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Opportunity Title: EPA Impact of Freshwater Salinization on Water Quality Research Opportunity
Opportunity Reference Code: EPA-ORD-CPHEA-PESD-2022-05

Organization U.S. Environmental Protection Agency (EPA)

Reference Code EPA-ORD-CPHEA-PESD-2022-05

How to Apply ***Connect with ORISE...on the GO!*** Download the new ORISE GO mobile app in the Apple App Store or Google Play Store to help you stay engaged, connected, and informed during your ORISE experience and beyond!

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 10/10/2022 3:00:00 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) located in either Annapolis, Maryland or Philadelphia, Pennsylvania..

Research Project: Freshwater salinization from road salts, sewer leaks, urban infrastructure, fertilizers, water softeners, saltwater intrusion, etc. can lead to mobilization of heavy metals and nutrients, thereby increasing the risk of contaminated drinking water.

The research participant may have the opportunity to be involved in the following activities:

1. Quantify how salinization exacerbates heavy metal contamination (including Pb and Cu) in source water and identify which salt types (Na, Ca, Cl, etc) and concentrations drive metal mobilization events;
2. Develop improved monitoring methods by employing inexpensive, low-maintenance sensors to provide real-time data of contamination events by using salinity and conductivity as proxies for metals of concern;
3. Identify stormwater management approaches that will reduce threshold heavy metal exceedances; and
4. Interact with faculty collaborators and perform local travel in the Baltimore/Washington DC/Philadelphia area.

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Learning Objectives: The research participant will have the opportunity to learn about:

1. Urban stream biogeochemistry and hydrology
2. Watershed monitoring and management principles
3. Experimental design and field sampling protocol
4. Proper quality assurance procedures in the lab and field
5. How Clean Water Act (CWA) programs are structured to help achieve water quality results.
6. How States and EPA can continue to improve the CWA 303(d) listing and TMDL program to better achieve environmental results in ways tailored to specific state priorities.
7. How to leverage different communication strategies to convey water quality information to a variety of audiences.

Mentor(s): The mentor for this opportunity is Paul Mayer (mayer.paul@epa.gov). If you have questions about the nature of the research please contact the mentor(s).

Anticipated Appointment Start Date: October 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.

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).

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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 bachelor's or master's degree in one of the relevant STEM fields, or be currently pursuing the degree and will reach completion by September 2022. Degree must have been received within five years of the appointment start date.

Preferred skills:

- Experience with general lab procedures in chemistry and geology.
- Experience with field sampling for water and water chemistry in rivers, streams, and lakes.
- Ability to manage and analyze data.
- Ability to summarize, synthesize, and report on research results would enhance the research experience.

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Bachelor's Degree or Master's Degree received within the last 60 months or anticipated to be received by 9/1/2022 11:59:00 PM.
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (12)
  - **Earth and Geosciences** (21)
  - **Environmental and Marine Sciences** (14)
  - **Life Health and Medical Sciences** (48)