



December 18th, 2024

Request for Proposals for the FY 2025 USGS Section 104(b) Program

The Idaho Water Resources Research Institute (IWRRI), through the United States Geological Survey (USGS) Section 104(b) grant program, invites proposals from faculty to support water resources research and outreach activities across the State of Idaho. These one-year grants are expected to address research specific to Idaho's water-related needs and support student or postdoctoral research and. We especially encourage early career faculty applicants and will accept post-doctoral applicants with PI partnership approval.

Program Objectives

Section 104(b) of the Water Resources Research Act (WRRRA) requires the Institutes or Centers to:

- (1) Plan, conduct, or otherwise arrange for applied and peer reviewed research that fosters:
 - Improvements in water supply reliability.
 - The exploration of new ideas that
 - address water problems; or
 - expand understanding of water and water-related phenomena.
 - The entry of new research scientists, engineers, and technicians into water resources fields.
 - The dissemination of research results to water managers and the public.
- (2) Cooperate closely with other colleges and universities in the State that have demonstrated capabilities for research, information dissemination, and graduate training to develop a statewide program designed to resolve State and regional water and related land problems.
- (3) Cooperate closely with other institutes and other organizations in the region to increase the effectiveness of the institutes and for the purpose of promoting regional coordination.

Priority Research Areas

Proposals are encouraged to fit within one or more of the Water Resources Research Act (WRRRA) priority research areas (Appendix A).

Funding and Budget Guidelines

- **Funding Level:** Up to \$25,000 per project, contingent on Congressional appropriation.
- **Matching Requirement:** Each federal dollar requested must be matched with a non-federal dollar (1:1). Proposals leveraging existing research or securing non-university matches (e.g., state agencies, local governments, private entities) will receive priority.
- **Indirect Costs:** No indirect costs may be charged to federal project funds. However, indirect costs may be included as part of the matching requirement.
- **Project Duration:** Sep 1st, 2025-Aug 31st, 2026
- **USGS budget requirements** are provided in **Appendix C**

Submission Details

- **Proposal Submission Deadline:** February 24, 2025, by 5:00 PM Pacific Time
- **Format:** Submit as a single PDF file using Attachment 1: (USGS104B_Proposal_Template_FY2025_IWRRRI) to this announcement. (also found on the <https://www.uidaho.edu/research/entities/iwrrri>) website under Opportunities.
- **Submit to:** Email proposals to: mawolf@uidaho.edu **File name:** 2025_IWRRRI_Proposal_<PI Name>_<University Name>

Notification and Additional Requirements

- **Notification Date:** April 2025
- **Cost-Share Commitments Deadline:** April 17, 2025.
- Additional Requirements submitted to IWRRRI by **April 17, 2025** (ISU & BSU):
 - UI Subrecipient Commitment Form

Review process

Applications will be reviewed by a review panel assembled by IWRRRI. Projects will be reviewed based on meeting the principal objectives of the 104b program using a matrix based on the following review criteria:

- 1) Addresses WRRRA priority research area (15%)
- 2) Addresses research goals relevant for Idaho (15%)
- 3) Scientifically valuable with clear goals and objectives (20%)
- 3) Supports undergraduate/graduate student, or post-doctoral water research. (20%)
- 5) Provides products and mechanisms for information and data transfer. Engagement with managers, water users, or community members is encouraged. (20%)
- 6) Project includes a clear and detailed budget (5%)
- 7) Qualifications of the research team (5%)

Final Report Requirements

PIs are responsible for meeting all reporting and compliance requirements. Successful applicants must submit a final report summarizing: Findings for the IWRRRI newsletter, publications, student involvement, and presentations developed from the award.

Contact Information

For questions or further details, please contact:

Meg Wolf

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Appendix A: Idaho Water Research Needs

The priority research topics for this funding cycle are categorized by USGS Water Resources Research Act **Priority Research Areas**. The second-tier priorities have been identified by IWRRI's partners as **Idaho specific research goals**. **Example opportunities** summarize a few specific research topics that can be addressed but are not required to be successful.

WRRRA/IWRRI Priority Research Areas

1. Water Scarcity & Availability

"Drivers and outcomes of water availability and demand are understood and addressed to sustain human and environmental needs."

- **Idaho-Specific Goals:**
 - Improve hydrologic water balance modeling with a focus on evapotranspiration (ET) in both irrigated and non-irrigated systems.
 - Identify snowpack variability and implications for water supply.
 - Enhance understanding of groundwater resources, including recharge, to enable effective management and governance.
 - Quantify agricultural consumptive use and opportunities for water conservation and efficiency.
- **Example Opportunities:**
 - Conduct groundwater characterization and modeling in under-studied regions of Idaho.
 - Quantify irrigation efficiency and crop consumptive use over time, including urbanization impacts on runoff and recharge.
 - Quantify spatial and temporal variability in managed recharge in Critical Groundwater Areas

2. Water-Related Hazards & Climate Variability

"Extreme hydrologic events and the effects of climate variability are understood and addressed to enhance community preparedness and resilience."

- **Idaho-Specific Goals:**
 - Develop future scenario planning under varying climatic conditions.
 - Model flood/drought impacts on societal factors like food production, water quality, and quantity.

3. Water Quality

"High-quality water that is safe and accessible is ensured to sustain humans and ecosystems."

- **Idaho-Specific Goals:**
 - Enhance water quality monitoring and modeling to mitigate harmful outcomes and minimize health risks from emerging contaminants.
- **Example Opportunities:**
 - Conduct research to facilitate prediction of harmful algal blooms (HABs) in Idaho's waterbodies.

- Quantify impacts of land application from sewage treatment plants.
- Monitor post-restoration water quality to refine best practices for future rehabilitation sites.
- Generate research related to life cycle and transfer of PFAS and forever contaminants in sole source aquifers.

4. Water Policy, Planning & Socioeconomics

"Policy, planning, and socioeconomics are integrated and applied toward the comprehensive management and governance of water resources."

- **Idaho-Specific Goals:**
 - Translate hydrological research into actionable policies for conjunctive management and surface and groundwater planning.
- **Example Opportunities:**
 - Apply existing hydrologic models (e.g. MODFLOW) to new basins for management insights.
 - Evaluate existing and potential advances in Idaho's Water Market
 - Quantify economic impacts of water curtailment

5. Ecosystem and Drainage Basin Functions

"Ecosystem and drainage basin functions are conserved to support and revitalize ecosystem services."

- **Idaho-Specific Goals:**
 - Advance modeling capacity to reflect ecosystem services and system-wide hydrological functions.
- **Example Opportunities:**
 - Develop tools that integrate metrics for timing of fish migration into streamflow forecasting.
 - Incorporate land-use changes in headwaters (e.g., logging or mining) into downstream water quality models.

6. Water Technology & Innovation

"State-of-the-art water technology and innovation are advanced to meet societal and ecosystem needs."

- **Idaho-Specific Goals:**
 - Build water data capacity and integrate innovative tools.
- **Example Opportunities:**
 - Employ novel tools like remote sensing, statistical modeling, and artificial intelligence for water management.
 - Statistical analyses of state monitoring networks of water level and water quality programs (e.g. IDWR, IDEQ, ISDA). Quantify the most effective spatial distribution in relation to well density and data gaps, and frequency of monitoring.

Appendix B: FOCUS CATEGORIES

ACID DEPOSITION	ACD
AGRICULTURE	AG
CLIMATOLOGICAL PROCESSES	CP
CONSERVATION	COV
DROUGHT	DROU
ECOLOGY	ECL
ECONOMICS	ECON
EDUCATION	EDU
FLOODS	FL
GEOMORPOLOGICAL PROCESSES	GEOMOR
GEOCHEMICAL PROCESSES	GEOCHE
GROUNDWATER	GW
HYDROGEOCHEMISTRY	HYDROGEO
HYDROLOGY	HYDROL
INVASIVE SPECIES	INV
IRRIGATION	IG
LAW, INSTITUTIONS, AND POLICY	LIP
MANAGEMENT AND PLANNING	M&P
METHODS	MET
MODELS	MOD
NITRATE CONTAMINATION	NC
NON POINT POLLUTION	NPP
NUTRIENTS	NU
RADIOACTIVE SUBSTANCES	RAD
RECREATION	REC
SEDIMENTS	SED
SOLUTE TRANSPORT	ST
SURFACE WATER	SW
TOXIC SUBSTANCES	TS
TREATMENT	TRT
WASTEWATER	WW
WATER QUALITY	WQL
WATER QUANTITY	WQN
WATER SUPPLY	WS
WETLANDS	WET

Appendix C: Budget Requirements specified by USGS

1. **Tuition:** must show more details than just the total cost. Include: number of students, time or number of semesters, rate/semester, & total amount. Show basis for cost and how total cost is reached.
2. **Supplies:** show name of item, amounts per unit, number of units, cost per unit, and total item cost. We cannot fund costs described as miscellaneous costs.
3. **Equipment:** we now require a manufacturer's quote for any equipment that cost \$5,000 or more. This is needed so we can vest the equipment with the award.
4. **Services or consultants:** must include rate, hours, and total cost for consultants. For laboratory analysis, must show type of analysis, cost/sample, number of samples, and total cost.
5. **Travel:** Travel requests should be for planned travel that is necessary to conduct the project. Travel funds should only be for those working on the project. For conferences, applicant must show the conference name (not abbreviation), date, and location of conference. All travel must take place during the award budget period. Budget details must include a separate breakdown for each trip, and include the destination, number of personnel, number of days, per diem rate, lodging rate, mileage and mileage rate or airfare (whatever is applicable). All costs must be explained. Gratuities are not allowable costs.
7. **Other Direct Costs:** all costs must be explained. Budget cost details include hours or rates, number of samples, total cost per item. Lump sums that are not explained cannot be funded.
8. **Indirect Costs:** If indirect costs are shown in matching funds, you must provide the current indirect rate agreement in the application package. If subawards include indirect costs, the subaward recipient's current indirect rate agreement must also be included in the application package.
9. **Costs that are not allowed:** gifts, gift cards, incentives, souvenirs, gratuities, catering, and food outside of per diem.
10. **In-kind services used as match:** Applicants must show rates and hours or similar details to support the amount. Cannot just say \$4,000 in matching funds provided from xxx. Must show how amount is reached and how it will be used.