

Opportunity Title: USGS Plant-Animal Associations and Correlation with Water Quality in the Upper Mississippi River
Opportunity Reference Code: DOI-USGS-2026-53

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

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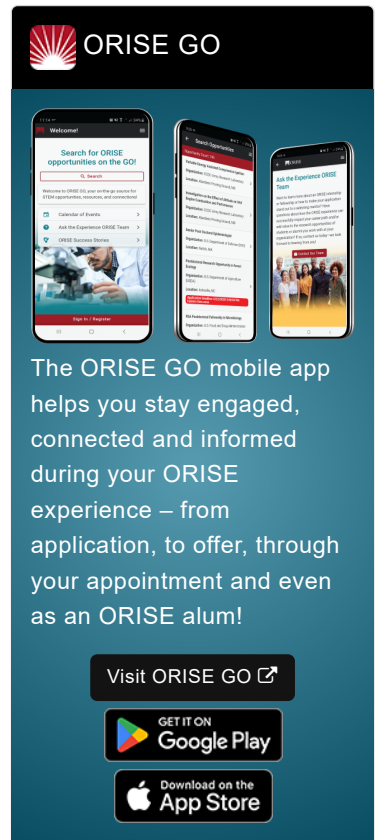
Description: *Applications will be reviewed on a rolling-basis.

USGS Office/Lab and Location: A research opportunity is currently available with the U.S. Geological Survey (USGS) located in La Crosse, 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: Submerged aquatic vegetation and native freshwater mussels are sensitive to water quality and provide habitat to other animals, making them resources of concern for managers. Both taxa contain multiple species that prefer different water depth and substrate, and potentially alter the physical conditions around them (e.g., water clarity, velocity, etc.). Identifying associations between these two resources of concern can further our understanding of community ecology in rivers and inform river management.

The Upper Mississippi River Restoration program collects data to quantify resource abundance through the Long Term Resource Monitoring (LTRM) program and restores natural river processes through Habitat Restoration and Enhancement Projects (HREPs). Pool 13 in the upper Mississippi River is routinely monitored by the LTRM program and has a HREP designed to

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benefit submerged aquatic vegetation and native mussels. Assessment of submerged aquatic vegetation and native mussel association and correlation with water quality could reveal opportunities for management that benefit both taxa, thus increasing the management efficiency. State wildlife managers were specifically interested in the co-occurrence of *Vallisneria americana* tubers, which increase survival of food for waterfowl, and native mussels. The project seeks to analyze vegetation and native mussel data collected in 2024 and the participant will gain experience with ongoing data collection efforts related to the Pool 13 HREP and LTRM program.

- Analyze submerged aquatic vegetation and native mussel associations using DuBose et al. (2026) <https://doi.org/10.5066/P14LUKFY> and systematic data collected at the pool scale in Pools 4, 8 and Pool 13
 - Conduct data analysis in R or python using univariate and multivariate methods typical for community ecology.
- Read, understand and summarize scientific literature to write an introduction for their analysis
- Communicate results of said analysis using a 15-min presentation and a written report
- Help in ongoing data collection efforts in the lower Pool 13 HREP and with the LTRM program
 - Participate in monthly trips to perform calibration on high-tech instruments collecting high-resolution water quality data and,
 - Participate in sampling of vegetation, fish, and water quality samples for the systematic monitoring efforts in the LTRM program

Learning Objectives: This opportunity would give you hands-on experience conducting all phases of natural resources research. You would be exposed to data collection and field surveys by training with the Wisconsin Department of Natural Resources LTRM field station in their annual surveys, learning about calibration of high-tech instrumentation that is collecting data in the lower Pool 13 before construction of the HREP, and get the opportunity to analyze data describing two natural resources of management concern. You would also get the opportunity to collaborate with employees from at least four government agencies (USGS, U.S. Army Corps of Engineers, Wisconsin Department of Natural Resources, Minnesota Department of Natural Resources, and Iowa Department of Natural Resources). This opportunity increases the professional network of the student and exposes them to the missions and methods of different government agencies, which can inform their future career paths. You will also be provided opportunities to communicate results on-site and/or virtually to scientists and resource managers. This communication experience, networking and exposure directly informed the career path of T. DuBose (an ORISE alumni and scientist on this project).

The lead USGS scientist (and typically the supporting USGS scientists, as well) will meet at least weekly with the you to discuss internship goals, progress, and learning experiences (often termed 1-on-1s) as well as to

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understand your interest to better support your growth. Dr. Larson (USGS) will escort and train you at various field sites. We will use software and data carpentry lessons (<https://datacarpentry.org/>) to improve coding skills if needed. We will encourage you to attend professional development seminars hosted by USGS that are offered on-site in La Crosse WI. We will collaborate with you to complete data analysis and writing so that you can be an author on a peer-reviewed scientific manuscript.

Mentor: The mentor for this opportunity is Traci Dubose (tdubose@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 or master'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 6/1/2029.

Point of Contact [Rachel](#)

Eligibility • **Degree:** Bachelor's Degree or Master's Degree received within the last

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Requirements 48 months or anticipated to be received by 6/1/2029 12:00:00 AM.

• **Discipline(s):**

- **Chemistry and Materials Sciences** ([12](#))
- **Communications and Graphics Design** ([2](#))
- **Computer, Information, and Data Sciences** ([17](#))
- **Earth and Geosciences** ([21](#))
- **Engineering** ([29](#))
- **Environmental and Marine Sciences** ([14](#))
- **Life Health and Medical Sciences** ([51](#))
- **Mathematics and Statistics** ([11](#))
- **Physics** ([16](#))
- **Science & Engineering-related** ([2](#))