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:
September 24, 2024

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V5.1

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*.

I-CREWS Seed projects must address topics at the intersections of Energy-Water systems; proposals that fail to do so will be returned without review. 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. This may include, for example, 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. Seed projects must focus on research and education activities of importance to Idaho and that are predominantly located within Idaho.

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 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 I-CREWS 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) are further grouped into two investment categories (i.e., Types), all of which must be directly related to E-W systems 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 **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 the first three application rounds (2024-2026) 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*. CEC project proposals are highly encouraged.

Project Size

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). These awards will support collaborative, multi-disciplinary, multi-institutional (2 or more Idaho Universities required) E-W research, and will be led by early or mid-career faculty members. Funding will support graduate student research, postdoctoral fellows, faculty summer salary, or technical personnel. Co-mentoring, co-advising, and co-supervision will be encouraged, as will in-state student-exchanges.

For this September 2024 announcement, Small Seed Funding projects that can be initiated during Spring or Summer 2025 are encouraged. All awarded projects resulting from this announcement must begin no later than August 2025.

In all cases, the award dollar limits stated here are Direct Costs. Seed proposal budgets should only account for direct costs; no indirect costs should be calculated. Indirect funds will be provided automatically by Idaho EPSCoR 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 Seed proposal. Awards will only be granted to entities located in Idaho, and funded 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.
Postdocs are eligible to serve as principal investigators on Small Seed projects 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. This requires that seed projects focus on E-W Systems as defined above. Proposers are encouraged to read more information found at: https://idahocrews.org. Individuals not yet involved in I-CREWS are strongly encouraged to contact I-CREWS leads at the respective institutions to explore synergies.

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. Projects must clearly address Energy-Water systems topics. 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 the 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 2025. All awarded funds must be fully expended by the end of the designated performance period corresponding to the award size (e.g., 1 year or 2 years). Depending on the number and nature of Seed proposals, the number of awards *anticipated* in response to this September 2024 announcement are:

- Small Awards: at least 3, but not more than 7.
- Large Awards: at least 1, but not more than 3.
- CEC awards: at least 2

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 *12:00 pm Pacific Time,* **January 16*, 2025.***

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., February 10, 2025). The timing of award notifications is intended to allow Seed award PIs (particularly of Large Seed awards) to recruit new graduate students for Summer/Fall 2025 if desired.

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 each 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. Under the guidance of an External Evaluator, Idaho EPSCoR 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 is aligned with I-CREWS goals; 2) how the research or education addresses Energy-Water systems in Idaho; 3) how the proposed work supplements and differs from existing funded I-CREWS activities; 4) how the proposal will support faculty, postdocs, students or other human resource development; and 5) 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.

I-CREWS Seed Funding application formatting and page length requirements

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 and Energy-Water systems relevant 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
(see next page)	1 p.	● Budget table or spreadsheet, using NSF budget categories for Direct Costs only *(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 3%+	**UI**	**BSU**	**ISU**
Faculty	32.7%		32.7%
Faculty Summer Salary	32.7%	21.14%	32.7%
Professional/Faculty/Exempt	-	21.14%*	
Professional/Exempt			40.17%
Exempt/Classified	41.3%	-	-
Classified	-	22.29%*	61.8%
Students/GTA/FT	2.06%	4.12%	2.58%
Summer Students	2.06%	9.27%	2.58%
Temp Help/Part-time	10.4%	9.27%	10%
Yearly Health Insurance	-	$1,339	

*Add Yearly Health Insurance

In-State Tuition increased 5% for Fall 25+	**UI**	**BSU**	**ISU**
Fall 2025 Full-time 9 credits	$5,679	$5,564	$6,049
Student Health Insurance	$1,155	-	-
One Summer Credit	$631	$426	$606

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 internal and external experts. LT members involved in Seed Proposals in any direct way will be recused from the review and decision process. 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 may or may not be involved in the I-CREWS project. External to Idaho 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. Large Seed Funding requests will be reviewed by at least one content expert who is external to the State, not involved in I-CREWS nor 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 with I-CREWS aims and responsive to the nature of the Seed Funding program described in this announcement? To what extent do projects address Energy-Water systems and the intersection of energy and water (not just one or the other). To what degree do the proposed activities advance the elements of the respective Type of I-CREWS Seed Funding award? 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? How strong are the apparent opportunities for future funding related to the Seed award?

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 and Broadening Participation (especially for Large Seed Funding) - 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

Open Forum Seed Funding Information Sessions

For more information about the I-CREWS Seed Funding program, please register here to attend optional online Seed Funding Open Forums at one or more of the following times:

Tuesday, October 8, 10:00 am PT = 11:00 am MT

Wednesday, October 23, 1:00 pm PT = 2:00 pm MT

Monday, October 28, 10:00 am PT = 11:00 am MT

Thursday, November 7, 2:00 pm, PT = 3:00 pm MT

Tuesday, December 3, 10:00 am PT = 11:00 am MT

Direct Questions about the program to:
Tami Noble, Program Manager/Finance Director, Idaho EPSCoR
Email: **tnoble@uidaho.edu** Phone: 208-885-5842