Seed Funding Program to Promote Sustainability Research Using Campus as a Living Laboratory

Institute for Sustainability, Energy, and Environment (iSEE)

Background

Transforming university campuses into "living laboratories" is a timely, important campaign for sustainability research and education as well as campus sustainability enhancement. This campaign calls for students, faculty, and staff to work together to use campus and the surrounding community as a testbed to pilot promising new solutions to real-world challenges. The University of Illinois at Urbana-Champaign (Illinois) has committed to promoting campus sustainability via hundreds of projects on campus under the Illinois Climate Action Plan (iCAP) (https://icap.sustainability.illinois.edu). More than 700 iCAP projects — categorized into energy, water, transportation, building and space, procurement and waste reduction, education, extension, and general research — are online for public assessment. These projects, many based on unique facilities/programs on campus, have great value for developing research and education projects targeting external resources; on the other hand, the realization of many campus sustainability objectives will need research support. Recently, iSEE has mapped the relevance of iCAP projects to a number of national research programs, which allows campus researchers to identify existing and/or ongoing efforts that can be incorporated into their proposal development for a particular national program (https://icap.sustainability.illinois.edu/themes/research). A report describing the iCAP projects and the links between those projects to major national research programs can be found at the following link: **Overviews of Campus Sustainability Projects at Illinois: Opportunities for Education and Research**.

The purpose of this *seed funding program is* to encourage faculty to use campus sustainability projects as a testbed for research and education and submit proposals for external funding of at least $1M. Nationwide, some universities already have one or more funding sources that are specifically available to provide seed funding for faculty to conduct research projects with the focus of sustainability on campus and/or in the community. These programs regularly call for proposals, provide mentoring and consultation resources to applicants, and encourage involving more academics in campus sustainability projects. See a report prepared by iSEE, titled "**Review of Campus Sustainability Programs: Opportunities for Education and Research.**" For examples at Harvard University, go to Campus Sustainability Innovation Fund for Living Lab; at Ohio State University go to Campus as a Living Laboratory (CALL) and Campus as a Testbed; at University of Minnesota go to Living Lab; and at University of Washington go to Campus Sustainability Fund.

Funding Opportunities

iSEE is providing seed funding for faculty members to assist in preparing a proposal for external funding that will include using campus as a living lab in their research related to sustainability. Specifically, iSEE wants to leverage this seed money to attract external funds that are relevant to iCAP objectives. When a specific call for proposals from a national granting agency on research (and extension) projects is posted, quick seed money will be provided for some promising teams who will engage with sustainability issues on campus or in neighborhood communities in their

proposal development. For approved projects, research findings are expected to provide scientific support for relevant iCAP objectives. Opportunities may be offered to campus sustainability units (iSEE, Facilities & Services, etc.) to enhance ongoing work and to students for improved sustainability education. Thus, seed funding promoting the use of *campus as a living laboratory* will offer a win-win-win solution for research and education and for *campus sustainability* enhancement.

Requirements for Seed Funding Projects

Teams on campus who wish to develop a research proposal for external funding are required to follow these criteria:

- The research and/or education in a proposal for external funding must be tied to existing or ongoing campus sustainability project(s) https://icap.sustainability.illinois.edu, and/or use campus (or surrounding communities) facilities/programs (https://icap.sustainability.illinois.edu/collections/living-lab-facilities-programs) as a testbed (case study). In general, the proposed project should be relevant to one of the iCAP objectives/strategies, as stated in 2015 iCAP: http://sustainability.illinois.edu/wp-content/uploads/2016/12/2015iCAPweb.pdf.
- The proposal for external funding must be tied to funding of not less than **$1M**.
- The proposal team must include more than two PIs; priority will be given to interdisciplinary projects.
- The sooner the LOI is submitted, the better chance for the seed funding, i.e, sufficient time should be left (e.g., three months or longer) for preparing the proposal for external funding. In general, the **LOI should be submitted during the first week of a month** for prompt consideration by the review committee.
- The proposal for external funding source must be finished and submitted via iSEE if it is supported by the iSEE seed funding. If the proposal is funded, all ICR will be sent back to the Principal Investigators' home departments.

Letter of Intent Preparation Guidelines

In order to apply for seed funding, a letter of intent (LOI) needs to be submitted to iSEE. LOIs may be submitted at any time but usually several months or more before the deadline of the proposal for external funding.

Only the LOI (see the template) is needed to apply for seed funding.

A list of national programs and the links between each of the programs and selected iCAP project are provided in the appendix. However, the external funding sources are not limited to those in the list.

The LOI is limited to three pages and must use the attached template. In general, the LOI must address how the criteria listed above are met, as well as s a description of the research for the external proposal and how the seed funding will be used. If the external funding proposal involves collaboration with campus Facilities & Services (F&S) or other administrative staff, the LOI must include an explanation of this collaboration. If the LOI is selected and the expertise and time required in the proposal for external funding are beyond the regular job responsibilities

of the related administrative staff, an agreed-upon budget must be reached between the proposal team and the administrative unit (iSEE will assist in the agreement preparation as needed).

The LOI must include a budget not over **$30K** and a statement of how the funding will be used to prepare the external funding proposal.

Any questions about the seed funding should be sent to the attention of iSEE Managing Director Jenny Kokini via email at jkokini@illinois.edu.

Procedures

A LOI should be submitted as an email attachment to Ms. Amy Nichole Rosenbery (email: husted@illinois.edu) with a copy to iSEE Associate Director Ximing Cai (email: xmcai@illinois.edu).

A panel formed by iSEE will review LOIs monthly. Seeding fund will be provided to selected teams based on the review. Comments and suggestions from the panel will go along with the review. We expect to seed fund 10-15 projects for proposal development every year.

General Review Criteria

- Does the LOI meet all of the stated requirements and guidelines?
- Does the project have the potential to impact one or more of the iCAP objectives, and impact Illinois leadership in campus sustainability in general?
- Intellectual merit: What is the potential for the proposed activity to advance the field of sustainability? Is the work plan well-reasoned, well-organized, and based on a sound rationale?
- Is there a strong potential for the target proposal to be funded by the external funding source?

Appendix

National   research programs and links between the programs and iCAP projects

(Click on 🖼 to access the links to iCAP projects)

USDA

Agriculture and Food Research Initiative (AFRI)
1. Foundational Program 🖼
2. Childhood Obesity Prevention Challenge Area 🖼
3. Food Safety Challenge Area 🖼
4. Resilient Agroecosystems in a Changing Climate Challenge Area 🖼
5. Sustainable Bioenergy and Bioproducts Challenge Area 🖼
6. Water for Food Production Systems Challenge Area 🖼
7. Community Food Projects 🖼
8. Biomass Research and Development Initiative 🖼

NSF

9. Innovation in Food energy and water systems (INFEWS) 🖼
10. Smart and Connected Communities 🖼
11. Prediction of and Resilience against Extreme Events PREEVENTS 🖼

12. Critical Resilient Interdependent Infrastructure Systems and Processes (CRISP) 🖼
13. Dynamics of Coupled Natural and Human Systems (CNH) 🖼

14. Research Traineeship (NRT) Program 🖼

DOE

SUNSHOT Initiative 🖼
15. Advance Power Electronics Designs for Solar Applications 🖼

16. Generation 3 Concentrating Solar Power Systems (Gen3CSP) 🖼
17. Solar Desalination Technology 🖼

Vehicle Technologies Office

18. Batteries and Electrification to Enable Extreme Fast Charging

19. Medium/Heavy-Duty, On-Road Natural Gas Engine Research and Development

Bioenergy Technologies Office

20. Biofuels and Bioproducts from Wet and Gaseous Waste Streams: Challenges and Opportunities
    (possible RFP within next six months)

DOD/DARPA

Biological Technologies Office

21. Biological Technologies
    (open for proposal by April 26, 2018)

22. Living Sensors

Defense Sciences Office

23. Office-wide RFP
    (open for proposal by June 11, 2018)

Information Innovation Office

24. Harnessing Autonomy for Countering Cyberadversary Systems

NASA

25. Earth Science Applications: Disaster Risk Reduction and Resilience

26. Earth Science Applications: Health and Air Quality

27. Supporting UN Sustainable Development Goals 14 and 15 in the Context of Climate Variability and Change

NIH

National Institute of Environmental Health Sciences

28. Environmental Health Sciences Core Centers

Office of Behavioral and Social Sciences Research

29. Mobile Monitoring of Cognitive Change

30.