



Submission Guidelines for  
Water Resources Research Act Program  
104G National Competitive Grants Program

104G General, Aquatic Invasive Species, and PFAS

**Intent to Submit email to IWRRRC: 5:00PM EST March 22, 2023**  
**Budget submission deadline to IWRRRC: 10AM EST April 17, 2023**  
**Proposal submission deadline to IWRRRC: 10:00AM EST April 24, 2023**

**FY2023 – 3 grant programs**

The U.S. Geological Survey in cooperation with the National Institutes for Water Resources has issued **three** different 104G requests for proposals for matching grants:

1. Water resources 104G general
2. Per-and polyflouroalkyl (PFAS) substances
3. Aquatic invasive species (AIS)

These national competitions focus on water problems and issues of a regional or national concern. Specific information about each competition is summarized below:

**1. Water Resources (\$1.86M available in funding)**

Ongoing research needs include improving and enhancing the nation’s water supply and availability, as well as promoting the exploration of new ideas that address or expand our understanding of water problems. Proposals are sought on the following specific areas of inquiry; levels of priority are not assigned, and the order of listing does not indicate the level of priority:

**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

- Emphasis on prediction of water-budget components through a variety of interpretive approaches
- Incorporation of how uncertainty in hydroclimate-forcing propagates to water budget components
- Consideration of both retrospective and projected conditions.

Rasmussen, R.M., Liu, C., Ikeda, K., Chen, F., Kim, J., Schneider, T., Gochis, D., Dugger, A., and Viger, R., 2023, Four-kilometer long-term regional hydroclimate reanalysis over the conterminous United States (CONUS), 1979-2020: U.S. Geological Survey data release, <https://doi.org/10.5066/P9PHPK4F>.

**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:

- Provide a quantifiable portfolio of risk for water-use sectors (including ecological and socio-economic)
- Develop climate futures and planning scenarios for relevant institutions: management, communities, other institutions

## 2. PFAS (\$2.79M available in funding)

The challenges and opportunities of understanding the effects of per- and polyfluoroalkyl (PFAS) substances on water resources are poorly understood, despite the real and growing effect of this group of man-made substances on water quality and the resultant exposure to humans, other organisms, and ecosystems. Research is needed to better understand these interactions and guide management decisions that will improve water resources at the regional or national scale.

Proposals are sought on the following specific areas of inquiry (levels of priority are not assigned, and the order of listing does not indicate the level of priority):

**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.

**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.

**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.

## 3. AIS (in the upper Mississippi River basin; \$1.395M available in funding)

The challenges and opportunities that link aquatic invasive species and water resources are poorly understood, despite the real and growing effect of numerous aquatic invasive species on water quality, water quantity, and aquatic ecosystems. Research is needed to better identify and understand these interactions and to guide management decisions that will help to improve invasive species management and thus reduce effects of invasive species on water resources and aquatic ecosystems at local, regional, and national scales. Proposals are sought on the following specific areas of inquiry (levels of priority are not assigned, and the order of listing does not indicate the level of priority):

- **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.

### Eligibility and other considerations

Awards are available only to Water Resources Research Institutes established pursuant to the provisions of section 104 of the Water Resources Research Act - <http://water.usgs.gov/wrri/index.php>. However, any investigator at an institution of higher learning in the United States is eligible to apply for an award through a Water Resources Research Institute. The application, with full proposal along with the SF-424 and SF-424B and budget forms, must be submitted through grants.gov (<http://www.grants.gov>) by the university at which the Institute is located.

### Intent to Submit email

We require that you submit an intent to submit email to the IWRRC **no later than 5:00PM EST on Wednesday, March 22, 2023**. The email must include:

- Which program you are applying for: 104G-General, AIS, or PFAS
- The proposed title of your proposal
- Name and email address of any Co-PI(s) with corresponding institutions

**Send Intent to Submit email to IWRRC:** email Dr. Keith Cherkauer ([cherkaue@purdue.edu](mailto:cherkaue@purdue.edu)) and Laura Esman ([lesman@purdue.edu](mailto:lesman@purdue.edu)). You will receive a confirmation email within 24 hours.

### Budget Deadline

Project budgets are required to be completed using two forms; the budget sheet (.xlsx) and the budget justification (.pdf fillable). Make sure to include project start and end dates. Both documents are due to IWRRC no later than **10:00AM Eastern Standard Time on Monday, April 17, 2023**. Please email both attachments to Dr. Keith Cherkauer ([cherkaue@purdue.edu](mailto:cherkaue@purdue.edu)) and Laura Esman ([lesman@purdue.edu](mailto:lesman@purdue.edu)).

### Proposal Deadline

Please note that the information on deadlines and submission guidelines documented in the Fiscal Year 2023 Announcements, released by the US Geological Survey, is for the staff of the Indiana Water Resources Research Center (IWRRC) and other Centers only. This information does not apply for Principal Investigators submitting research proposals.

Full proposals for the Water Resources Research Act Program, National Competitive Grants Program are due to the IWRRC **no later than 10:00AM Eastern Standard Time on Monday, April 24, 2023**. Anything received after this time will not be eligible for submission.

**Submit full proposals to IWRRRC (as a Word Document):** email Dr. Keith Cherkauer ([cherkaue@purdue.edu](mailto:cherkaue@purdue.edu)) and Laura Esman ([lesman@purdue.edu](mailto:lesman@purdue.edu)). You will receive a confirmation email within 24 hours.

**Principal Investigators** – please do not submit your proposal to grants.gov. IWRRRC staff are required to complete these tasks. Proposals for the National Competitive Grants Program are only accepted for review if received from IWRRRC. Therefore, Principal Investigators are required to submit proposals to the IWRRRC.

## Proposal Preparation

Please follow the proposal preparation guidelines outlined starting on page 10 of the Fiscal Year 2023 Announcements, with the exception of document format. Proposals submitted to IWRRRC should be submitted as a **Word Document** and not a PDF. IWRRRC staff will convert the final files to PDF and will enter your proposal information into grants.gov on behalf of the PI (PIs will not have access to grants.gov).

**Please note that Elements 3-8 shall not exceed 10 single-spaced pages with 12-point font and at least 1-inch margins, including tables, pictures, graphs, figures, and appendices.**

### Contact Sponsored Programs

Make sure to contact your institution's Sponsored Programs immediately. The proposal should be submitted to your institution's Sponsored Programs for processing. The proposal must include an institutional cost-sharing agreement letter.

### Federal Employee Collaboration

Federal employees are encouraged to collaborate with research scientists at colleges and universities. They can serve as Co-PIs in this proposal. **If you are applying for a Water Resources 104-General grant and you have included a federal employee, the federal employee must prepare a Statement of Government Involvement to be included in the proposal.**

### Letters of Support

If your proposal includes a federal collaborator, a letter of support is required. This letter of support must be signed by someone in leadership at the designated center (not by the collaborator). Other letters of support are optional. Letters of support do not count against the proposal page limit.

## Proposal Preparation Checklist

1. Review these IWRRRC Submission Guidelines carefully.
2. Review the Fiscal Year 2023 Announcements carefully for full eligibility for these grant competitions.
3. Submit Intent to Submit email to [cherkaue@purdue.edu](mailto:cherkaue@purdue.edu) and [lesman@purdue.edu](mailto:lesman@purdue.edu) by **March 22, 2023 at 5:00PM EST**
4. Complete proposal following guidelines outlined starting on page 10 of the Fiscal Year 2023 Announcements.
5. Complete budget forms (budget sheet and budget justification; include project start and end dates) and submit to [cherkaue@purdue.edu](mailto:cherkaue@purdue.edu) and [lesman@purdue.edu](mailto:lesman@purdue.edu) by **April 17, 2023 at 10:00AM EST**.
6. Obtain institutional cost-sharing agreement documentation. Incomplete cost-share documentation will disqualify your proposal.
7. Have federal employee collaborator prepare a Statement of Government Involvement, if applicable.
8. Obtain letters of support, if applicable.

9. Submit proposal (as a Word document) to [cherkaue@purdue.edu](mailto:cherkaue@purdue.edu) and [lesman@purdue.edu](mailto:lesman@purdue.edu) by **April 24, 2023 at 10:00AM EST**
  - a. Email subject line: 104G Proposal\_[PI last name]
  - b. Please CC all Co-PIs on this email submission
10. IWRRC staff will provide an email confirmation to each PI that the proposal was submitted to grants.gov by **5:00PM EST on April 27, 2023**. Email confirmation may take 24 hours.

## Questions

Please contact Laura Esman at [lesman@purdue.edu](mailto:lesman@purdue.edu) or 765-496-3135.