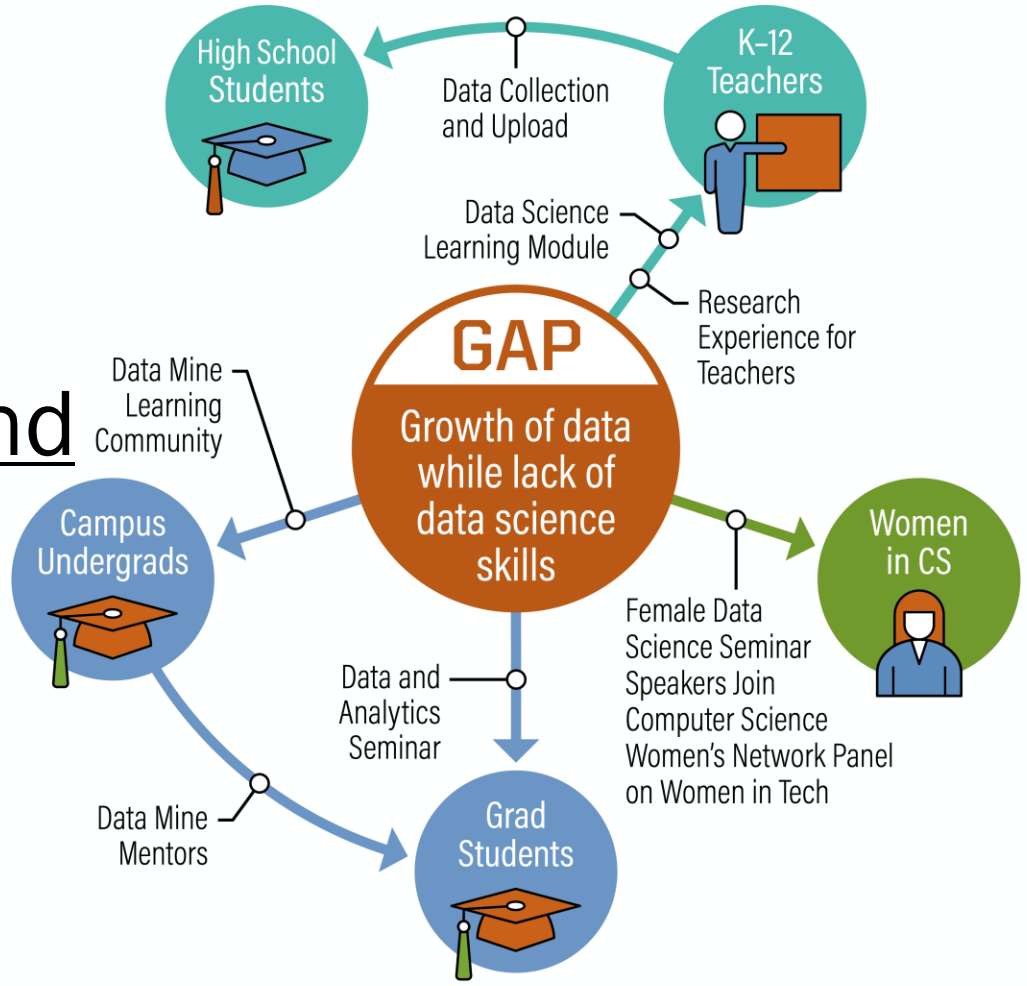
Key is to identify a gap area then build a strategy around addressing it

Gap Area: A key problem in current database education is the reliance on legacy hardware models, which no longer reflect how data systems are built or used today.

Evidence: This gap has been highlighted by the research community in (X conference proceedings, journal article, etc.).

Education Plan

- Targets a documented gap
- Builds on your track record
- Does not “reinvent the wheel”
- Includes both long-standing and creative initiatives
- Will be sustainable
- Uses best practices
- Will be a reasonable workload



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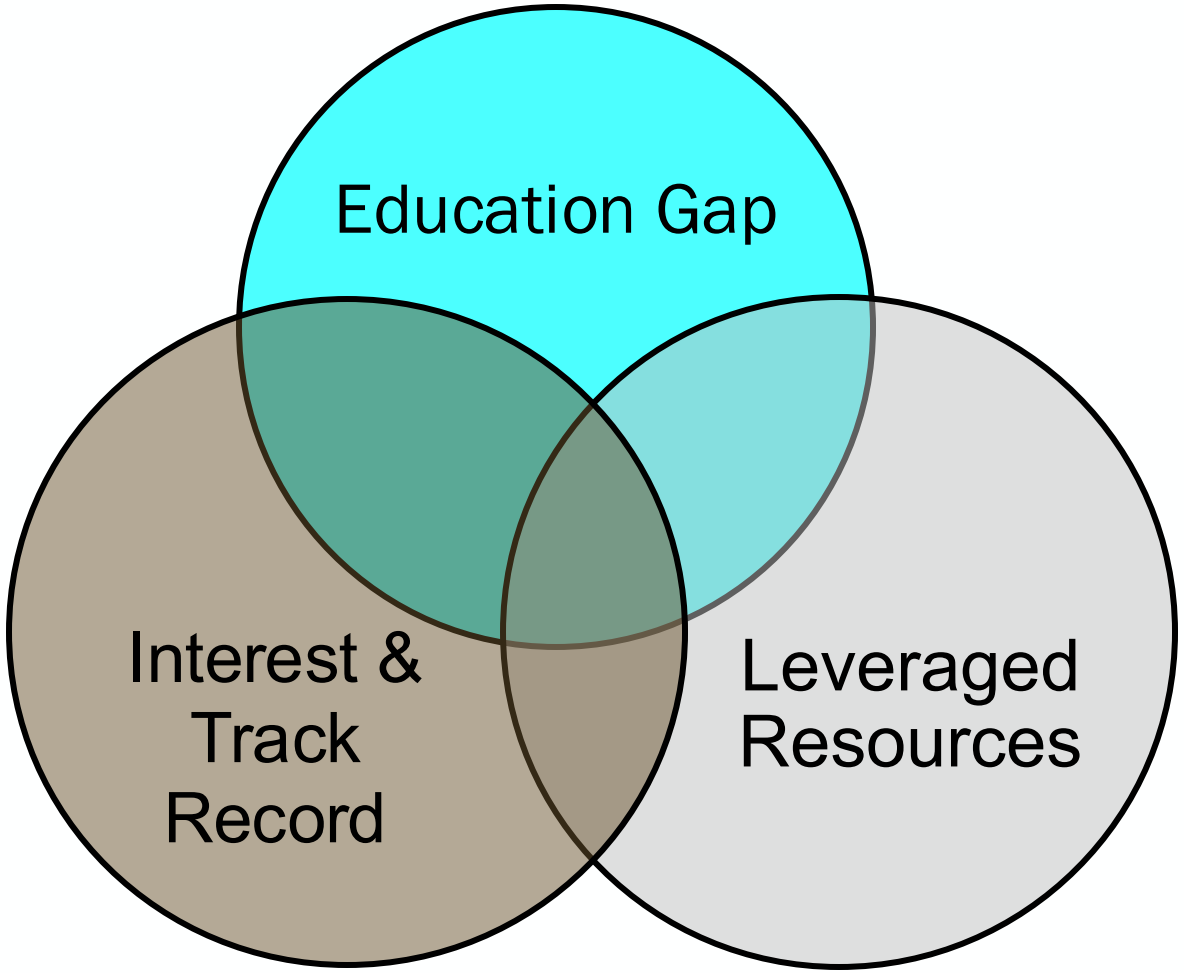
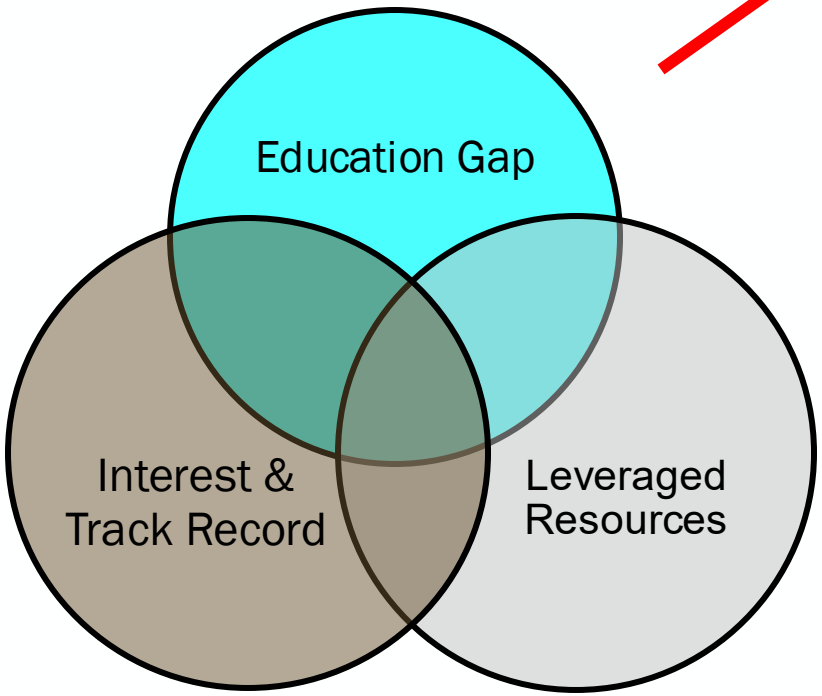
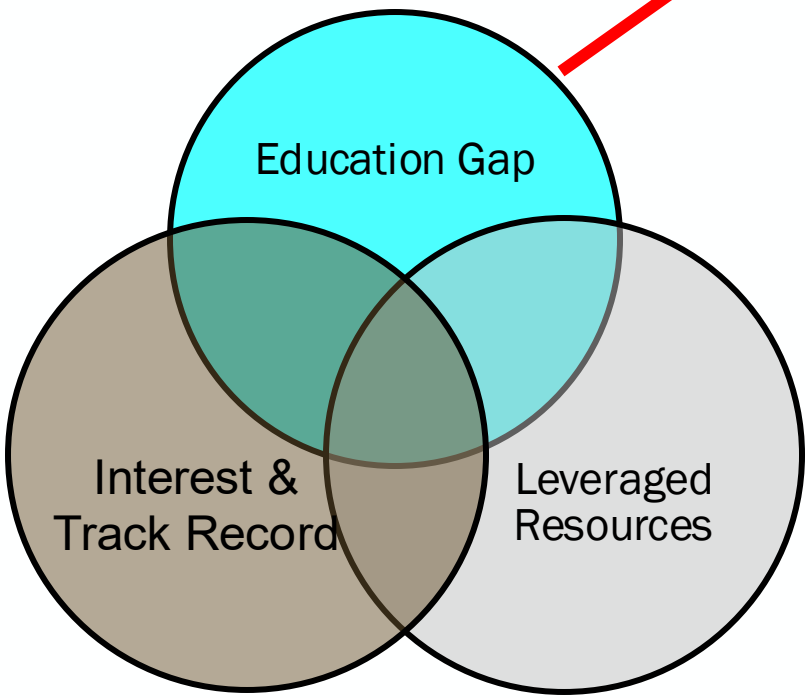
Example: Building an Education Plan around a Gap





Grad students learn “microethics” of responsible research conduct such as publishing norms but lack “macroethics” of ethical and cultural issues surrounding their work’s impacts on society.



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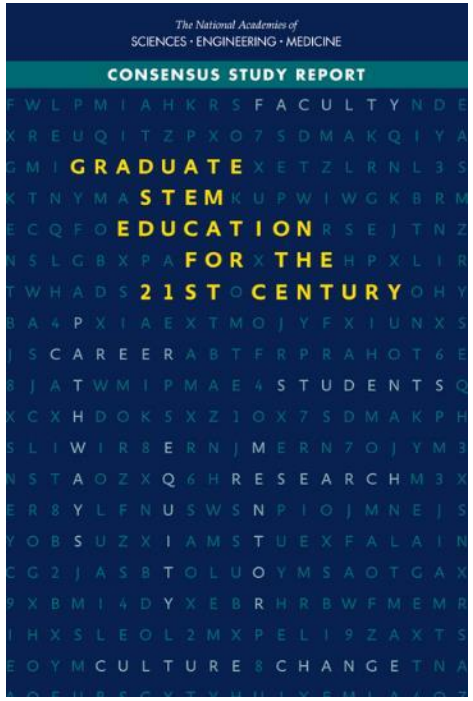
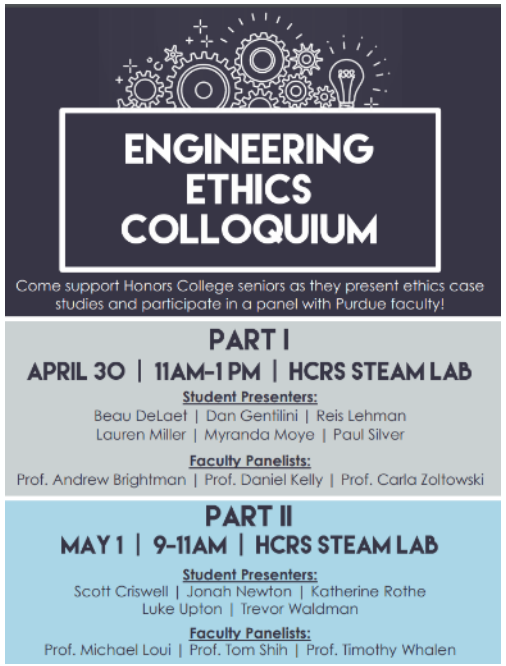
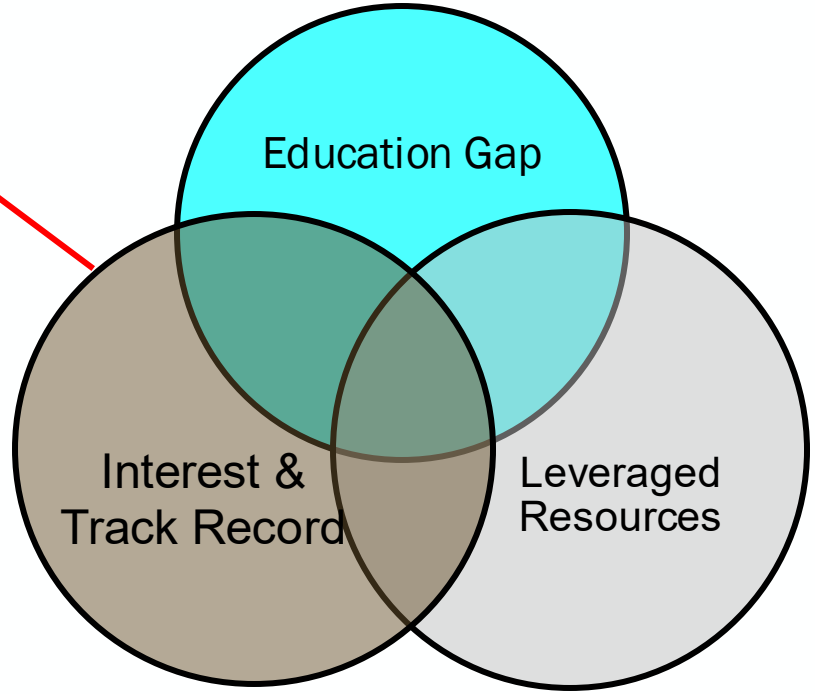


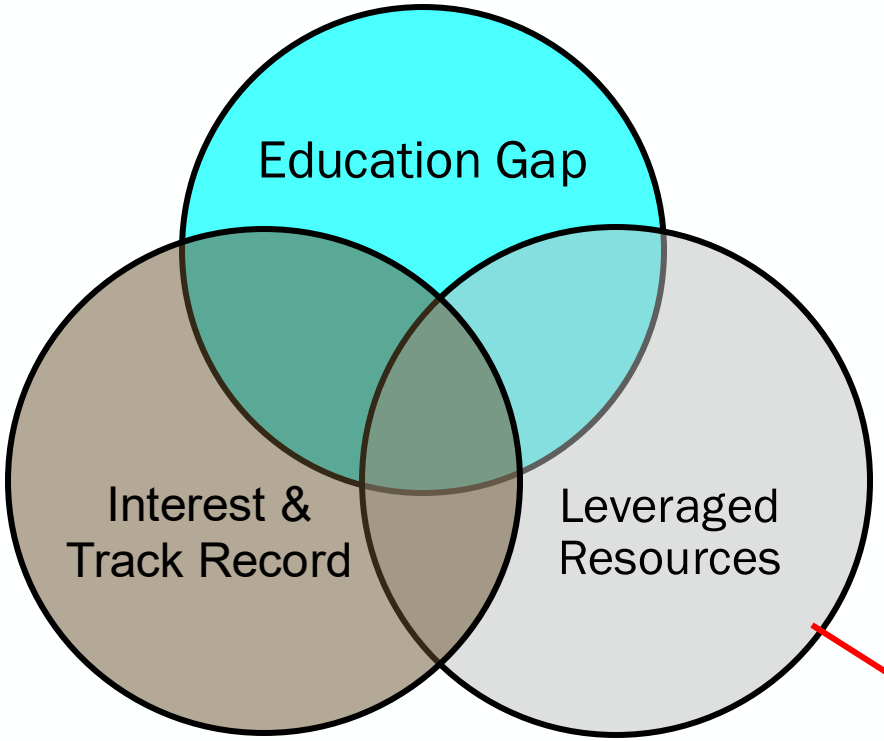
National Academies of Sciences, Engineering, and Medicine 2018. *Graduate STEM Education for the 21st Century*. Washington, DC: The National Academies Press.

Previously collaborated (guest speaker) to incorporate societal implications and economic analysis into my undergrad engineering course.

Served as faculty panelist for Engineering Ethics Colloquium

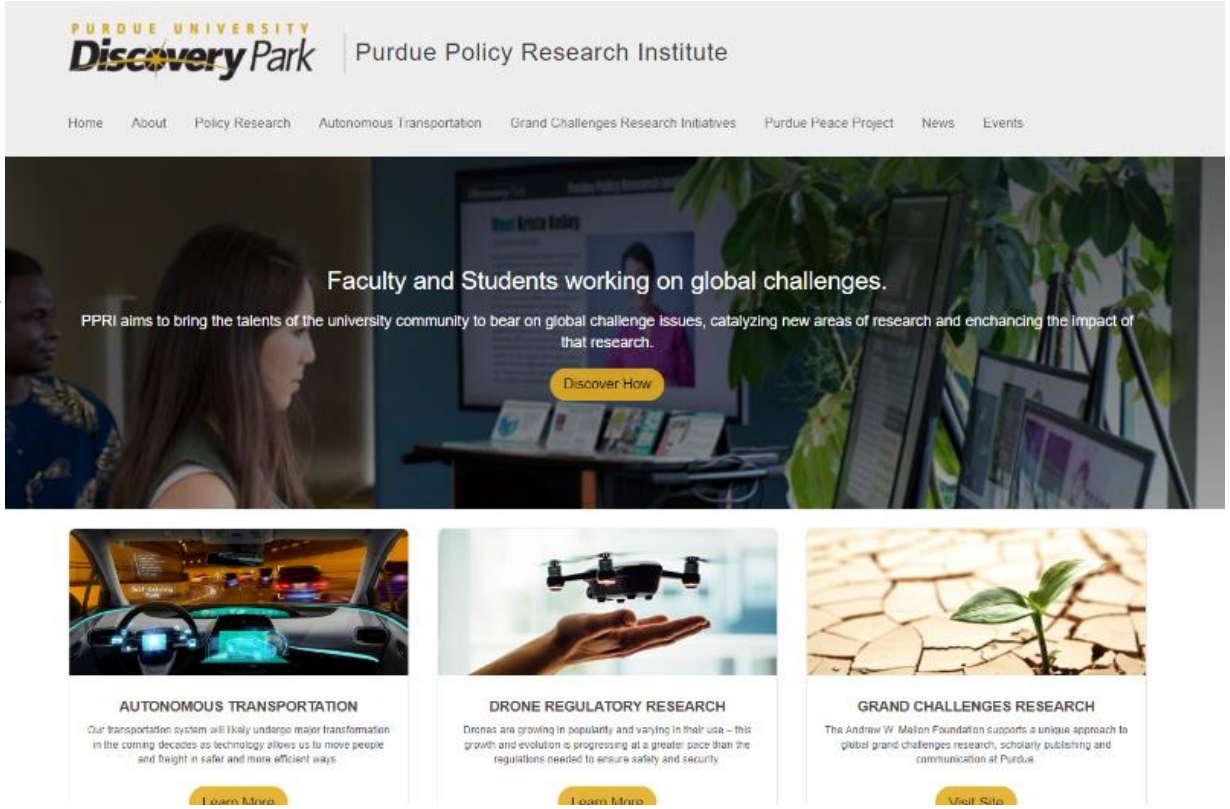




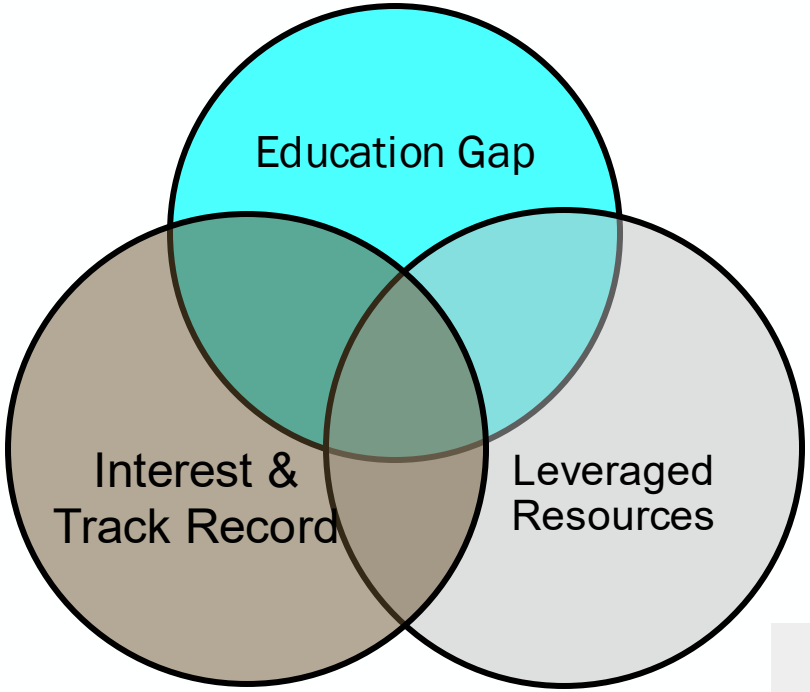


Purdue Policy Lab undergraduate honors class on *Policy Alternatives for Grand Challenges*

- **Collaborate to develop case study**
- **Grad students help as part of professional development**



Collaborate with PPRI (with grad students) to author policy brief



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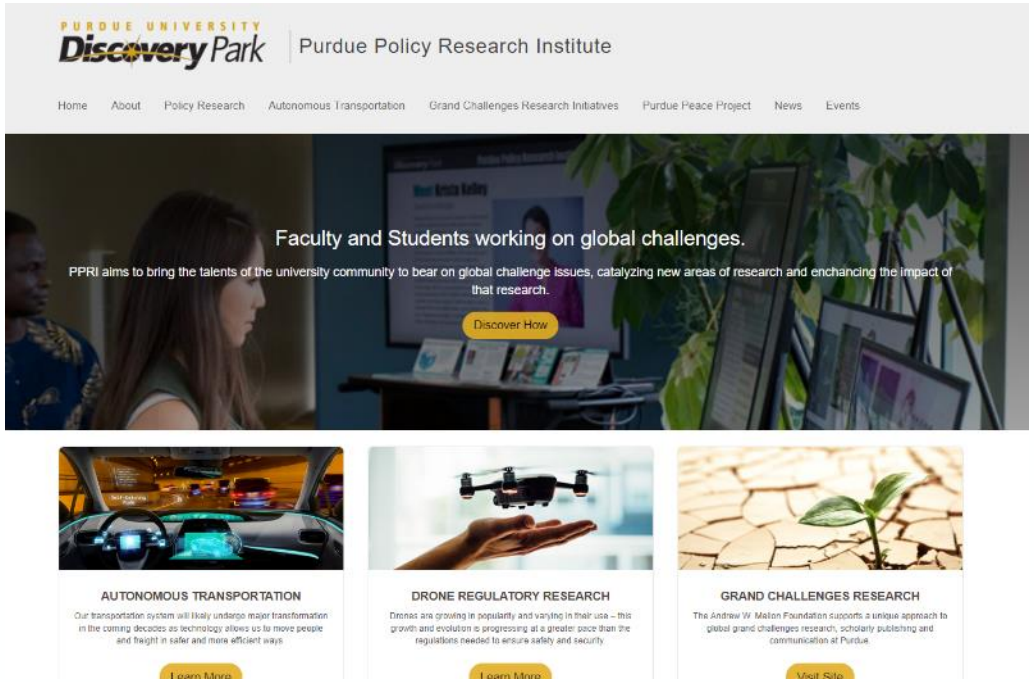
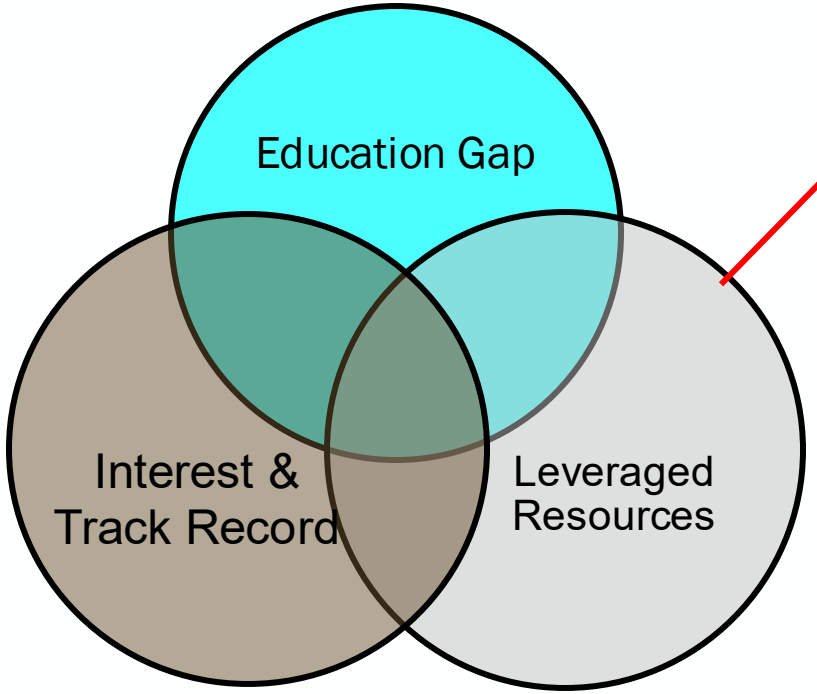
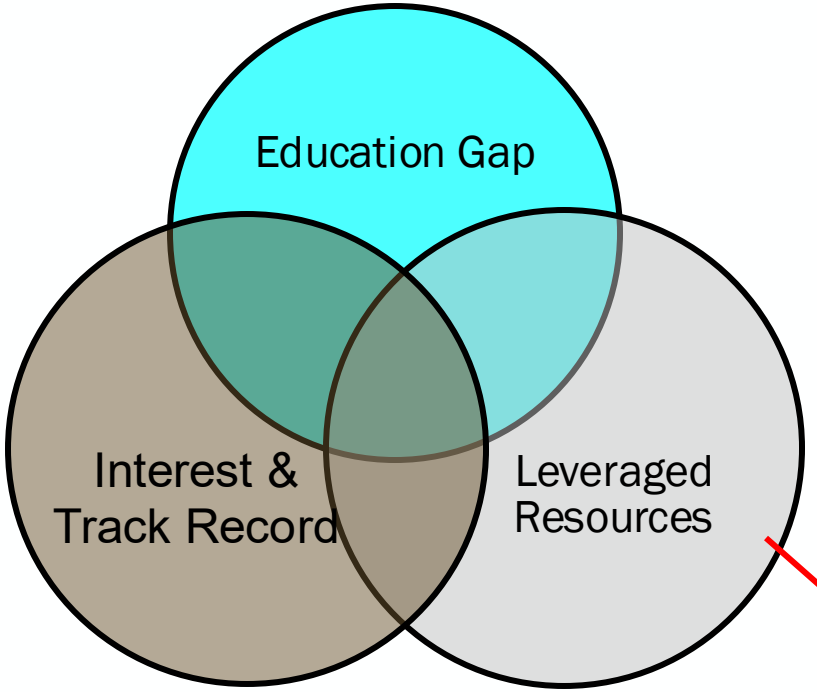




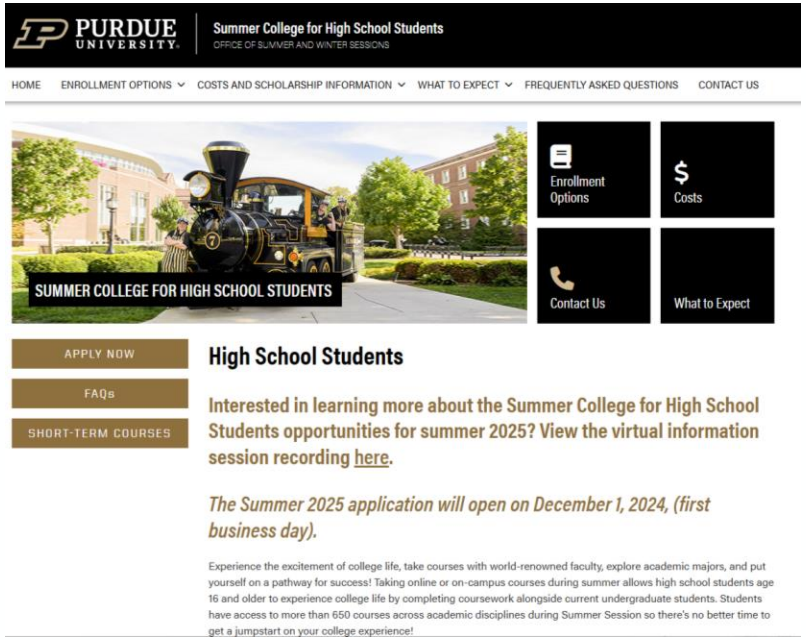
Best-practice undergraduate research as Discovery Park provides:

- **Cohort experience that includes professional development**
- **Recruitment**
- **Assessment**
- **Research poster and undergraduate research journal**

Evidence for apprentice-style research experience with separate research groups that meet together as a cohort focused on learning about research. National Academies of Sciences, Engineering, and Medicine. (2017), etc.



Case study-based learning incorporated into course with Purdue Summer College for High School Students



It is suggested that to motivate learners to engage in STEM, apart from focusing on the scientific content and processes, its contributions to solving societal problems must also be emphasized (Belanger et al., 2017).

Education Gap

DIRECTION: Complete Section 3: Education Gap (Conceptual, Not Activities):

Identify a learning or reasoning challenge related to your research gap. Focus on what learners struggle to understand, not on activities you might engage in.

Broader Impacts vs. Education Plan

Broader Impacts  Education Activities

If my research and education efforts succeed, what changes?

This work will change _____

by improving _____

for _____

Broader Impacts

Education activities describe what you do.

Broader impacts describe what changes as a result of your research and education efforts.

Education Activities	Broader Impacts
Mentoring students	Improved scientific reasoning
Hands-on learning	Better judgment under uncertainty
Workshops / mobile labs	Expanded access and preparedness

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Broader Impacts

Grant Writer's Website:

What are Broader Impacts?

Broader impacts are the potential to benefit society and contribute to the achievement of specific, desirec societal outcomes. They may be accomplished through:

1. the research itself
2. activities directly related to research projects
3. activities supported by and complementary to the project

A broader impact **statement** describes benefits and outcomes—not logistics.

"Cords" of research, education and outreach, and diversity-related activities integrate through your project to deliver **broader impacts.** For instance:

- Fuller Participation of Women, Persons with Disabilities, and Underrepresented Minorities in STEM
- Improved STEM Education and Educator Development
- Increased Public Scientific Literacy
- Improved Well-Being of Individuals
- Development of a Diverse, Globally Competitive Workforce
- Increased Partnerships among Academia, Industry, Government, and Non-Profits
- Improved National Security
- Increased U.S. Economic Competitiveness
- Informed Public Policy
- Enhanced Research and Education Infrastructure

(Coming Soon!)

Example Broader Impact Statements from Funded NSF Proposals

Steps to Develop an Education and Workforce Development Plan

Tips for Broadening Participation and Diversity, Equity, and Inclusion Plans

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Education Plans: Beyond Business as Usual

Business as Usual

- "I will integrate my research into my assigned courseload"
- Standard practice undergraduate instruction
- Broader impacts contained to the classroom

- One-time interactions with K-12 students
- Undergraduate research opportunities

- Material designed exclusively for lectures

vs. that "*Je Ne Sais Quoi*"

vs. co-developed/cross-listed/online courses with broader reach

vs. innovative teaching methods and modalities

vs. service-learning projects, partnerships with informal science and learning organizations, citizen science and public STEM literary that reaches beyond academia

vs. K-12 teacher workshops

vs. graduate students taking leadership role in mentoring undergraduate students

vs. "hands-on" experiential learning projects and entrepreneurship opportunities (tip: include NSF I-Corps!)

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Leveraging Institutional Resources

College of Science

Kids STEM Degree Program

- 3–5-minute videos that allow K-12 students to earn various "degrees"
- Published on the "Superheroes of Science" YouTube channel (almost 65k subscribers, many of whom are K-12 teachers)

Contact: Bill Bayley, Director of Science K-12 Outreach
wbayley@purdue.edu

STEM Career Repository

- Creates awareness for potential STEM careers
- Your graduate students can contribute!

Hands-on lab experiences (HOPs)

- Faculty present to middle/high school students at school, students sign up based on interest

Leveraging Institutional Resources

College of Education

Gifted Education Research & Resource Institute (GER^{2}I)

- Offers enrichment programs for youth, professional development for educators, graduate programming for future leaders
- Conducts innovative research in fields related to development of human potential
- Native American Research Initiative focuses on gifted & talented students among the Native American/Indigenous populations
- Project HOPE+ provides scholarships to Native American students to attend summer programs

Contact: Nielsen Pereira, Executive Director, npereira@purdue.edu

Leveraging Institutional Resources

Summer College for High School Students

Residential Summer College

- Propose short, one to two- week courses
- Existing mechanism for recruitment
- Graduate students can be involved in teaching

Contact: Pamela Dexter, Assistant Director of Summer Pre-College Pathways, pdexter@purdue.edu

Leveraging Institutional Resources

Office of Undergraduate Research (OUR)

Summer Research Program

- Undergrads engage with research projects across various disciplines and are provided stipends

Contact:

Amy Childress, Director of Purdue OUR, childres@purdue.edu

JJ Sadler, Associate Director of Student-Focused Programming, jjsadler@purdue.edu

Undergraduate Research Roundtable

- Research mentors can register for a booth at this fall/spring event to engage undergraduate mentees

Undergraduate Research Conference

- Students present posters and attend research seminars and presentations

Leveraging Institutional Resources

Office of Undergraduate Research (OUR)

Undergraduate Research Mentor Consultations and Training

- Consultations on various UR topics (as mentors) available upon request
- "Mentormaking" training (Purdue's adaption of the *Entering Mentoring* seminar) available synchronously or asynchronously, self-study or in a group

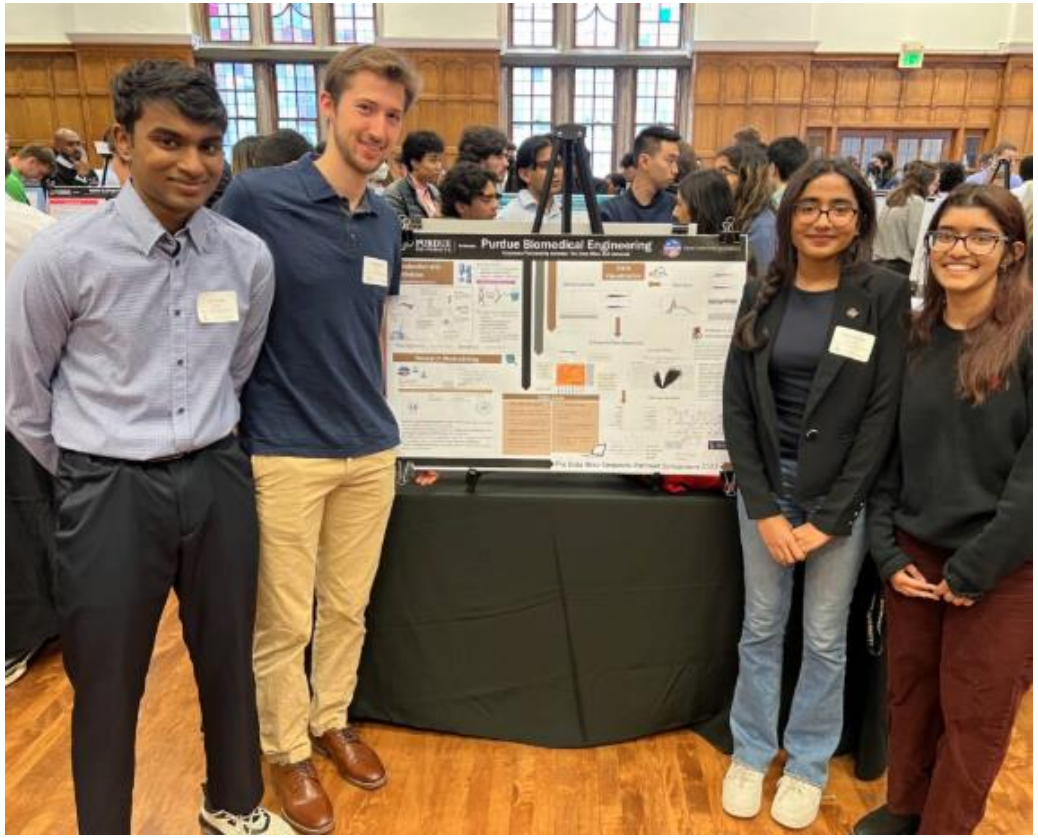
Tip: Subscribe to the OUR Newsletter.

Leveraging Institutional Resources

The Data Mine

An Interdisciplinary Living-Learning Community centered around Data Science

- Open to all colleges, programs, and majors
- Over 60 corporate partnerships
- Students gain access to data science tools, software, and training
- Faculty mentor students, lead research projects
    - Projects can be co-designed with industry partners



Contact: datamine@purdue.edu

or Executive Director, Prof. Mark Ward: mdw@purdue.edu

Leveraging Institutional Resources

RCAC Cyberinfrastructure eXPerience (CI-XP) Student Programming

Envision Center

- AR/XR/VR research concepts

High Performance Computing

- Everything else that is research computing and HPC-related

Contact: rcac-help@purdue.edu for 1:1 consultation on RCAC programming

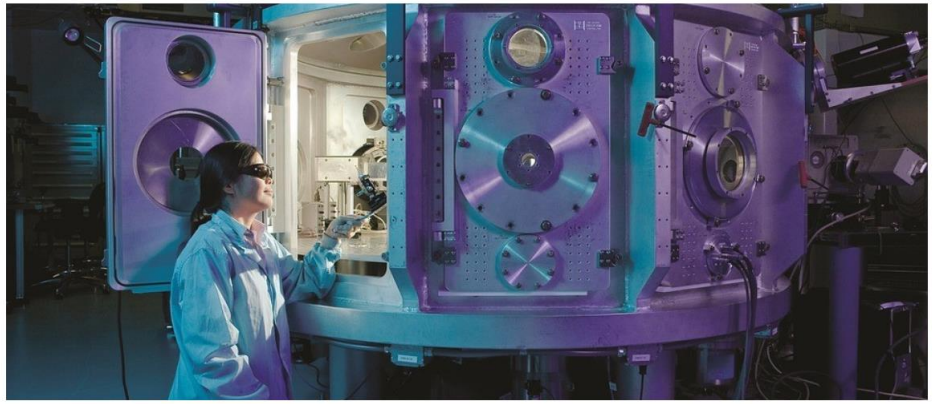
CI-XP STUDENT PROGRAM

Leveraging Institutional Resources

Discovery Park

Discovery Undergraduate Interdisciplinary Research Internship (DUIRI)

- Promotes interdisciplinary research among Purdue undergraduates
- Faculty may propose projects that combine two or more disciplinary strengths
  - Fall, Spring, and Summer cycles
  - Once approved, students apply and faculty select candidates
- Provides structured educational components such as learning contracts, poster presentations, and publication through Purdue e-Pubs
- Contact: duiri@purdue.edu



Leveraging Institutional Resources

Discovery Park

Purdue Policy Research Institute

- Convenes researchers and policy influencers for data-driven policymaking and assessment
- Three strategic areas of focus:
  - Defense, Security, Space
  - Health, Wellbeing, Future of Work
  - Sustainability, Development, Peacebuilding
- Project-based, ad-hoc and programmatic internship and fellowship opportunities for undergrads and grads

Contact: Stacey Connaughton, Director,
sconnaug@purdue.edu

Leveraging Institutional Resources

College of Engineering

Engineering Projects in Community Service (EPICS)

- Purdue-founded in 1995, has since expanded to numerous universities and programs
- Service-learning design program that pairs undergraduate students with community organizations to complete projects that fall into four broad areas:
  - Human services
  - Access and abilities
  - Education and outreach
  - Environment
- Faculty may already have a community partner or seek new connections
- Faculty and students span all disciplines (not restricted to College of Engineering)
- Contact: Assistant Director Jorge Martinez, martinezj@purdue.edu

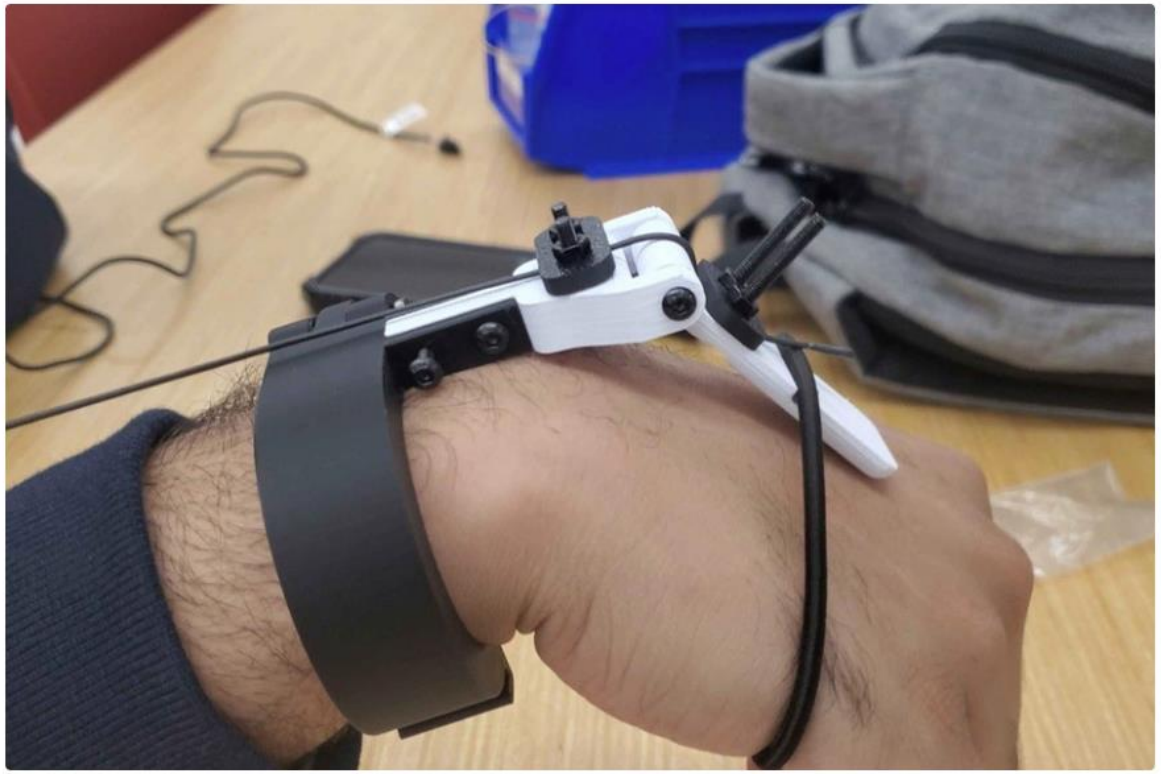
Leveraging Institutional Resources

College of Engineering

Vertically Integrated Projects (VIP)

- Long-term, high investment program that integrates undergraduates across all four years of study with faculty and graduate student mentors
- Projects address real-world research and design challenges and span multiple semesters
- Layered mentorship model: faculty and grads guide teams; more experienced undergrads mentor newcomers
- To become a faculty mentor, complete intake form on the website and send to Cyndi Lynch or Carla Zoltowski

Contacts: Cyndi Lynch, Senior Program Manager, clynch@purdue.edu or Carla Zoltowski, VIP Director, cbz@purdue.edu



Taran Kamireddy's VIP team works to create an effective and objective test for post-stroke mobility through fingers and wrists.

Always remember…

- Plan ahead: seek relationships, not transactions
- Begin at the department and college-level
- Favor a few, meaningful activities over many, less meaningful activities
- Include a plan to broadly recruit participants
- Include a plan to evaluate impact/success of educational initiatives

Evaluation on Campus

Evaluation and Learning Research Center (ELRC)

Housed in College of Education; Director Willie Burgess

- Conducts original research on learning and educational best practices
- Can function as independent project evaluation
- Expertise in:
  - Logic models and strategic planning
  - Theoretical frameworks
  - Theories of change
  - Qualitative/Quantitative evaluation and research methods
  - Facilitation, group reflection, organizational learning about evaluation and adaptive management

Tip: Reach out early and schedule an informal conversation to discuss project evaluation needs- the ELRC seeks to fit YOUR budget through customizable offerings

Contact: 765-464-4555 or learningcenter@purdue.edu

Engaging with a Program Officer

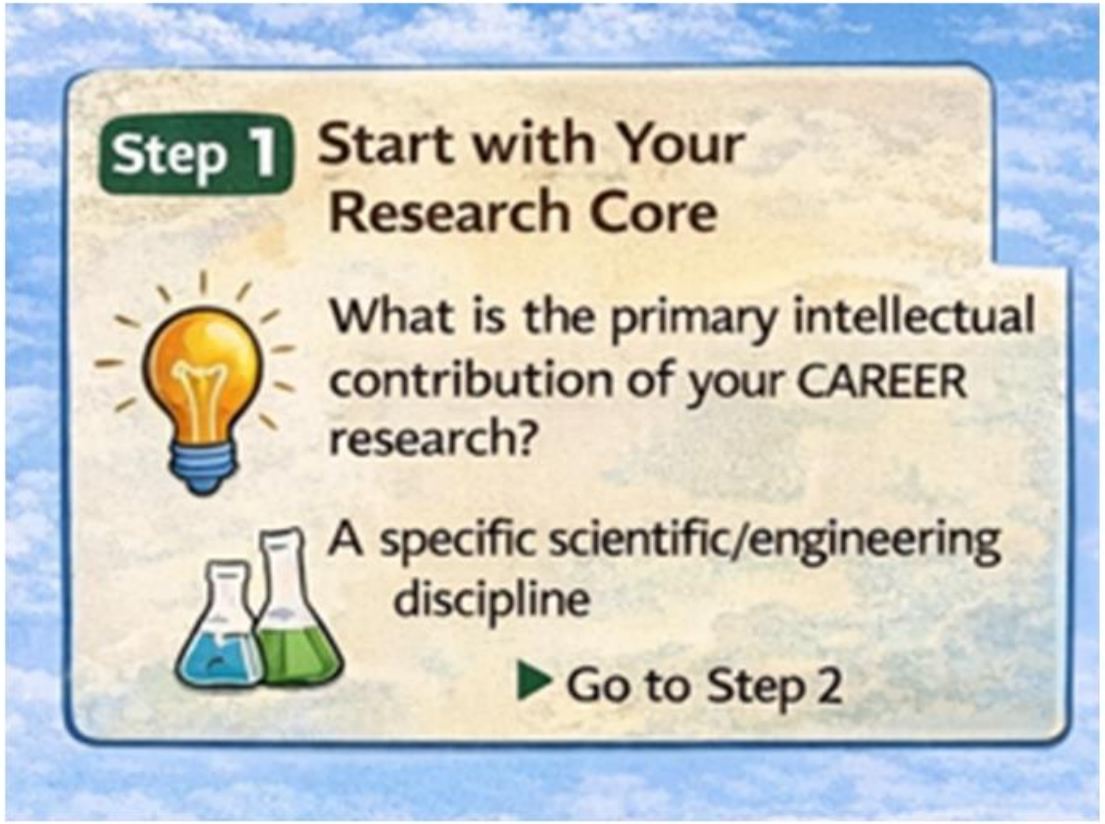
Concept Paper and Communication

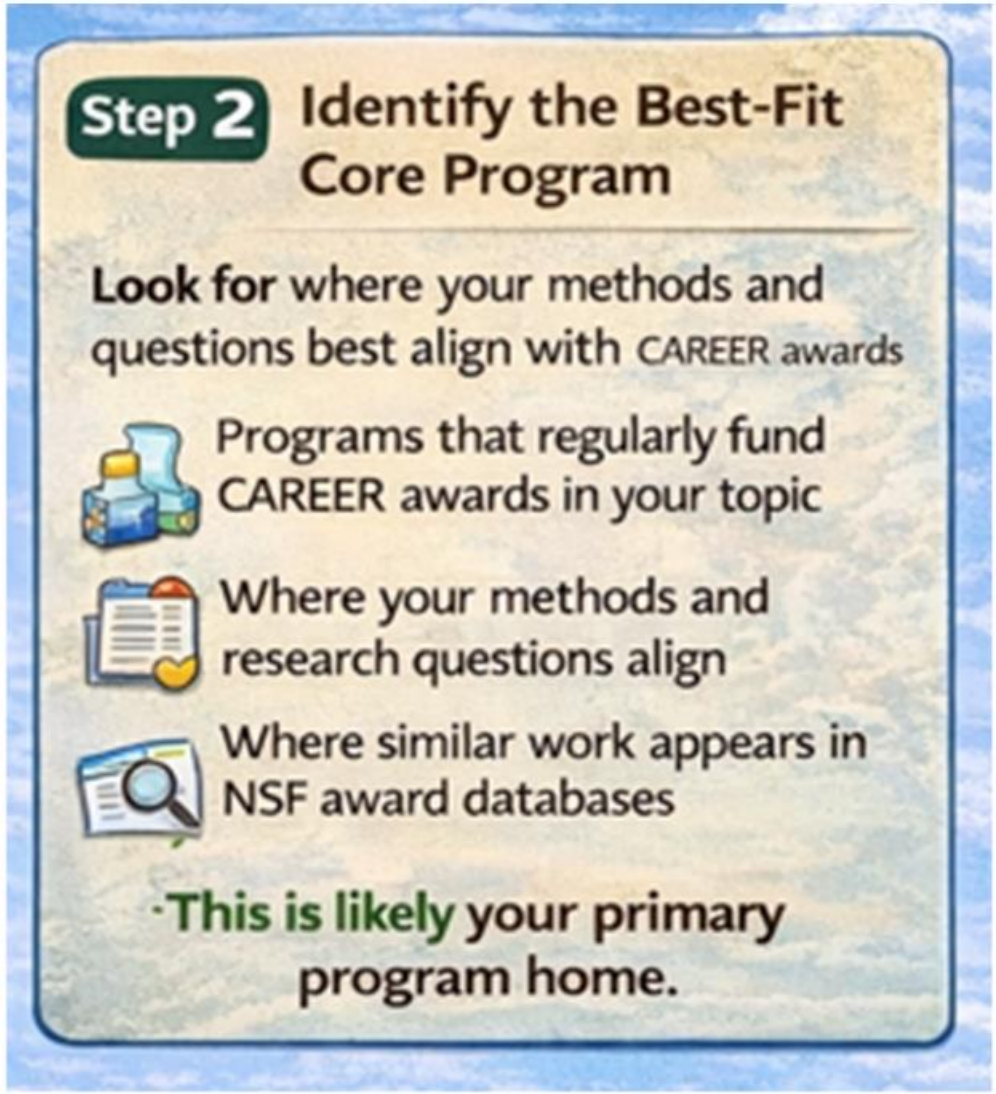
Storyline is Basis for PO Discussion

https://www.purdue.edu/research/funding-and-grant-writing/grant-writing-support.php

Where does my work fit?

How to navigate program fit and interdisciplinary work





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Where does my work fit?

How to navigate program fit and interdisciplinary work

Step 3 Work Spans Multiple Fields?

- Does one field clearly anchor the research methods or theory?
- Is one community more likely to evaluate my work fairly?

Step 4 Contact Program Officers (POs)

Send a brief project summary to

- Your primary candidate's PO

- Secondary candidate's PO if needed

Ask:

- Will my project align with your priorities?

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Where does my work fit?

How to navigate program fit and interdisciplinary work

Step 5 Decide on Submission Strategy

Clear disciplinary fit

Submit to that core program

Strong interdisciplinary overlap

Request co-review

Unsure after PO feedback

Follow PO guidance

COMMON MISTAKES TO AVOID

- ✗ Guessing without talking to POs
- ✗ Write two different versions
- ✗ Being vague to 'hedge'
- ✗ Assuming interdisciplinary = automatic advantage

KEY TAKEAWAY

If you have **two possible directorates**, talk to **both program officers**, ask about **fit** and **co-review,** and **choose one clear primary audience** for your proposal.

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Contacting Your Program Officer

Don't make a cold call

- ✓ Identify your program officer(s): CAREER Contacts by Directorate
- ✓ Contact Primary PO via email to request Teams/Zoom or phone conversation

Include in your email:

- ✓ One-page concept paper
- ✓ NSF-compliant biographical sketch

NOTE: IN YOUR MEETING, LISTEN MORE THAN TALK

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Questions to Ask Program Officer

When? No later than mid-May

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. Is review ad hoc or panel? (see NSF review process: **animation)**
5. What is the preference for RET/REUs?

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Outlining: Be Responsive To Program Requirements

Map CAREER Requirements to an Outline, Not a Table of Contents

Always Outline Before Writing

Possible Outline for CAREER Project Description 2026

- Use "I" instead of "we" or "our" because this is about YOUR five-year career path. (However, the one-page summary is required to be in the third person.)
- 15 pages maximum for project narrative
- No URLs allowed except in the references. No et al. in references.
- Avoid passive voice whenever possible
- Include quality graphics. Do not just label: Use the caption to walk the reviewers through the visual and/or provide the takeaway point.

1. Significance and Rationale (~1 page)

- Provide a compelling storyline that excites your reviewers. Use the logic flow of:
  - What is the problem?
  - What has been done already to address this problem?
  - What is the gap that remains?
  - How do you propose to address this gap?
- State your vision for how this will launch you into novel contributions in your career
  - Do not propose incremental advances
- Include both research and education goals
- Include a summary sentence on the impact of your project's success

2. Broader Impacts (at least ½ page)

- **Suggest you put this section early on instead of the end.** Reviewers read more carefully at the outset, and this BI text builds a case for the significance of your proposed work. You want them to read it as a lens for the rest of your proposal.
- State how your project will benefit society through both research and educational efforts. Can include translational potential.
- Refer to Broader Impacts resources on the grant writing website at: https://www.purdue.edu/research/oevprp/funding-and-grant-writing/grant-writing-support/broader-impacts.php for BI ideas

3. Approach

- Provide a short paragraph overview of your research plan approach as a section roadmap

3.1 Background

- Not a literature review. Cite key references strategically, particularly in light of "What has been done already to address this problem?"

3.2 Preliminary Data

- Three options for where to describe preliminary data: embedded within the background section, a separate subsection such as this 3.2 (most common), or per objective.

3. 3 Research Objectives

- Include 2-4 sentences providing a roadmap for objectives and how they integrate.
  - If you have any collaborators, clearly explain their roles
  - If you will need special equipment or instruments, include text on how you will acquire these resources or gain access to existing ones, e.g., national labs

[Objective /Phase Title for each obj/phase]

- Technical gap or research questions addressed
- Methods and procedures
  - Point out innovation
- Potential problems and alternative solutions (e.g., risk mitigation)
- Expected outcomes
  - State significance

[Objective /Phase Title for each obj/phase]

- Technical gap or research questions addressed
- Methods and procedures
  - Point out innovation
- Potential problems and alternative solutions (e.g., risk mitigation)
- Expected outcomes
  - State significance

Evaluation Plan

- If appropriate for your research, consider an evaluation section that describes the metrics/benchmarks/criteria for success and evaluation methodology

4. Integration of Education and Research [~ 2 pages long]

- State the education problem/gap you are addressing and how this motivates your plan
- Include an education goal (see section 1)
- Provide an overview of your suite of educational activities and make it clear how it will integrate with the research component
  - Note: Make sure you have budgeted for your activities
  - Include student/participant recruitment mechanisms for broad participation

[Education Activity Title per Activity]

- Be creative. If you have existing or basic educational initiatives, show how you are expanding in new ways
- Include a description of your preliminary work in the educational arena. Have you already revised or created a new course? Have you led a workshop for undergraduates or high school students? Include text regarding your experience and motivation.
- Cite key educational documents as rationale for why these activities are a best practice.
  - Leverage institutional resources and expertise. Do not reinvent the wheel.

Education Plan Evaluation

- Include a clear assessment plan/evaluation mechanism either per activity or in a distinct subsection.

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Always Outline Before Writing Cont'd

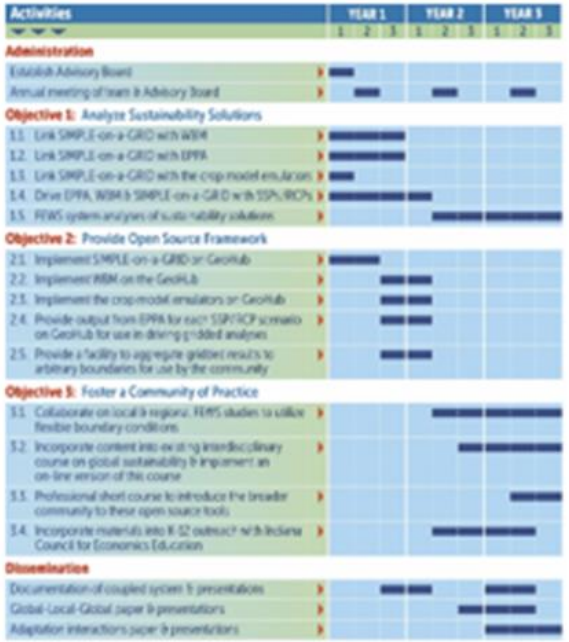
5. Prior NSF Support

- If you have received NSF funding (as PI, co-PI, senior personnel) in the past five years, you must report on one award most relevant to this CAREER proposal.
- Use the prescribed format given in the NSF Grant Proposal Guide, especially regarding separate subheadings of *intellectual merit* and *broader impacts* and referencing resulting products/publications from this previous award. Here is an example:

NEES Operations (0927178; $81,761,788; 10/2009-9/2014). PI: J. Ramirez. Purdue University will lead, manage, operate, and maintain George E. Brown, Jr. Network for Earthquake Engineering Simulation (NEES) with 14 earthquake engineering and tsunami experimental facilities locally operated by universities across the U.S. and NEEShub cyber platform for collaboration. NEEShub. ***Intellectual merit***: NEES Community and Communication Center's four-year tenure as headquarters for NEES Operations has facilitated an unprecedented cultural change in how research is performed in earthquake engineering in a new outside-the-university collaboration model using improved data sharing capabilities and tool co-location at NEEShub. Serves as both as an intellectual and practical model for all disaster-related fields that involve distributed sites. ***Broader impacts***: NEEShub provides broader access to experimental data, extensive simulation resources, and research-grade inquiry tools and streamlined data sharing capabilities. NEEShub now has 5700 registered users, thousands of data downloads from the Project Warehouse per quarter, and more than 55,000 contributors from over 182 nations. Example publications, products, tools from this effort: NEEShub platform for cyber collaboration; Buckle and Ramirez, 2010, Ramirez, 2010; and Browning et al, 2013.

6. Project Management

- Include a timeline of activities (research and education)
- If appropriate, consider using an advisory board
  - Provide feedback on your progress and offer risk mitigation input
  - Must have letters of commitment from any named board members
- Consider using a Gantt chart, e.g., this style:



7. Dissemination

- For both research and education results

8. Career Development and Success Factors (optional)

- Could include a five-year overview of your career development and deliverables
- Briefly state where you see your teaching, research, and service in 5, 10, and 20 years
- Make a summary statement about how well-positioned you are to build on a record of success as a researcher and educator, align with institutional strategic plans, and leverage significant institutional resources
- Build a case for why you are an outstanding researcher/educator who will use this

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Proposal Preparation Timeline

Map to Key Milestones

CAREER 2025 Proposal Preparation Timeline (Due July 22) * Red denotes should do this before writing any proposal text

By:	Mon 2/9	Mon 2/23	Mon 3/9	April				May			Mon 6/8	Mon 6/22	Mon 7/6	Mon 7/13	Mon 7/20
Analysis and Planning															
Read abstracts of funded CAREERS for directorate fit and identify appropriate program/PO															
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 concept paper for PO															
Concept paper reviewed internally															
Revise concept paper															
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 letters of commitment (TEMPLATE)															
Request dept head letter and provide bullet points															
Proposal Writing and Editing															
Develop NSF bio on SciENcv to reflect research & education															
Use outline to write sections															
Edit															
Give near final draft to internal reviewers															
Revise based on review															
Write data management plan															
Complete Collaborators and Other Affiliations															
Write mentoring plan															
Write budget justification															
Write facilities document (use epubs)															
Write one-page summary															
Final check of references															
Final budget/draft narrative to PreAward															
Submit all final supplementary documents to PreAward															
Submit project narrative to PreAward															

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Required Departmental Letter

Key Considerations for a Strong Letter

Purpose: To affirm departmental support for the PI's career development and commitment to integrating research and education under the CAREER award.

The two-page letter should describe:

- ✓ Eligibility
- ✓ Departmental Commitment
- ✓ Career Fit & Mentoring

Important Considerations:

- ✓ **Be specific**: Provide a rough draft with specific examples! DON'T just send a write-up about your project, or you'll get a vague letter.
- ✓ **Be collaborative:** Schedule a meeting with the department head to talk through career fit, mentoring strategies, etc.
- ✓ **Use strong language**: Use language that endorses, is confident, and forward-looking
- ✓ **Think like a reviewer:** Make sure the letter clearly answers the question, "*Why is this PI and this project a strong long-term investment for NSF?*

Putting It Together: Departmental Letter

Template

<<Purdue/Dept Letterhead>>

<<Date>>

Review Panel, CAREER Award
The National Science Foundation
Directorate(s) for <<insert>>
2415 Eisenhower Avenue
Alexandria, Virginia 22314

Dear Panel Members,

On behalf of the << dept. name>> of Purdue University, I am pleased to provide this institutional letter of support for Dr. XX's application entitled <<title of CAREER>>.

How project fits with/advances departmental education and research goals.

Dr. XX has proposed <<XXX>> research and education plan that is well aligned with <<XXX>

Dept Letter must provide "An indication that the PI's proposed CAREER research and education activities are supported by and advance the educational and research goals of the department and the organization, and that the department is committed to the support and professional development of the PI."

The School of X is fully committed to providing Dr. XX with …

<<Give further description and details of the specifics of support, including discussion of specifics of start up, TA and RA support, laboratory and office space, etc. Describe the ways in which the signer of the letter will ensure the appropriate mentoring of the PI, in the context of the PI's career development and his/her efforts to integrate research and education throughout the period of the award and beyond. What mentoring will be provided?>> In addition, I am providing mentoring support to Dr. XXX and have met with him/her regularly to discuss this proposal. I agree to continue at least <<once every two months>> to discuss a wide range of topics related to teaching, research, and promotion and tenure.

Statement on departmental commitment to support PI via mentoring and resources.

Confirmation of PI eligibility.

As required, Dr. XXX is eligible for the NSF CAREER award: Dr. XXX received his/her doctoral degree in <<xxx (Discipline)>>, is untenured, has not previously received a CAREER award, and is employed as an Assistant Professor in a tenure-track position at Purdue University. I look forward to continuing to support this exciting work and his/her academic career.

Sincerely,

Name
Title

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Note on NSF Reviews

Key Review Changes Affecting CAREER Proposals +

- **Minimum reviews** reduced to 2 and external reviewers not always required
- **More proposals triaged** – strong proposals may be funded without panel, weaker proposals may be declined without discussion
- **Panel summaries are shorter** (3 – 5 sentences, bullets allowed)
- **Minimal pre-award negotiation** – Program officers are discouraged from extensive back and forth or budget reshaping
- **More proposals may be returned without review** for insufficient content regardless of all sections addressed

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Top 10 Mistakes & Final Tips

Planning is Key!

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

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Top 10 Mistakes & Final Tips

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
1. **Research plan lacks cohesion & integration:** Collection of loosely related ideas; No gap rationale

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NSF Policy On the Use of AI

- AI may be used in writing proposals
- Disclose in the Project Description if used and how
- You are fully responsible for accuracy, originality, and integrity of AI-generated content
- Do not upload confidential or proprietary information into public AI systems
- Reviewers are prohibited from using AI on proposal materials

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NSF Policy On the Use of AI

Examples – End of Project Description:

“AI Assistance Disclosure: Portions of this proposal’s text were drafted with the help of generative AI tools. The PI reviewed, verified, and revised all content for accuracy, originality, and alignment with NSF and institutional policies.”

“AI Assistance Disclosure: Generative AI was used for grammar and refinement of original writing only. All intellectual content originates from the PI.”

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THANK YOU!

Link to our office for Strategic Interdisciplinary Research (SIR):

https://www.purdue.edu/research/oevprp/research-innovation/

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