Opportunity Title: EPA Toxicity of Environmental Contaminants Research Opportunity

Opportunity Reference Code: EPA-ORD-CCTE-GLTED-2021-07

Organization	U.S. Environmental Protection Agency (EPA)
Reference Code	EPA-ORD-CCTE-GLTED-2021-07
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	9/30/2021 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.

<u>**EPA Office/Lab and Location:**</u> Two research opportunities are available at the Environmental Protection Agency (EPA), Office of Research and Development (ORD), Center for Computational Toxicology and Exposure (CCTE), Great Lakes Toxicology Ecology Division (GLTED) located in Duluth, Minnesota.

<u>**Research Project:**</u> Human activities associated with industry, consumer products, agricultural practices, etc. have resulted in release of complex mixtures of organic contaminants into the aquatic environment. While information on biological potency and toxicological hazards of such chemicals are available for some compounds, toxicity information is lacking for many of the thousands of contaminants that may be detected in surface waters, sediment, or aquatic biota. For example, per- and polyfluoroalkyl substances (PFAS) are a complex class of thousands of chemicals that are used in a wide variety of commercial products and industrial applications, but to date there are just a handful for which extensive toxicity characterization is available. The research participant(s) will be engaged in dynamic research aimed at identifying biological activities associated with organic contaminants in in the aquatic environment, characterizing their concentration-response behaviors, and examining the scientific support (or lack thereof) for linking those biological activities to adverse effects on aquatic organisms or ecosystems. The research participant(s) will engage in both desk-based research involving literature review, evidence assembly, and evidence evaluation (approximately 50%) and laboratory research conducting biological activity screening using new approach methodologies
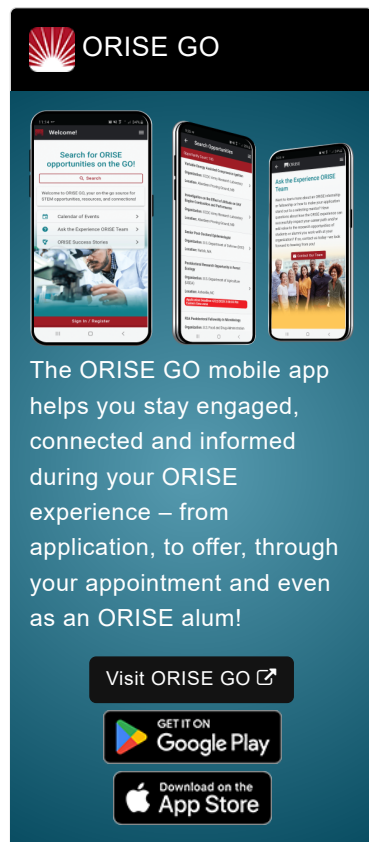
and conducting hypothesis-driven experiments to verify or reject hypothesized adverse effects.

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

- Conducting laboratory exposures to organic chemicals using aquatic organisms including fish, invertebrates, and algae.
- Conducting molecular, biochemical, physiological, and/or histological analyses on biofluids and tissue samples collected from aquatic organisms.
- Screening chemicals or chemical mixtures for biological activity using a diversity of cell-free, cell-based, and/or high throughput testing approaches.
- Compiling and summarizing scientific information from the peer-reviewed literature and from on-line data sources.
- Conducting critical weight of evidence-based evaluations based on Bradford Hill considerations.
- Analyzing experimental data and generating tables, figures, and other summaries of results.
- Presenting research results at scientific meetings and contributing to written reports and journal articles.

Learning Objectives: The research participant will learn a diversity of laboratory techniques which can be applied across life sciences research fields. The research participants learn to operate and use a range of scientific equipment. The research participant will learn to work with aquatic organisms, cell culture, and/or biochemical assays. The research participant will learn about search strategies and tools to aid in efficient and transparent literature retrieval and evaluation. The research participants will learn to evaluate data quality, trouble shoot research results, apply statistical methods for data analysis and interpretation.

The research participant will collaborate with a transdisciplinary research team to engage in multiple aspects of project planning, communication and coordination, research implementation, and analysis. The research participants will be afforded an opportunity to interact with internationally recognized leaders, both within and outside EPA. The research participant will have the opportunity to contribute to and/or 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 regulatory decision-making at the local, national, and/or international scale and to pursue graduate education or a professional career in life sciences research.

Mentor(s): The mentor for this opportunity is Dan Villeneuve (Villeneuve.dan@epa.gov). If you have questions about the nature of the research please contact the mentor(s).

Anticipated Appointment Start Date: September 2021. All start dates are flexible and vary depending on numerous factors. Click **here** for detailed information about start dates.

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Appointment Length: The appointment will initially be for one year and may be renewed 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 the degree and will reach completion by the appointment start date. Degree must have been received within five years of the appointment start date.

Preferred skills:

- Previous research experience, beyond lab-oriented course work alone.
- Familiarity with literature search tools and strategies
- Previous experience working with aquatic organisms, particularly fish.
- Cell culture experience (e.g., plating, maintaining, freezing animal cells using aseptic technique).
- Experience with basic molecular biology techniques used for analysis of proteins and nucleic acids (e.g., gel electrophoresis, PCR, quantitative real-time PCR, use of thermocyclers and/or bioanalyzers, etc.)
- Course work in biostatistics and/or bioinformatics
- Computational skills (e.g., programming, R-based statistics)
- Skills in oral and written communication

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 9/30/2021 11:59:00 PM.
- **Discipline(s):**

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- **Chemistry and Materials Sciences** (6 👁)
- **Computer, Information, and Data Sciences** (3 👁)
- **Earth and Geosciences** (1 👁)
- **Engineering** (2 👁)
- **Environmental and Marine Sciences** (14 👁)
- **Life Health and Medical Sciences** (46 👁)
- **Mathematics and Statistics** (4 👁)
- **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).