Announcement:
Internal Idaho NSF EPSCoR Seed Funding Opportunity

Apply Here!

NSF EPSCoR Research Infrastructure Improvement (RII) Track-1:
Idaho Community-engaged Resilience for Energy Water Systems (I-CREWS)
Award OIA-2242769

Release Date:
April 15, 2024

I-CREWS Seed Funding Program

I-CREWS Overview

This Seed Funding program is part of Idaho's multi-year (2023-2028) statewide National Science Foundation (NSF) Established Program to Stimulate Competitive Research (EPSCoR) Track-1 Research Infrastructure Improvement (RII) award, "Idaho Community-engaged Resilience for Energy-Water (E-W) Systems (I-CREWS)." The project is highly aligned with Idaho's *Higher Education Research Strategic Plan*.

Here the term Energy-water (E-W) Systems refers to the intersection between the systems, consisting of the physical infrastructure, data/information/knowledge, the people, laws and policy, as well as the fuel and water that flows or is in reserve. Includes interdependent power and water systems tied to the physical infrastructure for generation, transmission, distribution and use of power and water along with governance and management practices, knowledge flows, and effects on end users.

I-CREWS represents a statewide collaborative community-engaged academic research and education program aligned with areas supported by NSF. Participants work collaboratively across institutions on basic research; integration of science disciplines; integration of research, education, and workforce development; and fostering integration of science, communities, and stakeholders.

Vision

Idaho envisions generating world-class research competitiveness and capacity in collaboration with resilient urban, rural, and Tribal communities that can adapt to climate, population, and technological changes impacting E-W interactions.

Mission

The I-CREWS mission is to co-create research and solutions that transform the relationship between research, education, technologies and Idaho's urban, rural and Tribal communities.

Aim

The aim of the project is to co-develop an understanding of the complex interactions of energy-water systems through characterizing, modeling, and envisioning alternative futures that are responsive to community needs and resilience.

I-CREWS leverages and builds linkages among existing areas of academic research strengths in the geosciences, biological sciences, social sciences, and resilience science. I-CREWS also expands Idaho's nascent research capacity in computational modeling, machine learning and artificial intelligence, to provide analytical outcomes to proactively address the impacts of climate, population, and technological change on energy-water (E-W) systems. Partnerships outside of academia involve a wide range of entities, from state and federal agencies, public and private utilities, Idaho National Laboratory, to Tribal nations.

Using a range of Idaho's communities, landscapes, and watersheds as research testbeds, the research areas of I-CREWS are aligned with collaborative efforts to:
- characterize E-W configurations for various resilience strategies,
- model E-W configurations and their resilience,
- develop alternative futures (scenarios) for E-W trajectories and resilience.

Education (ED), Workforce Development (WFD), and Broadening Participation (BP) initiatives are all aligned with these research areas and community-engagement.

Research Focus
I-CREWS will increase our empirical and theoretical understanding of how social systems, such as governance dynamics and local knowledge, can inform behaviors, trade-offs, and E-W futures in relation to climate, population, and technological change.

The motivating research hypothesis for I-CREWS is that communities undergoing changes in their E-W systems can be characterized at different scales to determine patterns of multisystemic resilience to change. Thus, E-W system resilience will be more effectively and equitably evaluated, shaped, and implemented by incorporating co-produced local knowledge, and governance dynamics with advanced data analysis and modeling of stressors. Two cross-cutting research questions will guide the research and the capacity-building:

1. What role do trade-offs and changes in E-W systems, including storage, efficiency/conservation, local knowledge, and governance dynamics, play in determining resilience strategies or options to climate-driven, population, and technological change?

2. How does incorporating diverse ways of knowing, community engagement, and advanced modeling improve the parameterization of pathways associated with more equitable and resilient E-W futures?

The project's approaches will be applied in Idaho communities identified as E-W resilience testbeds for this work. These currently include: Coeur d'Alene Reservation, Boise/Treasure Valley, Fort Hall Reservation, McCall/Upper Payette, Twin Falls/Magic Valley, and Teton Valley, with the first three areas emphasized in the early years of this I-CREWS project.

Purpose of Seed Funding

I-CREWS will support a robust Seed Funding program guided by external peer merit review. This mechanism will provide the program the ability to quickly respond to new opportunities and/or pursue high-risk, high-impact research. It is also an important mechanism to broaden participation of institutions, researchers, and students from underrepresented groups. Two award sizes (Small and Large) will be further grouped into two investment categories (i.e., Types), all directly related to E-W challenges.

Project Type

The first category is **Convergence Research and Education**, open to any qualifying teams or research partnerships in Idaho. This category will include projects that are driven by a specific and compelling problem and demonstrate deep integration across disciplines; involvement of non- academic collaboration will be optional (meaning that the research is not required to be co-produced directly with communities).

The second category is focused on **Community-engaged Collaboration (CEC)** to support *co-produced research and education outcomes with communities* (including but not limited to Tribal representatives) through integration and co-production using local (e.g., but not limited to, Indigenous) knowledge.

At least one (Large or Small) CEC category award will be granted in each of Yrs 1-3 or respective funds will be held until such awards can be made. Applicants must clearly identify the size and category of project for which they are seeking support; *it may be either category, but not both*.

Project Size

In Year-1 of I-CREWS (August 2023-July 2024) only applications for Small Seed Funding will be accepted.

Small Seed Funding (<$55k, <1 year performance period). These awards are expected primarily to be led by early-career researchers initiating research directly related to E-W Systems. Established or mid-career researchers seeking to expand or apply their expertise into a new E-W research direction will also be eligible. Multi-institutional collaboration will be prioritized, but not required due to the small size of the award. Funding may support personnel, summer salary, travel, and/or other resources needed to generate preliminary data and/or explore high-risk, high-reward E-W activities.

Large Seed Funding ($165k, <2 year performance period) will be offered in future rounds of I-CREWS Seed Funding announcements, with the first anticipated in Fall 2024.

For this April 2024 announcement, Small Seed Funding projects that can be initiated during summer 2024 are strongly encouraged. All projects must begin no later than August 2024.

In all cases, the award dollar limits stated here are Direct Costs. Indirect funds will be provided to the recipient institutions above and beyond the funding limits specified here. Seed Funding is not intended to support or supplement the routine ongoing activities of the I-CREWS award, nor is it intended to substitute for external NSF individual investigator funding.

Seed Funding must serve as a catalyst for the development and submission of future proposals for additional external funding from NSF or other external sources. Awards should also result in conference presentations and publication of papers in peer reviewed journals, and/or other data products or innovations appropriate to the scope of work.

Eligibility

Seed Funds are awarded to organizations, not to individuals. All applicants serving as lead on a Seed project must represent an institution eligible to receive and capable of managing federal NSF funds. Any researcher, faculty member (research, tenure-track, or tenured) or equivalent at an Idaho university, college, Tribal government, or non-profit organization may submit a proposal. Awards will only be granted to entities located in Idaho, and participants and collaborators also must be located in Idaho.

Eligibility for participation will include individuals currently involved in I-CREWS as well as those not yet involved. To receive Seed awards, an applicant must demonstrate synergy with ongoing I-CREWS efforts, including those to broaden participation, foster community-engaged or convergence research, and foster inter-institutional collaboration. Prior or current involvement in the NSF EPSCoR RII Track-1 I-CREWS project is NOT a prerequisite for participation in this Seed Funding program. Individuals not yet involved in I-CREWS are strongly encouraged to contact I-CREWS leads at the respective institutions to explore synergies. Postdocs are eligible to serve as principal investigators to gain project leadership experience; if so, postdocs must provide a letter of commitment to oversight by a faculty member. Early-career faculty involved in I-CREWS are encouraged to apply or to serve as collaborators on Seed Funding proposals.

Projects must be related to the theme of the I-CREWS award, as articulated in the NSF proposal and the I-CREWS Strategic Plan. Proposers are encouraged to read more information found at: https://idahocrews.org/

Individuals may be involved in any number of Seed Funding proposals; however, they may serve as the lead investigator on only one proposal per application deadline. In addition, investigators may not serve as lead on more than one concurrent, active I-CREWS Seed Funding award. Lead investigators on an active I-CREWS seed funding award may submit proposals in response to this announcement if the start-date of the proposed project does not overlap with the current award performance period. Investigators with active I-CREWS Seed funding or prior I-CREWS Seed Funding awards who have not met the expectations of a Seed Funding awardee (see Expectations of Awardees below) are not eligible to apply for new funding.

What Seed Funds Will Support

Seed Funds are intended to catalyze projects in emerging areas that are clearly related to (but do not duplicate) the research and education theme of the current EPSCoR RII Track-1 I-CREWS award. Proposers should clearly identify the areas to be investigated and their relevance to and synergy with the I-CREWS project as a whole.

Funding may support any category of expense normally supported by NSF. This includes up to one month of summer salary for involved faculty (if within overall "2/9 rule for NSF support"), as well as support for postdocs, technicians, graduate research, and/or undergraduate students. All expenditures must comply with expectations for federal NSF awards and Idaho EPSCoR policies.

Proposal Timeline and Submission

The program is administered by the Idaho EPSCoR Office. Proposals will not be accepted   at other times outside of advertised due dates. Awarded projects are expected to start no later than start of Fall Semester 2024. All awarded funds must be fully expended by the end of the designated Small Seed Award 1-year performance period (e.g., July 2025). Depending on the number and nature of Seed proposals, the number of awards anticipated in response to this April 2024 announcement are:
- Small Awards: at least 1, but not more than 4.
- Large Awards: None will be sought or awarded in this first round of I-CREWS Seed Funding; the first announcement for Large Award proposals is anticipated in Fall 2024.

PIs at any institutions *other than the U of I* should route proposals through their Office of Sponsored Programs or similar prior to submission to   Idaho EPSCoR in the Piestar RFx system.

Proposals should be submitted HERE as a single complete PDF document with any graphics embedded in the document. The deadline to submit your proposal is: May **30, 2024.**

⚠️ IMPORTANT! Only proposal submissions submitted via Idaho EPSCoR Piestar RFx system will be considered for funding. PDF attachments to email will not be accepted.

Proposers will be notified of award decisions and provided written feedback approximately three weeks after submission (e.g., June 14, 2024)

Expectations of Awardees

Management. The lead Investigator will be responsible for managing the activities of the award including logistics, gathering participant information, overseeing finances, providing information for evaluation and assessment, and submitting the final report. Awarded funds must be expended during the specific performance period of the Seed Funding project.

Reporting. Leads of Seed Funding awards must provide a brief report of the Seed Funding efforts and outcomes for quarterly internal I-CREWS meetings, *ad hoc* research output/product updates, and for each annual report to NSF (prepared in April). The lead and all participating individuals will need to report evidence of productivity beyond the performance period such as: external proposal submissions related to the Seed Funding award and the result or success of such proposals; relevant presentations, publications, and data products.

Evaluation. Individuals and teams funded by these awards are expected to demonstrate productivity and success in winning competitive external research funding. An External Evaluator will periodically track and report on progress toward the research competitiveness objectives. Participants are expected to establish brief evaluation plans and metrics at the start of the award, as well as respond to evaluation questionnaires and inquiries during and after the performance period of Seed Funding awards.

Faculty Development. All awardees are encouraged to be engaged in proposal development training and/or to utilize proposal development services offered through the WFD component of I-CREWS or their respective institutions. *This is a requirement for Small Seed Funding awardees.*

Funding Source Acknowledgement. Acknowledgement of the funding source is required on all related products and publications and should be formatted such as: "This product was made possible by the NSF Idaho EPSCoR Program and by the National Science Foundation under award number OIA-2242769."

Proposal Preparation

Seed Funding proposals must include the information requested below. A maximum of 5 pages of project description are allowed (excluding the title page and summary; items I-II) to describe the project, using a font size and style that is compliant with NSF proposal guidelines. Items IV through VII below do not count against the 5-page limit, but section page-limits listed below for each element still apply.

All proposals must clearly identify in the project description: 1) how proposed work relates to I-CREWS goals; 2) how the proposed work falls outside of or differs from existing funded I-CREWS activities; 3) how the proposal will support faculty, postdoc, student or other human resource development; and 4) how the work will be leveraged in future proposals (i.e., how is it a "seed"). If led by a postdoc, a letter of commitment from a faculty mentor to support the research integration and professional development of the postdocs must be included.

Component	Max pg.	Content
I. Title Page	1 p.	- Project Title *Please indicate one of each: Small or Large; Community Engaged or Convergence R&E.* - Lead Investigator, including title/rank, affiliation, and contact information - Co-Investigator(s), including title/rank and affiliation - Project date range (start and end months)
II. Project Summary	1 p.	Summary, including statements to address Intellectual Merit and Broader Impacts as defined by NSF

III. Project Description (to include but not limited to)	5 p.	- Problem statement - Project rationale (i.e., why this, why now, how this will advance I-CREWS related research/education) - Scientific questions/hypotheses addressed - Proposed objectives, approach, and activities - Role of participating investigators, collaborators, and institutions - A timeline of key activities, outputs/deliverables, and outcomes - Statement of anticipated impacts
IV. Bio	3 p. ea.	NSF-compliant 3-Page Biographical Sketch for each investigator
V. References Cited	2 p.	References may be provided in any commonly accepted citation style
VI. Budget*	1 p.	NSF-compliant Budget Justification narrative
	1 p.	Budget table or spreadsheet, using NSF budget categories *(optional templates available by contacting Tami at tnoble@uidaho.edu)*
VII. Letters	3 p. total	Letters of collaboration (per NSF guidelines) are allowed, yet optional

Budget Guidance: Please use the following information when developing budgets.

Fringe Rates Projected FY25	UI	BSU	ISU
Faculty	31.7%		31.7%
Faculty Summer Salary	31.7%	20.52%	31.7%
Professional/Faculty/Exempt	-	20.52% *	
Professional/Exempt			39%
Exempt/Classified	40.10%	-	-
Classified	-	21.64% *	60%
Students/GTA/FT	2.00%	4.00%	2.5%
Summer Students	2.00%	9.00%	2.5%
Temp Help/Part-time	10.10%	9.00%	9.7%
Yearly Health Insurance	-	$13,000	

*Add Yearly Health Insurance

In-State Tuition increased 5% for Fall 24	UI	BSU	ISU

Spring 2020 Full-time 9 credits+	$5,538	$5,505	$5,916
Student Health Insurance	$1,134	-	-
One Summer Credit	$615	$422	$592

M.S. student, ID EPSCoR minimum 12-month salary: $24,000
Ph.D. student, ID EPSCoR minimum 12-month salary: $28,000
New Postdoc, ID EPSCoR minimum 12-month salary: $60,000

Proposal Review Process

Seed Funding awards will be determined by the I-CREWS Leadership Team (LT) upon receiving input and ranking of proposals based on merit review, and input from other internal and external experts. The LT will strategically represent the statewide RII Track-1 award, as Seed Funding is allocated to respond to new opportunities and potentially transformative research as envisioned by NSF EPSCoR.

Review may include content experts at any of Idaho's research universities who are not involved in the I-CREWS project. External experts will include but are not limited to Project Advisory Board (PAB) members and/or Expert Advisors who may or may not be involved in the program. In future years, Large Seed Funding requests will be reviewed by at least one content expert who is external to the State and not a member of the PAB.

A written summary of the feedback from proposal peer-review and a brief explanation relative to the criteria for the award decision will be provided to each Seed proposal lead.

Proposal Review Criteria

To the extent practicable with an abbreviated proposal format, I-CREWS Seed Funding requests will be judged in accordance with general NSF expectations stated in the RII Track-1 Program Announcement and rephrased below.

Intellectual Merit and Broader Impacts

Reviewers will be asked to consider what the proposers want to do, why they want to do it, how they plan to do it, how they will know if they succeed, and what benefits could accrue if the project is successful.

Specifically, the following elements will be considered in the review:
1. What is the potential for the proposed activity to:
    a. Advance knowledge and understanding within its own field or across different fields (Intellectual Merit); and
    b. Benefit society or advance desired societal outcomes (Broader Impacts)?
2. To what extent do the proposed activities suggest and explore creative, original, or potentially transformative concepts?
3. Is the plan for carrying out the proposed activities well-reasoned, well-organized, and based on a sound rationale? Does the plan incorporate a mechanism to measure success?
4. How well qualified is the individual, team, or organization to conduct the proposed activities?

Additional Seed Funding Review Criteria

Reviewers for the Seed Funding competition will also consider the following specific aspects of Intellectual Merit and Broader Impacts important for NSF EPSCoR awards, as applicable.

Alignment – is the request aligned and responsive to the nature of the Seed Funding program described in this announcement? To what degree do the proposed activities advance the elements of the respective type of I-CREWS Seed Funding opportunity? How well is the project aligned with I-CREWS research and education topics and goals?

Research Capacity – What is the potential of the project to increase the capacity of the participating organizations and capability of project participants to propose and implement research activities in the future? *Jurisdictional Impacts* (for all Seed Funding) – How do the proposed activities promote organizational connections and linkages within the jurisdiction, as well as between private, non-governmental, and public sectors? How well does the project leverage existing resources from I-CREWS or other projects? Is the project outcome-oriented, with clear deliverables, outcomes, and anticipated impacts?

Workforce Development (especially for Large Seed Awards) - What is the potential to enhance research and education capacity through the recruitment, mentoring, and professional development of students, junior researchers, and faculty (including early career)? What novel and effective ways are proposed to broaden the participation of women and minorities underrepresented in STEM (also: persons with disabilities, the economically disadvantaged, rural populations, or first-generation college students), especially in the proposed area(s) of research? How well will the project enhance participation and research capacity at non-research intensive and minority-serving institutions?

NSF EPSCoR Research Infrastructure Improvement (RII) Track-1 Project Information

NSF Award Search for I-CREWS
I-CREWS website
I-CREWS Proposal Project Description
I-CREWS Strategic Plan
Idaho EPSCoR
NSF EPSCoR RII Track-1 Announcement

Questions?

Tami Noble, Program Manager/Finance Director, Idaho EPSCoR
Email: **tnoble@uidaho.edu** Phone: 208-885-5842