Opportunity Title: EPA Postdoctoral Fellowship in Organic Compound and Microplastic Contamination
Opportunity Reference Code: EPA-ORD-CESER-LRTD-2022-04

Organization U.S. Environmental Protection Agency (EPA)

Reference Code EPA-ORD-CESER-LRTD-2022-04

How to Apply

Connect with ORISE...on the GO! Download the new ORISE GO mobile app in the Apple 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 11/30/2022 3:00:00 PM Eastern Time Zone

Description

***Applications may be reviewed on a rolling-basis.** Click **here** for information about the selection process.

EPA Office/Lab and Location: Two research opportunities are currently available at the Environmental Protection Agency (EPA), Office of Research and Development (ORD), Center for Environmental Solutions and Emergency Response (CESER), Land Remediation and Technology Division (LRTD) located in Cincinnati, Ohio.

Research Project: The primary focus of this research project will be on organic compounds pollution, and nano-microplastic environmental contamination. Secondary focus will be on organic pesticide interactions with nano-fertilizers and nano-pesticides.

Learning Objectives: The research participant will learn how to conduct research on the characterization and quantification of anthropogenic organic materials to understand their chemical behavior, fate, transport, transformation, and adverse effects on environmental and human health. It will involve conducting research experiments, analyzing data, and writing peer-reviewed journal articles. A major component of the research will be to study the transformations of organic compounds such as Volatile Organic Compounds (VOCs) from 3D Printing, nano- and microplastics fate and transformation including photolysis, pesticides, and other persistent organic pollutants. There may be future learning opportunities involving halogenated persistent organic pollutants (POPs) degradation through innovative technologies.

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The research participant will have access to a large array of analytical/physical technologies in their research activities, including, but not limited to Gas Chromatography – Tandem Mass Spectrometry (GC-MS-MS) with Pyrolysis, Liquid Chromatography – Tandem Mass Spectrometry (LC-MS-MS), Transmission Electron Microscopy (TEM), Dynamic Light Scattering (DLS), Fourier Transform Infrared Spectroscopy (FTIR), Laser Direct Infrared Spectroscopy (LDIR), microwave technology, X-Ray Absorption Spectroscopy (XAS), X-Ray Diffraction (XRD), and single particle - Inductively Coupled Plasma with Mass Spectrometry (spICP/MS). This will help the research participant in learning the use and operation of different analytical instruments and methodologies at the EPA while conducting research. Additionally, the research participant will have the opportunity to interact and apply the research to understand and find solutions to real life environmental problems and propel their knowledge and experience to prepare them for future endeavors.

Mentor(s): The mentor(s) for this opportunity are Michelle Angel (angel.michelle@epa.gov) and Souhail R. Al-Abed (al-abed.souhail@epa.gov). If you have questions about the nature of the research please contact the mentor(s).

Anticipated Appointment Start Date: Spring/Summer 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).

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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 pursuing or have received a doctoral degree by September 1, 2022 in one of the relevant fields (e.g. Environmental Chemistry, Environmental Science, Environmental Engineering). Degree must have been received within five years of the appointment start date.

Preferred Skills:

- Strong verbal and writing skills
- Basic knowledge of analytical instrumentation related to analysis of organic compounds in environmental media including, but not limited to: gas chromatography - tandem mass spectrometry (GC-MS-MS), liquid chromatography - tandem mass spectrometry (LC-MS-MS), fourier transform infrared spectroscopy (FTIR), Laser Direct Infrared Spectroscopy (LDIR), and Raman spectroscopy.

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Doctoral 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** (5 👁)
  - **Communications and Graphics Design** (6 👁)
  - **Engineering** (6 👁)
  - **Environmental and Marine Sciences** (2 👁)
  - **Life Health and Medical Sciences** (2 👁)
  - **Science & Engineering-related** (1 👁)