

**Opportunity Title:** EPA Fellowship for Omics of PFAS Exposure for Understanding Toxicity and Metabolism

**Opportunity Reference Code:** EPA-ORD-CCTE-CCED-2022-09

**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.

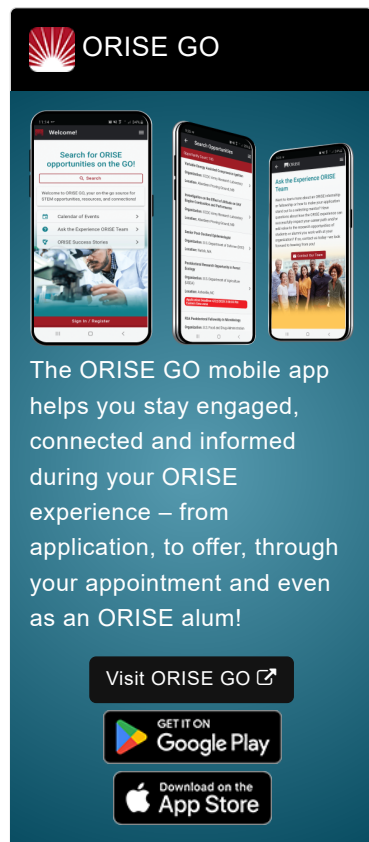
**Application Deadline** 4/28/2023 3:00:00 PM Eastern Time Zone

**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:** The Agency is developing new approaches to understand the effects of exposure to enable risk assessment and characterization for environmental contaminants. The research participant will join a multi-disciplinary team of investigators to evaluate potential biological disruptions after short-term chemical exposures by using lipidomics, metabolomics, and other advanced mass spectrometry techniques. Per- and polyfluorinated substances (PFAS) exposures are the focus of this research. The research participant will design laboratory experiments, conduct data analysis and interpretation, and potentially integrate multi omics data, including transcriptomics, from paired samples. The research participant also may have the opportunity to use non-targeted analysis for identification of biotransformation products and evaluate exposomics of real-world samples. The research aims to further understand exposure response and potential toxicity of environmental contaminants by identifying biological pathways and biomarkers altered at the phenotypic level.


With guidance from the mentor, the research participant may be involved in any of the following training activities:




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- Developing extraction methods for biofluids and tissues,
- Developing non-targeted and targeted LC/MS/MS methods for lipids and endogenous metabolites,
- Developing data processing and omics integration workflows,
- Performing data analysis and processing using open and commercial software or in-house code, for identification of unknowns, statistical analysis, biomarker analysis, and pathway and enrichment analysis.
- Performing LC/MS instrument troubleshooting and routine maintenance on QTOF and triple quadrupole mass spectrometers,
- Generating quality control documents and recording laboratory and research activities,
- Presenting research at internal and external meetings and preparing manuscripts for publication in peer-reviewed journals.

**Learning Objectives:** The research participant will have the opportunity to contribute to and to publish original research. It is expected that this training opportunity will provide an early career scientist with knowledge, skills, and abilities needed to apply new technologies and associated data to inform biological response to exposure and to pursue a professional career in bioanalytical chemistry.

**Mentor(s):** The mentor(s) for this opportunity is Denise MacMillan ([macmillan.denise@epa.gov](mailto:macmillan.denise@epa.gov)). If you have questions about the nature of the research please contact the mentor(s).

**Anticipated Appointment Start Date:** February 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 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

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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](mailto:ORISE.EPA.ORD@orau.org) and include the reference code for this opportunity.

**Qualifications** The qualified candidate should have received a master's or doctoral degree in one of the relevant fields (e.g. Chemistry, Biochemistry, Toxicology), or be currently pursuing one of the degrees with completion before the appointment start date. Degree must have been received within five years of the appointment start date.

Preferred Skills:

- Demonstrated expertise with operation of high resolution, accurate mass LC/MS instruments for untargeted analysis of lipids, endogenous metabolites, or proteins,
- Expertise with tissue and biofluid extractions and mass spectrometry analysis,
- Expertise with processing omics data for identification of biological pathways, and networks,
- Skills and knowledge of statistical analysis and data visualization techniques,
- Familiarity with at least one programming language (e.g., R, Python),
- Excellent oral and written communication skills.

**Eligibility Requirements**

- **Citizenship:** U.S. Citizen Only
- **Degree:** Master's Degree or Doctoral Degree received within the last 60 months or currently pursuing.
- **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** ([48](#))
  - **Mathematics and Statistics** ([11](#))
  - **Physics** ([16](#))