Opportunity Title: EPA Research Opportunity in Data Analysis of Synthetic Chemicals
Opportunity Reference Code: EPA-ORD-CCTE-CCED-2021-14

Organization U.S. Environmental Protection Agency (EPA)

Reference Code EPA-ORD-CCTE-CCED-2021-14

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 12/30/2021 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 Computational Toxicology and Exposure (CCTE), Chemical Characterization & Exposure Division (CCED) 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.

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 research participant will contribute to data collection and coding for NTA and PFAS analysis related applications in development by the Agency. Research training activities may include scientific programming (e.g. R, Python) for validation and automation of data processing, chemical database construction, and creation of predictive quantitative models and statistical analyses. Activities may further include multimedia sample preparation and basic operation of mass spectrometry equipment to collect chemical data for reference chemical libraries and model building. Interest and skills permitting, the research participant will have the opportunity to

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conduct fundamental scientific analyses, synthesize scientific data, and deliver scientific results in the form of presentations or manuscripts.

Learning Objectives: Through this research training opportunity, the research participant will have the opportunity develop their programming, analytical, and communication skills, as well as further their understanding of environmental health challenges. The participant will be able to generate research hypothesis and goals, develop programmatic tools to address them, and report results to a collaborative team.

Mentor(s): The mentors for this opportunity are James McCord (mccord.james@epa.gov) and Jon Sobus (sobus.jon@epa.gov). If you have questions about the nature of the research please contact the mentor(s).

Anticipated Appointment Start Date: Winter 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 up to three 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.

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, master's or doctoral degree in one of the relevant fields, or be currently pursuing one of the degrees with completion by the appointment start date. Degree must have been received within five years of the appointment start date.

Preferred skills:

- Experience using a scientific programming language (e.g. R, Python) to summarize and manipulate data files, manage data, and conduct basic

data analysis such as statistics and modeling
- Evidence of coursework and/or experience performing quantitative chemical analysis, including a working knowledge of mass spectrometry

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Bachelor's Degree, Master's Degree, or Doctoral Degree received within the last 60 months or anticipated to be received by 12/31/2021 11:59:00 PM.
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (12 👁)
  - **Computer, Information, and Data Sciences** (17 👁)
  - **Earth and Geosciences** (21 👁)
  - **Engineering** (27 👁)
  - **Environmental and Marine Sciences** (14 👁)
  - **Life Health and Medical Sciences** (46 👁)
  - **Mathematics and Statistics** (10 👁)
  - **Physics** (16 👁)
- **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).