Opportunity Title: EPA Microplastic Research and Emerging Contaminants Research Fellowship
Opportunity Reference Code: EPA-ORD-CEMM-ACESD-2023-02

Organization U.S. Environmental Protection Agency (EPA)

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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 2/9/2024 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 project training opportunity is available at the Environmental Protection Agency (EPA), Office of Research and Development (ORD), Center for Environmental Measurement and Modeling (CEMM), Atlantic Coastal Environmental Sciences Division (ACESD) located in Narragansett, Rhode Island.

ACESD conducts research to enhance the understanding of the effects of human activity on land and waters of the Atlantic seaboard. Researchers collect and analyze data to provide tools for diagnosing and predicting the effects of this activity on aquatic resources and wildlife. ACESD provides research support to EPA Program & Regional Offices and state & local governments. For additional information regarding the Atlantic Coastal Environmental Sciences Division, visit the home page at https://www.epa.gov/aboutepa/about-atlantic-coastal-environmental-sciences-division.

Research Project: Emerging contaminants, particularly nano- and microplastics, are an increasing concern in our Nation's marine waterways. Method development for detection of microplastics including tire wear particles in environmental matrices and collection of basic information on fate and effects are critical to understanding and quantifying these emerging contaminants.

The research participant will collaborate with a team of scientist to develop methods for identification of nano- and microplastics using raman

spectroscopy and other identification tools, and quantify and identify nano- and microplastics from environmental matrices. Future experiments may include those designed to understand the effects of nano- and microplastics and other emerging contaminants (e.g., tire wear particles). Our laboratory has several research efforts including method development for detecting and identifying nano- and microplastics in complex environmental matrices, development of methods to evaluate changes in marine benthos from a number of different stressors, and effects of tire wear particles.

The research participant will have the opportunity to be part of many aspects of ongoing research projects surrounding nano- and microplastics. The research participant will learn the many aspects of laboratory organization and maintenance necessary to implement research projects. The research participant will be part of the research team, attending and contributing to team meetings and discussions, and communicating their own research to the team. The research participant will learn to maintain and organize laboratory data and information, including physical samples, laboratory notebooks, and electronic files. The research participant will receive guidance in how to be compliant with all laboratory records management policies and requirements.

Learning Objectives: The research participant will develop skills in planning, conducting, and communicating scientific research in the context of a significant real-world environmental problem. The research participant will expand their knowledge concerning emerging contaminant pollution and related environmental issues in the coastal marine environments and learn about research careers in general and bench science methods development in particular. The research participant will have opportunities to present research findings at major society conferences and to interact with a broad group of scientists at EPA and elsewhere. The research participant will have latitude in exercising independent initiative and judgment in the research commensurate with demonstrated level of training and experience.

Mentor(s): The mentor for this opportunity is Kay Ho (Ho.Kay@epa.gov) with Robert Burgess (Burgess.robert@epa.gov) and Marissa Giroux (Giroux.marissa@epa.gov.) as co-mentors. If you have questions about the nature of the research please contact the mentor(s).

Anticipated Appointment Start Date: December 1, 2023. 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 up to four additional years 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).

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 be currently pursuing or have received a doctoral degree in one of the relevant fields. Degree must have been received within five years of the appointment start date.

Preferred skills:

- Working knowledge of general laboratory equipment including microscopy
- Research experience in extraction and identification of nano- and microplastics in environmental samples using spectroscopy
- Chemistry background is useful as well as the working knowledge of any chemical instrumentation including raman, FTIR microscopy and or pyrolysis GC/ MS
- Strong desire to learn and the capability to work independently as well as part of a group
- Field experience in sample collection, the ability to swim, and familiarity (or at least not fear) of small boats

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** (12 👁)

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- **Earth and Geosciences** (3 👁)
- **Engineering** (10 👁)
- **Environmental and Marine Sciences** (14 👁)
- **Life Health and Medical Sciences** (51 👁)
- **Science & Engineering-related** (1 👁)