

## Possible Outline for CAREER Project Description 2025

- Use “I” instead of “we” or “our” because this is about YOUR five-year career path (summary should be 3<sup>rd</sup> person voice not 1<sup>st</sup> person) and minimize passive voice
- 15 pages for project narrative, no urls
- Better to have the broader impacts section near the beginning
- Include quality graphics. Do not just label but use the caption to walk the reviewers through the visual and/or provide the take away point.

### 1. Significance and Rationale (~1 page)

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- Provide a compelling storyline that excites your reviewers. Use 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?
- 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 summary sentence on impact of your project success

### 2. Broader Impacts (at least ½ page)

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- **Suggest you put this section early on instead of the end.** Reviewers read more carefully at outset, and this BI text builds a case for the significance of your proposed work. You want them to read the rest of your proposal through the lens of your compelling impact.
- 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

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- 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 background section, a separate subsection such as this 3.2 (most common), or per objective.

#### 3.3 Research Objectives

- Include 2-4 sentences providing 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]***

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***Evaluation Plan***

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

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

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- 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 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.

- 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.

- | <b>Activities</b>  |   | <b>YEAR 1</b> |   |   | <b>YEAR 2</b> |   |   | <b>YEAR 3</b> |   |   |
|--|---|---------------|---|---|---------------|---|---|---------------|---|---|
|  |   | 1             | 2 | 3 | 1             | 2 | 3 | 1             | 2 | 3 |
| <b>Administration</b>  |   |               |   |   |               |   |   |               |   |   |
| Establish Advisory Board   | > |               |   |   |               |   |   |               |   |   |
| Annual meeting of team & Advisory Board  | > |               |   |   |               |   |   |               |   |   |
| <b>Objective 1: Analyze Sustainability Solutions</b>   |   |               |   |   |               |   |   |               |   |   |
| 1.1. Link SIMPLE-on-a-GRID with WBM  | > |               |   |   |               |   |   |               |   |   |
| 1.2. Link SIMPLE-on-a-GRID with EPFA   | > |               |   |   |               |   |   |               |   |   |
| 1.3. Link SIMPLE-on-a-GRID with the crop model emulators   | > |               |   |   |               |   |   |               |   |   |
| 1.4. Drive EPFA, WBM & SIMPLE-on-a-GRID with SSPs/RCPs   | > |               |   |   |               |   |   |               |   |   |
| 1.5. FEWS system analyses of sustainability solutions  | > |               |   |   |               |   |   |               |   |   |
| <b>Objective 2: Provide Open Source Framework</b>  |   |               |   |   |               |   |   |               |   |   |
| 2.1. Implement SIMPLE-on-a-GRID on GeoHub  | > |               |   |   |               |   |   |               |   |   |
| 2.2. Implement WBM on the GeoHub   | > |               |   |   |               |   |   |               |   |   |
| 2.3. Implement the crop model emulators on GeoHub  | > |               |   |   |               |   |   |               |   |   |
| 2.4. Provide output from EPFA for each SSP/RCP scenario on GeoHub for use in driving gridded analyses                                  | > |               |   |   |               |   |   |               |   |   |
| 2.5. Provide a facility to aggregate gridded results to arbitrary boundaries for use by the community                                  | > |               |   |   |               |   |   |               |   |   |
| <b>Objective 3: Foster a Community of Practice</b>   |   |               |   |   |               |   |   |               |   |   |
| 3.1. Collaborate on local & regional FEWS studies to utilize flexible boundary conditions  | > |               |   |   |               |   |   |               |   |   |
| 3.2. Incorporate content into existing interdisciplinary course on global sustainability & implement an on-line version of this course | > |               |   |   |               |   |   |               |   |   |
| 3.3. Professional short course to introduce the broader community to these open source tools   | > |               |   |   |               |   |   |               |   |   |
| 3.4. Incorporate materials into K-12 outreach with Indiana Council for Economics Education   | > |               |   |   |               |   |   |               |   |   |
| <b>Dissemination</b>   |   |               |   |   |               |   |   |               |   |   |
| Documentation of coupled system & presentations  | > |               |   |   |               |   |   |               |   |   |
| Global-Local-Global paper & presentations  | > |               |   |   |               |   |   |               |   |   |
| Adaptation interactions paper & presentations  | > |               |   |   |               |   |   |               |   |   |

## **7. Dissemination**

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- For both research and education results

## **8. Career Development and Success Factors (optional)**

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- 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 CAREER as a launching pad to potentially transformative work
- Describe how institutional capacity (infrastructure etc) is here at Purdue to help you succeed
- Describe how award will help you to collaborate better
- Describe ultimate impact on your career path and contributions to the field