

Opportunity Title: EPA Postdoctoral Fellowship for Developing Isotopic Indicators to Assess Wetlands as Nitrogen Processing Hotspots

Opportunity Reference Code: EPA-ORD-CPHEA-PESD-2022-04

Organization U.S. Environmental Protection Agency (EPA)

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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. All transcripts must be in English or include an official English translation. 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. Click [here](#) for detailed information about recommendations.

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

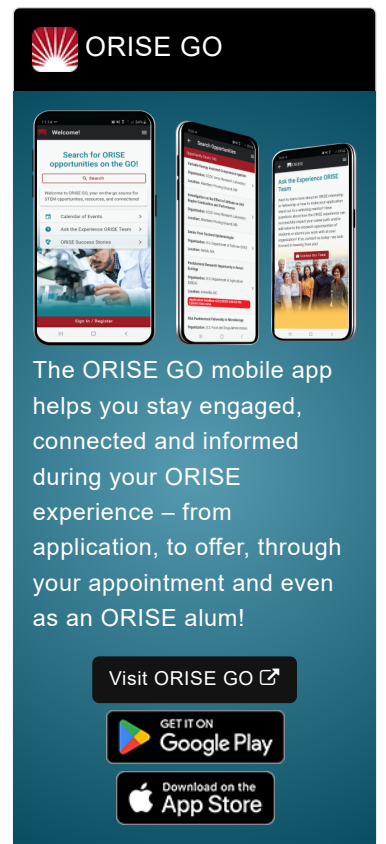
Application Deadline 12/31/2022 1:41:29 PM Eastern Time Zone

Description *Applications may be reviewed on a rolling-basis and this posting could close before the deadline. Click [here](#) for information about the selection process.

EPA Office/Lab and Location: A research opportunity is available at the United States Environmental Protection Agency (EPA), Office of Research and Development (ORD), Center for Public Health and Environmental Assessment (CPHEA), Pacific Ecological Systems Division (PESD) in Corvallis, Oregon.


Research Project: This interdisciplinary effort will explore developing isotopic indicators of nitrogen processing with the National Wetland Condition Assessment (NWCA). The NWCA is a survey coordinated by the EPA with states and tribes to collect physical, chemical, and biological data from wetlands across the conterminous United States every five years. Wetlands often exist in transitional landscapes – between uplands, and streams and rivers – and because of this placement, they are in an optimal position to intercept and process (i.e., remove) non-point source run-off, a critical ecosystem service. Soil stable isotopes have been integrated into the NWCA field and laboratory protocols for three survey cycles (2011, 2016, and 2021), and water stable isotopes has been analyzed for the 2011 and 2021 surveys.


This research will bring together this existing soil and water stable isotope data and other monitoring data from the NWCA (<https://www.epa.gov/national-aquatic-resource-surveys/nwca>), and the National Nutrient Inventory – a spatial database of N input inventories – to develop isotopic indicators of nitrogen processing in wetlands across regions and the conterminous US. The study will evaluate the impact of




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nitrogen loads on existing wetland condition and identify characteristics of wetlands with high nitrogen processing potentials, thus informing how restoration and conservation activities may best address nitrogen removal. This research will span local, regional, and national scales.

Research activities may include:

1. Assembling a national NARS dataset on nitrogen isotopes within the conterminous United States,
2. Assist in analyzing 2021 water isotope samples on an isotope ratio mass spectrometer at the EPA Integrated Stable Isotope Research Facility (ISIRF) located at PESD,
3. Collaborating on the development of a stable isotope indicator of wetland condition, and
4. Conducting scientific synthesis, data analysis, manuscript preparation and literature searches.

Learning Objectives: The research participant will be mentored by PESD scientists Amanda Nahlik, Renée Brooks, and Jana Compton as part of a national EPA program on assessing the condition of the nations waters and on the impacts of nitrogen within EPA's Safe and Sustainable Water Research Program. The research participant will have the opportunity learn about EPA's programs related to the impacts of nitrogen on water pollution and about the National Aquatic Resource Surveys (NARS), which includes the NWCA. The research participant will gain experience analyzing large datasets that span large spatial scales. Additionally, the research participant will gain expertise using various methods for analyzing stable isotopes within ISIRF, a leading stable isotope laboratory, and how isotopic analyses are broadly applied to EPA research problems.

Mentor(s): The mentor for this opportunity is J. Renée Brooks (Brooks.ReneeJ@epa.gov). If you have questions about the nature of the research please contact the mentor(s).

Anticipated Appointment Start Date: November 1, 2022. All start dates are flexible and vary depending on numerous factors. Click [here](#) for detailed information about start dates.

Appointment Length: The appointment will initially be for one year and may be renewed upon EPA recommendation and subject to availability of funding.

Level of Participation: The appointment is full-time.

Participant Stipend: The participant will receive a monthly stipend commensurate with educational level and experience. Click [here](#) for detailed information about full-time stipends.

EPA Security Clearance: Completion of a successful background investigation by the Office of Personnel Management (OPM) is required for an applicant to be on-boarded at EPA.

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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 EPA. Participants do not become employees of EPA, 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.

ORISE offers all ORISE EPA graduate students and Postdocs a free 5 year membership to the National Postdoctoral Association (NPA).

The successful applicant(s) will be required to comply with Environmental, Safety and Health (ES&H) requirements of the hosting facility, including but not limited to, COVID-19 requirements (e.g. facial covering, physical distancing, testing, vaccination).







Questions: Please see the [FAQ section](#) of our website. After reading, if you have additional questions about the application process please email ORISE.EPA.ORD@orau.org and include the reference code for this opportunity.

Qualifications The qualified candidate should have received a doctoral degree in one of the relevant fields, or be currently pursuing the degree and will reach completion by the start date of the appointment. Degree must have been received within five years of the appointment start date.

Preferred skills:

- Experience with stable isotope approaches, analysis, and interpretation
- Solid background in wetland ecology/biogeochemistry and approaches and methods,
- Experience with R statistical software, ArcGIS, and working with large datasets
- Experience working with watershed and water quality data
- Excellent written verbal and written communication skills
- Demonstrated skills working in a group setting
- Capable of critically evaluating the quality of published science

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Doctoral Degree received within the last 60 months or currently pursuing.
- **Discipline(s):**
 - **Chemistry and Materials Sciences** ([6](#) )
 - **Communications and Graphics Design** ([2](#))
 - **Earth and Geosciences** ([1](#) )
 - **Engineering** ([1](#) )
 - **Environmental and Marine Sciences** ([7](#) )
 - **Life Health and Medical Sciences** ([6](#) )
 - **Mathematics and Statistics** ([3](#) )

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