Interdisciplinary, Scalable Solutions for a Sustainable Future (ISSSF)

Background and Purpose

The *Interdisciplinary, Scalable Solutions for a Sustainable Future* (ISSSF) project is funded by the Office of the Provost, Provost Investment Fund. This is a three-year project, beginning in 2019, with an annual budget of $100,000.

The primary aims for this project are to:

- Promote the University of Iowa as an important destination for research and teaching in the environmental and sustainability sciences.
- Enhance the competiveness of UI researchers as they compete for large interdisciplinary grants.
- Engage faculty and students from across campus as well as Iowa communities in meaningful, use-inspired research focused on sustainability and resilience.

Major project deliverables are:

- Annual seed grant program.
- Annual workshops designed to bring researchers in the sustainability and environmental fields together to promote related research, collaboration and interdisciplinary proposals.
- A research repository that collects and disseminates UI research in the sustainability and environmental fields.

Annual seed grant program

It is expected that 2-3 seed grants will be funded each year. Project teams will draw from two or more departments, preferably from multiple colleges, and include research experiences for graduate and undergraduate students. In keeping with the living learning laboratory concept, direct engagement with off-campus public or private organizations is strongly encouraged.

Seed Grant Selection Criteria: Year 1

The following components will be central to the vision of highly competitive proposals:

- Sustainability Science. We follow the National Academy of Science and define sustainability science as "...an emerging field of research dealing with the interactions between natural and social systems, and with how those interactions affect the challenge of sustainability: meeting the needs of present and future generations while substantially reducing poverty and conserving the planet's life support systems."
- Interdisciplinary Research. Research teams will address sustainability related questions that require participation from more than one discipline.
- Intellectual Merit. The proposed research must have the potential to advance science. Strong proposals will illustrate how the work to be completed as part of the proposed PIF project will enhance the team's ability to compete successfully for external funds.
- Student Research. The research will have significant student participation at the undergraduate and graduate level.

- Student Learning. The research team will commit to active interaction in UI courses. Optimally this occurs at multiple levels. For example, team members can collaborate with instructors of general education courses to promote concepts related to sustainability and civic engagement broadly defined, and/or sponsor specific projects that meet the requirements of more advanced courses and the sustainability certificate.
- Departmental Engagement. It is hoped and expected that departments with faculty supported by this program will also invest in the research (e.g., provide funds to support undergraduate interns).
- Relevant and Impactful. The science should be inspired by real world issues relevant to sustainability, preferably with impact to communities who are directly engaged. Investigators are welcome to contact the UI Office of Outreach and Development for assistance on finding community partners and identifying community needs.
- Innovation and Entrepreneurship. Projects supported through this fund may have the potential to provide innovative, entrepreneurial and scalable solutions to sustainability challenges.

It is unlikely that any team can implement a project comprised of all the above components with the resources available through this PIF. The review panel will look for vision and a plan to implement that vision. A competitive proposal might, for example, explore a foundational question, collect proof-of-concept data, or build new technology that significantly increases the competitiveness of a future, large-scale grant proposal. Please explain as specifically as possible the role your proposed project will play in garnering additional resources from public or private sources, or in improving community wellbeing and sustainability.

2019 theme

Sustainability science is a field of broad scope and investigators are welcome to address sustainability research from a wide variety of perspectives. However, this year it is difficult to ignore the catastrophic flooding that occurred in southwest Iowa. While not a requirement for funding, the review panel will be looking for high quality projects that address sustainability or resiliency issues related to the Iowa floods.

Who may apply?

Faculty and research staff at the Universities of Iowa.

Funding limits

The maximum award for research and development is $40,000 (direct costs only). Awards typically cover one year. Funds may be used to support students, travel, and to purchase supplies and equipment. Faculty salary support and travel to conferences/professional meetings are not allowed. Researchers who previously received ISSSF funding should include in an Appendix the year and title of the funded research project, and a brief summary of significant research outcomes and major products (e.g., manuscripts, meeting presentations, externally funded grants, etc.) that result from the prior work. If the current submission is for a similar line of research, describe how it differs from past funded projects and why additional funds are needed.

Researchers may leverage PIF resources with other funding sources. However, the research team must demonstrate why such a joint effort is needed to make a strong case for subsequent external funds (e.g., it is not the intent of this fund to help researcher complete ongoing projects).

Proposal format
Abstract (500 words)

Project description consisting of the following sections (6 pages)

- Project vision and aims
  Statement of project impact, aims, research questions, theoretical framework.
- Relevance to Sustainability Science
  Strong proposals will have elements of natural and human systems that are highly integrated and a discussion that links the proposal to relevant sustainability science literature.
- Methods
  Discuss what will be done and the how research questions will be addressed.
- Research team
  Demonstrate interdisciplinarity and needed expertise.
- Student research and learning
  Student research and education should be a prominent element in all proposals. Discuss how the project will enhance student research and education.
- Other resources
  Brief statement on any additional resources that will be contributed to this project.
- Plan for community engagement
  Describe the extent to which communities (beyond the academic community) will be engaged in, for example, developing research questions, implementing or disseminating results, or participating in data collection or analysis.
- Plan for future implementation
  This is meant as a seed grant, describe what your work will grow into within one year of project completion.

Bibliography (not included in 6 page limit)

Budget and justification (not included in 6 page limit)

Required activities

Recipients must participate in the annual workshops. Those who are considering submitting proposals in year 2 or 3 are encourage to attend the annual workshop. The intent of the workshop is to discuss projects, opportunities for synergy, collaboration and external funding, and campus activities generally relevant to sustainability science. The ISSSF advisory committee will seek participation from national leaders in sustainability education and research, representatives from public and private funding agencies, and representatives from communities who have collaborated with project teams.

Recipients must submit publications and presentations sponsored by this work to the OSE as well as a listing of data and models produced. The intent is to develop a repository of sustainability research conducted on campus that can be shared with the campus community as well as potential funders.

Due date

August 1.

It is understood that research related to natural disasters, such as flooding, can require a rapid response. Projects that address flooding in southwest Iowa that require the collection of "perishable" data may submit proposals for expedited review. The urgency of a proposal will be assessed by the ISSSF advisory committee.

Submit proposals to: Blake Rupe, Office of Sustainability and the Environment (blake-rupe@uiowa.edu). Please direct questions to David Bennett, david-bennett@uiowa.edu.