Opportunity Title: USGS Optimizing Methods for the Detection of Microplastics in Groundwater and Drinking Water
Opportunity Reference Code: DOI-USGS-2026-06

Organization U.S. Department of the Interior (DOI)

Reference Code DOI-USGS-2026-06

How to Apply ***To submit your application, scroll to the bottom of this opportunity and click APPLY.***

A complete application consists of:

- An application
- Transcript(s) – For this opportunity, an unofficial transcript or copy of the student academic records printed by the applicant or by academic advisors from internal institution systems may be submitted.
  Click here for detailed information about acceptable transcripts.
- A current resume/CV, including academic history, employment history, relevant experiences, and publication list
- Two educational or professional recommendations.

All documents must be in English or include an official English translation.

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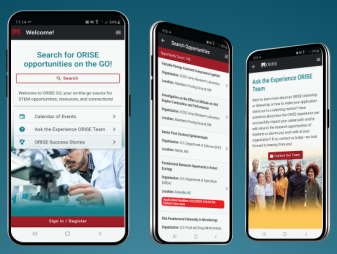

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Description ***Applications will be reviewed on a rolling-basis.**

USGS Office/Lab and Location: A research opportunity is currently available with the U.S. Geological Survey (USGS) located in Madison, Wisconsin.

The USGS mission is to monitor, analyze, and predict current and evolving dynamics of complex human and natural Earth-system interactions and to deliver actionable intelligence at scales and timeframes relevant to decision makers. As the Nation's largest water, earth, and biological science and civilian mapping agency, USGS collects, monitors, analyzes, and provides science about natural resource conditions, issues, and problems.

Research Project: Microplastics have received increasing attention in the past few years due to their ubiquity within the environment and unknown health impacts on wildlife and humans. Recently, the U.S. EPA added microplastics to the drinking water contaminants list, but currently there are no standardized methods for the collection or detection of plastics in drinking and groundwater. Currently, the USGS M3 Research Laboratory is developing custom sampling devices for testing at groundwater and drinking water locations across the country. The objectives of this project are to

1. Optimize field collection methods (i.e., time, volume, etc.) to provide a cost-effective solution for microplastics sampling within domestic wells and homes,
2. Analyze samples for > 20 micrometer microplastics to assess the number, size, and morphology of plastics in environmental samples,

and;
3. Aid in the development of nanoplastics detection methods using different pre-treatment approaches and detection algorithms.

This project will provide data to better understand the occurrence of microplastics in drinking water and develop universal sampling protocols to ensure reliable, reproducible data.

You will gain experience with following:

- Preparing microplastics sampling devices for field deployment,
- Collecting local water samples (tap and surface waters) for method development tests,
- Performing sample digestions on environmental samples,
- Developing increasing proficiency in analytical methods on microplastics instrumentation including laser direct IR and Raman spectroscopy,
- Performing data analysis and;
- Interfacing with collaborators to provide updates on sample analysis and results.

Learning Objectives: You will receive hands on laboratory experience that includes training on cutting edge instrumentation, quality control and assurance methods, and data analysis which will prepare you for a future career in water resources. In addition, given the laboratory's diverse portfolio, you will be able to interact with federal scientists across the country. Lastly, you will have the chance to collaborate on publication of methods or results from this research.

Mentor: The mentor for this opportunity is Sarah Janssen (sjanssen@usgs.gov). If you have questions about the nature of the research please contact the mentor(s).

Anticipated Appointment Start Date: June 15, 2026. Start date is flexible and will depend on a variety of factors.

Appointment Length: The appointment will initially be for 10 weeks, but may be renewed upon recommendation of DOI and is contingent on the availability of funds.

Level of Participation: The appointment is full time.

Participant Stipend: Stipend rates may vary based on numerous factors, including opportunity, location, education, and experience. If you are interviewed, you can inquire about the exact stipend rate at that time and if selected, your appointment offer will include the monthly stipend rate.

Citizenship Requirements: This opportunity is available to U.S. citizens, Lawful Permanent Residents (LPR), and foreign nationals. Non-U.S. citizen applicants should refer to the Guidelines for Non-U.S. Citizens Details page of the program website for information about the valid immigration statuses that are acceptable for program participation.

ORISE Information: This program, administered by ORAU through its

contract with the U.S. Department of Energy (DOE) to manage the Oak Ridge Institute for Science and Education (ORISE), was established through an interagency agreement between DOE and USGS. Participants do not become employees of USGS, DOE or the program administrator, and there are no employment-related benefits. Proof of health insurance is required for participation in this program. Health insurance can be obtained through ORISE.

Questions: If you have questions about the application process please email USGS@orau.org and include the reference code for this opportunity.

Qualifications

The qualified candidate should be currently pursuing or have received a bachelor's degree in the one of the relevant fields. Degree must have been received within the past four years, or anticipated to be received by 6/1/2026.

Eligibility Requirements

- **Degree:** Bachelor's Degree received within the last 48 months or anticipated to be received by 6/1/2026 12:00:00 AM.
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (12)
  - **Communications and Graphics Design** (2)
  - **Earth and Geosciences** (21)
  - **Engineering** (27)
  - **Environmental and Marine Sciences** (14)
  - **Life Health and Medical Sciences** (49)
  - **Mathematics and Statistics** (11)
  - **Physics** (16)
  - **Science & Engineering-related** (1)