

# USGS/NIWR FY2024 Nationally Competitive Grants

Proposal Preparation Guidance

April 23, 2024



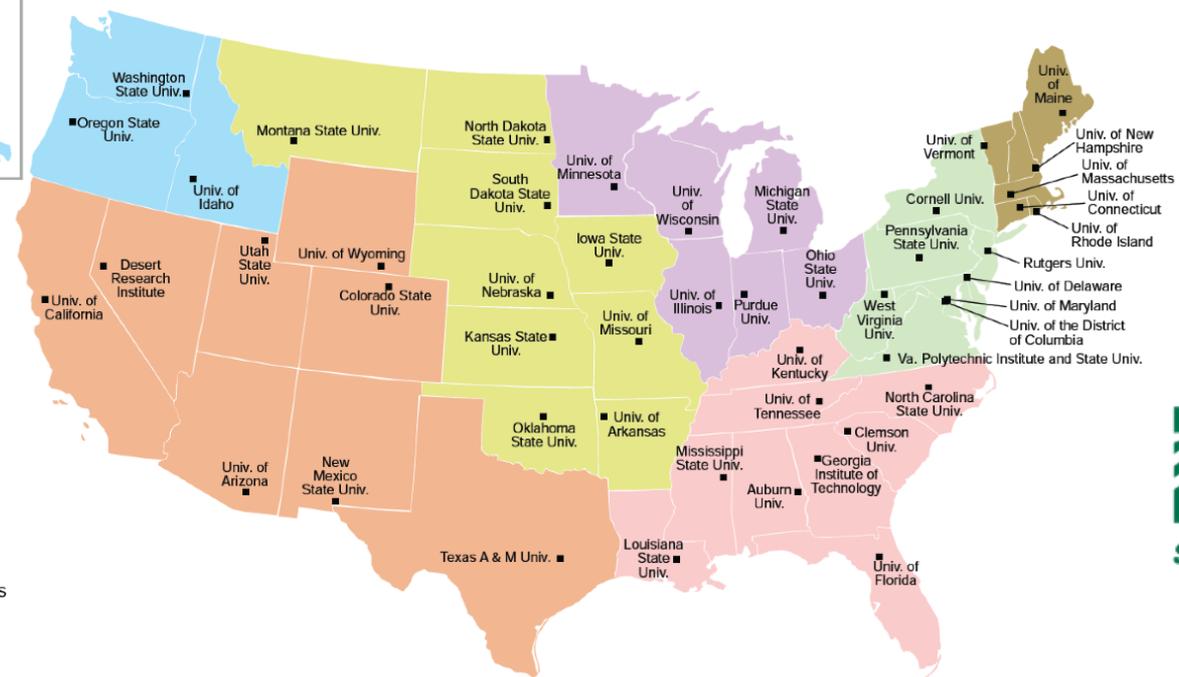
Institute of Water Research  
MICHIGAN STATE UNIVERSITY

Water Resources Center  
UNIVERSITY OF MINNESOTA



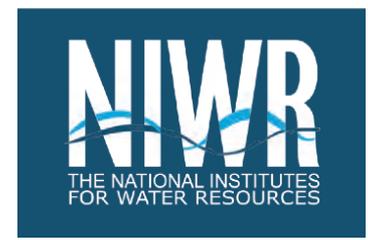
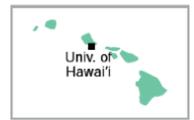
# Today's webinar:

- Introduction to NIWR and state water centers/institutes
- Eligibility and how to apply
- FY2024 104(g) grants: General, AIS and PFAS – including research priorities
- Overview of RFPs with emphasis on budget criteria
- USGS collaboration
- Self selecting breakout rooms for each program (General, PFAS, AIS)



### Regions

- Great Lakes
- Great Plains
- Mid-Atlantic
- New England
- Oceania and Islands
- Pacific Northwest
- Powell Consortium
- South Atlantic-Gulf



# Eligibility

- Any investigator at an accredited institution of higher learning
- Investigators in each state must submit through the designated Water Resources Research Institute in that state



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# How to apply:

- Work with your state WRRRI contact
- Great Lakes:
  - IL - Amy Weckle
  - IN - Laura Esman
  - MI - Jeremiah Asher
  - MN - Sarah Roth
  - OH - Linda Weavers and John Lenhart
  - WI - Melissa Boyce and Jennifer Hauxwell
- Application requirements may differ in each state



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# Timeline

|  |   |
|--|---|
| <b>April 18</b>  | USGS released RFP   |
| <b>~Mid May</b>  | Proposal submission deadline to WRRRI   |
| <b>May 30</b>  | WRRRI proposal submission deadline to grants.gov <b>by your state institute</b> |
| <b>Aug 15</b>  | USGS announces funding decisions  |
| <b>Dec 16</b>  | Money disbursed to WRRRI awardees (delays always possible)                      |
| <b><i>Other deadlines may include (state dependent):</i></b> |   |
|  | Notice of Intent (NOI) submitted to WRRRI                                       |
|  | Submission of budgets and budget justifications                                 |

# FY2024 104(g) Nationally Competitive Grants

- General
- Aquatic Invasive Species (limited to Upper Mississippi River Basin)
- Per- and polyfluoroalkyl substances (PFAS) Grants

All three programs focus on:

- water problems and issues of a regional or interstate nature beyond those of concern only to a single state, and
- concerns related to specific program priorities identified in each RFP

## 104(g)-General, AIS, PFAS common objectives

- Promote the dissemination and application of the results to the scientific community and to the general public.
- Assist in the training of scientists in relevant water-related fields. Proposals that include a strong educational component (student support) are encouraged, as are those from early-career faculty.

**Note:** None of the federally appropriated WRRRA monies can be used for federal salary, travel, or any other expenses.

## 104(g)-General additional objective

- Promote collaboration between the USGS and university scientists on significant national and regional water-resource issues

## 104(g)-General additional monies

- Up to \$40,000/project of internal USGS funds (non-WRRA appropriated) are available to fund salary and other expenses for a USGS co-PI.

**Note: in FY23: 27 proposals, 7 selected**

# 104(g)-General priority #1

**National-scale evaluation of water budget:** Retrospective or predictive analyses using hydroclimate-forcing data sets, with emphasis on CONUS404, which was developed in a USGS- NCAR collaboration.

Additional guidance includes:

- Comparison of different water budget models, evaluation of relative model predictive skill and identification of specific opportunities for improvements.
- Incorporation of how uncertainty in hydroclimate-forcing propagates to water budget components.
- Evaluate scale-dependent uncertainties in water-budget predictions when using CONUS404. (e.g. How much more uncertainty at HUC12 versus HUC 8, which variables, and are specific uncertainties regional?).

# 104(g)-General priority #2

**Socioeconomics:** Integrate ongoing USGS research and data collection in order to assess socioeconomic and ecological vulnerability to compounding extreme events and develop adaptation measures. This proposed project should undertake new research (e.g., Water Use and Social and Economic Drivers Program) to understand the vulnerability of urban (e.g., trans-basin diversions), agricultural (e.g., reservoir management), and ecological (e.g., endangered species) water-use sectors to drought and compounding hazards such as wildfire.

## Additional guidance includes:

- Qualitative techniques to develop parameters or metrics for feedback inputs into hydrologic models (e.g. surveys/interviews/focus groups to understand how consumers change their behaviors around water use in response to supply shortages).
- Construct utility functions of actual decision-makers/consumers that are used in the model, rather than hypothetical versions.
- Exploration of close-loop versus open-loop hydrologic models in different geographic contexts.

# 104(g)-General priority #3

**Model advancement:** Explore methods to develop new hydrologic models in a geographic area and provide information on promising modeling approaches to inform science questions specific to a region. Examples include:

Additional guidance includes:

- Natural language processing methods to assimilate and identify succinct hydrologic science issues in an area of interest, and additional AI/ML to provide a modeling pathway based on attributes of hydrologic model capacities.)
- Rapid model development methods to quickly provide information regarding potential high-value data collection and guide further model development in a given geographic area.

# Aquatic Invasive Species (AIS) additional program objective:

- Promote aquatic invasive species research as related to hydrodynamics, water quality, control technologies, and(or) human dimensions in the upper Mississippi River basin to address critical needs, including integration with ongoing USGS science and monitoring.
- Nationally competitive but **project must fall within the delineated area** of the Upper Mississippi River Basin.

**Note: in FY23: 8 proposals, 5 selected**



# Aquatic Invasive Species (AIS) Grants Priorities

- **Effects:** Research that improves our understanding of the effects of aquatic invasive species on lakes, rivers, and associated tributaries in the upper Mississippi River basin, including changes to water quantity, water quality, and ecosystem dynamics.
- **Characteristics:** Research that identifies physical, biological, and chemical characteristics of water bodies that infer resistance and resilience to the distribution, establishment, and effects of aquatic invasive species in the upper Mississippi River basin. Research is needed to better understand these interactions to guide management decisions that will improve invasive species management and result in positive effects on aquatic ecosystems.
- **Management:** Research on assessment of the detection, spread, and management of aquatic invasive species in the upper Mississippi River basin and the connections to human dimensions, both socially and economically. **Note that this does not include physical control of AIS.**

## Per- and polyfluoroalkyl substances (PFAS) additional program objective:

- Promote per and polyfluoroalkyl (PFAS) substances research as related to the nation's water quality as well as the social and(or) economic implications that might drive or be affected by PFAS. This includes integration with ongoing USGS science, monitoring, and goals, including those summarized by Tokranov and others (2021; <https://doi.org/10.3133/cir1490>).

**Note: in FY23: 34 proposals, 11 selected**

# Per- and polyfluoroalkyl substances (PFAS) Grants Priority #1

**Media-specific methods:** Enhanced methods for detection on specific media, with a clear indication of

- new or different compounds,
- new or different methodological approaches,
- lower detection levels for specific media or compounds, especially with respect to EPA health guidelines for PFOA (Perfluorooctanoic Acid) and PFOS (Perfluorooctane Sulfonate).

Media of interest include (in ranked order) (1) Tissues/plasma, (2) sediment, (3) air or interfaces, (4) water.

# Per- and polyfluoroalkyl substances (PFAS) Grants Priority #2

**Atmospheric sources:** Improved understanding of atmospheric exchange in PFAS distribution and fate. This may include methods to determine transport of PFAS to the atmosphere and to subsequent receiving waters, such as a water method that determines "new" compounds based on their likelihood to occur in the atmosphere.

# Per- and polyfluoroalkyl substances (PFAS) Grants Priority #3

**Processes oriented at molecular level:** Process-oriented research of PFAS fate, transport, and effects, with emphasis on molecular-level understanding of PFAS precursor transformation, sorption dynamics, or mechanisms of bioaccumulation and(or) biological/ecological effects, or biodegradation of PFAS along source to receptor pathways and identification of mitigation methods.

# Federal collaboration

- Collaboration with USGS or other federal scientists is encouraged
- Federal employees may not be a PI but can be a co-PI
- Federal agencies may not receive funds from these grants
  - **For General ONLY:** USGS scientists can obtain internal research funds to support their activities. A workplan & budget are needed. Funding for collaborator is from USGS, not included in proposal budget.
- Contact your state WRRRI for assistance in identifying USGS collaborators
- <https://www.usgs.gov/mission-areas/water-resources/connect>



# USGS Perspectives



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# Budget requirements

- Up to \$310,000 in federal funds can be requested under 104g-General and PFAS opportunities
- Up to \$348,000 in federal funds can be requested under the AIS opportunity
- Proposals can be for up to 3 years, budgets should be prepared in 12-month increments

# Budget requirements

- 1:1 match requirement for project as a whole AND each 12-month budget period
- Facilities and Administrative (F&A or 'indirect costs') cannot be paid from federal funds
- Foregone F&A on both federal and non-federal direct costs are used toward the 1:1 match requirement

# Example budget summary – General

| Item  | Federal | Non-federal | Total   |
|---|---------|-------------|---------|
| A: Direct costs                                     | 310,000 | 90,500      | 400,500 |
| B1: F&A on federal portion<br>(55% of A:Fed)        |         | 170,500     | 170,500 |
| B2: F&A on non-federal portion<br>(55% of A:Nonfed) |         | 49,775      | 49,775  |
| C: Total<br>(A + B1 + B2)                           | 310,000 | 310,775     | 620,775 |

**NOTE: F&A will differ for each state. Please check with your state WRRRI contact.**

# Budget requirements

- PIs can request salary from the federal funds, limited to 2 months of salary per year
- Budget Justification -
  - Justify and distinguish the federal funds requested from the match contribution.
  - Provide details
    - # of samples / testing kit capacity x number of tests and cost per test
    - Subawards to provide same level of detail
- Use the USGS provided templates

# Common Budget Issues

- Not enough details
  - Tuition: # of students, time/# of semesters, rate/semester, and total amount
  - Supplies: item name, amount/unit, # of units, cost/unit, and total cost
  - Services/consultants: rate, hours, total cost
  - Travel:
    - actual name of conference, date, location
    - trip destination, # of personnel, # of days, per diem rate, lodging rate, mileage and mileage rate or airfare (for each trip)
- Unallowed costs
  - gifts, gift cards, incentives, gratuities, catering/food
- Indirect costs -> include indirect rate agreements
- Equipment -> if over \$5,000, need a manufacturer's quote
- Subawards -> need just as much detail as in full budget

# Free advice for making proposals competitive

- Connect with other teams who are applying to the same RFP
- Very low chance of USGS funding two proposals that are similar
- Differentiating proposals will improve everyone's chances
- Diversity, equity, inclusion, and justice
- Student involvement
- Regionally or nationally important (doesn't mean you need people spread throughout the region, but that the research needs to be regionally relevant)
- Make sure you READ the review criteria from the RFP as you write your proposal
- Make sure to answer the specific priority stated in each RFP

# Breakout Rooms

## **Breakout Options** (facilitator in each)

[FY2024 USGS 104g Webinar \(youtube.com\)](#)

- Room 1: AIS
- Room 2: PFAS
- Room 3: General
- Stay in main room for high-level / budget questions

## **Questions for discussion**

- Introductions
- Topic/areas of interest - if willing to share
- Collaboration interests
- Other questions