Opportunity Title: EPA Postdoctoral Fellowship for Suspect Screening Investigations for Exposure Characterization in Environmental and Samples
Opportunity Reference Code: EPA-ORD-CPHEA-PHESD-2022-03

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 11/14/2022 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 Environmental Protection Agency (EPA), Office of Research and Development (ORD), Center for Public Health Environmental Assessment (CPHEA), Public Health and Environmental Systems Division (PHESD), Exposure Indicators Branch located in Research Triangle Park, North Carolina

Research Project: Non-targeted analysis (NTA) methods are used by the EPA team to screen for hundreds-to-thousands of chemical species in a wide range of environmental media, including water, soil/dust, and biological material. Chemical identification and data processing require advanced computational approaches and modeling to ensure high fidelity data sets to inform decision making. Knowledge of chemical presence, concentration, and chemical properties are critical to exposure and toxicity assessments.

The research participant will receive opportunities to collaborate closely with senior scientists who are experts in chemistry, biology, pharmacokinetics, biological modeling, survey statistics, and risk assessment for supporting regulatory decision-making. The research participant will also have the opportunity to further develop their technical skills, analytical capability, and communication skills. More specifically, the research participant will learn to develop scientific methods that allow for a more intuitive and informative analysis of bio-monitoring data in an exposure and/or risk context. The EPA is developing workflows and tools to automate and improve the accuracy, efficiency, and reproducibility of NTA data processing to serve applications monitoring and reporting on

chemicals of emerging concern (e.g. PFAS). The agency is also performing large-scale exposure screening efforts to determine priority targets for follow-up assessment and modeling. The research participant will have the opportunity to collaborate with an EPA team of investigators who are identifying chemicals of human exposure. Research will include non-targeted analysis of environmental multimedia samples using High Resolution Mass Spectrometry (HRMS) for identification of classes of xenobiotic chemical contaminants humans are likely to be exposed to. These environmental media may include such samples as house-dust, surface wipes and water.

Learning Objectives: Research activities may include multimedia sample preparation and operation of high-resolution mass spectrometry equipment to collect suspect screening and non-targeted analysis data; development and optimization of multimedia sample preparation methods to encompass target chemical space; interpretation of multivariate exposure datasets (e.g. searching for trends, relevancies, patterns, etc.); generation of reports of screened samples via HRMS; identification novel compounds in selected media; presenting at professional meetings; and preparing manuscripts for publication in peer-reviewed journals.

Mentor(s): The mentor(s) for this opportunity are Elaine Hubal (hubal.elaine@epa.gov) and James McCord (mccord.james@epa.gov). If you have questions about the nature of the research please contact the mentor(s).

Anticipated Appointment Start Date: September 19, 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.

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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 with completion before the appointment start date. Degree must have been received within five years of the anticipated appointment start date.

Preferred skills:

- Evidence of coursework and/or experience performing quantitative chemical analysis, including a working knowledge of mass spectrometry
- Experience with high resolution mass spectrometry such as QTOF or Orbitrap
- Prior exposure to non-targeted analysis and/or suspect screening analysis

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 👁)
  - **Earth and Geosciences** (6 👁)
  - **Engineering** (6 👁)
  - **Environmental and Marine Sciences** (14 👁)
  - **Life Health and Medical Sciences** (5 👁)
  - **Mathematics and Statistics** (1 👁)
  - **Physics** (16 👁)