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

Institute for Sustainability, Energy, and Environment (iSEE)

Background

Transforming university campuses into "living laboratories" is a timely, important issue for sustainability research and education as well as campus sustainability enhancement. Nationwide, some universities 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. A few examples:

- Harvard University: Campus Sustainability Innovation Fund for Living Lab
- Ohio State University: Campus as a Living Laboratory (CALL) and Campus as a Testbed
- University of Minnesota Living Lab
- University of Washington: Campus Sustainability Fund and Green Seed Fund

A report prepared by iSEE, titled "Review of Campus Sustainability Programs: Opportunities for Education and Research," provides more details.

The University of Illinois at Urbana-Champaign has committed to promoting campus sustainability via hundreds of projects on campus under the Illinois Climate Action Plan (iCAP). These projects, many based on unique facilities/programs on campus, have a great value for developing research and education projects targeting external resources. On the other hand, the realization of many campus sustainability objectives (https://icap.sustainability.illinois.edu) will need research support. More than 500 iCAP projects — categorized into energy, water, transportation, building and space, procurement and waste reduction, education, extension, and general research — are online for public assessment. Recently, iSEE has mapped the relevance of those projects to a number of national research programs, which will allow researchers on campus to identify existing and/or ongoing efforts that can be incorporated into their proposal development for a particular national program. A report describing the iCAP projects and the links between those projects to major national research programs can be referred to Overviews of Campus Sustainability Projects at Illinois: Opportunities for Education and Research.

Purpose

The purpose of an iSEE seed funding program for campus sustainability related projects is to provide incentives for faculty to demonstrate progress toward improved sustainability performance. We will leverage this seed money to attract larger external funds that are relevant to iCAP objectives. When a specific call for proposals from a national agency on large research (and extension) projects occurs, quick seed money can be provided for some promising groups who will engage sustainability issues on campus or in the neighborhood communities in their proposal development. For approved projects, a considerable amount of funding is expected to be directly applied for campus sustainability development; research findings can provide

scientific support for relevant iCAP objectives; opportunities can be offered for campus sustainability units (iSEE, Facility & Services, etc.) to enhance ongoing work and for students for improved sustainability education. The proposed seed funding aims at a win-win solution for research and education using *campus as living laboratory* and for *campus sustainability* promotion.

Criteria for seed funding projects

The following criteria are suggested for projects:

- Must be tied with 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 testbed (case study) for research or the education component of a research project
- Must 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
- Must be tied to major funding opportunities for research or research and extension with a budget not less than $1M
- Must include a team of more than two PIs; priority is given to interdisciplinary projects
- Must include a budget not more than $30K and statement of how the funding will be used for an external funding proposal
- One can apply for the seed funding for the same RFP for not more than two times
- The external funding proposal <u>must be submitted via iSEE</u>. If the proposal is funded, all ICR will be sent back to PI's home department

Procedures

iSEE will call for letters of intent (LOI) for particular national programs ahead of the due time of the proposals (we will try to leave at least six months before the due date of a proposal). The LOI must address how the criteria listed above are met, as well as regular contents for a LOI for research (e.g., problem statement, objectives, outcomes, intellectual merits, etc.)

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

A list of national programs and the links between each of the programs and selected iCAP project are provided in the appendix (next page).

Any questions about the seed funding can be sent to iSEE Managing Director Jenny Kokini at jkokini@illinois.edu.

National research programs and links between the programs and iCAP projects

(Click on text to go to the program website; 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
   (open for proposal Sept. 12-Dec. 4, 2017)
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
    (open for full Proposal by Jan. 4, 2018)
12. Critical Resilient Interdependent Infrastructure Systems and Processes (CRISP)
13. Dynamics of Coupled Natural and Human Systems (CNH)
    (open for full proposal by Nov. 21, 2017)
14. Research Traineeship (NRT) Program

DOE

SUNSHOT Initiative
15. Advance Power Electronics Designs for Solar Applications
    (open for full proposal by Dec. 15, 2017)
16. Generation 3 Concentrating Solar Power Systems (Gen3CSP)
    (open for full proposal by Jan. 19, 2018)
17. Solar Desalination Technology
    (expected posting date: Sept. 25, 2017)

Vehicle Technologies Office
18. Batteries and Electrification to Enable Extreme Fast Charging
    (expected posting date: October 2017)
19. Medium/Heavy-Duty, On-Road Natural Gas Engine Research and Development
    (expected posting date: October 2017)

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

    (open for proposal by April 27, 2018)

26. Earth Science Applications: Health and Air Quality

    (open for proposal by Nov. 3, 2017)

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

    (open for full proposal, April 27, 2018)

NIH

National Institute of Environmental Health Sciences

28. Environmental Health Sciences Core Centers

    (open for proposal by April 17, 2018)

Office of Behavioral and Social Sciences Research

29. Mobile Monitoring of Cognitive Change

30. Intensive Longitudinal Analysis of Health Behaviors: Leveraging New Technologies to Understand Health Behaviors

    (open for proposal by Oct. 5, 2017)