

Opportunity Title: EPA Ecological Hazards of Per- and Polyfluorinated Alkyl Substances (PFAS) Internship

Opportunity Reference Code: EPA-ORD-CCTE-GLTED-2020-07

Organization U.S. Environmental Protection Agency (EPA)

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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 9/30/2020 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: 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.

Research Project: 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. Given their properties and widespread use, PFAS have become widespread throughout the environment and are highly persistent. While a few select PFAS (e.g., perfluorooctanesulfonate [PFOS]; perfluorooctanoic acid [PFOA]) have been highly studied, there are thousands more PFAS structures for which little fate or effects data exist.

Given the costs and time it would take to characterize thousands of PFAS using traditional animal testing, "new approach methodologies (NAMs)", such as cell-based bioassays, high throughput transcriptomics, and structure-based bioactivity prediction models, are being used to identify potential biological targets and pathways PFAS may interact with. To evaluate potential ecological effects of PFAS, there is a need to generate



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novel concentration-response data using NAMs and to organize and communicate scientific evidence linking of biological targets/pathways with outcomes that are of concern to decision-makers (e.g., impacts on survival, growth/development, reproduction, and ultimately population sustainability).

The research participant will be engaged in dynamic research aimed at identifying the biological activities associated with PFAS chemicals, characterizing their concentration-response behaviors, and examining the scientific support (or lack thereof) for linking those biological activities to adverse effects in aquatic and/or terrestrial wildlife.

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

- Conducting laboratory exposures to PFAS chemicals, or other reference chemicals thought to act through similar modes of action, 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.
- Compiling and summarizing scientific information from the peer-reviewed literature and from on-line data sources.
- 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 participants will learn to evaluate data quality, trouble shoot research results, and apply statistical methods for data analysis and interpretation.

The research participant will be integrated into a transdisciplinary research team and engaged 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 Kathleen Jensen (Jensen.kathleen@epa.gov). If you have questions about the

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nature of the research please contact the mentor(s).

Anticipated Appointment Start Date: Fall 2020. 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 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 EPArpp@ornl.gov and include the reference code for this opportunity.

Qualifications

The qualified candidate should have received a bachelor's degree in one of the relevant fields, or be currently pursuing the degree and will reach completion by September 2020. 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

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- Skills in appropriate research data documentation and recordkeeping
- Familiarity with routine quality assurance/quality control procedures for laboratory research

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Bachelor's Degree received within the last 60 months or anticipated to be received by 9/30/2020 11:59:00 PM.
- **Discipline(s):**
 - **Chemistry and Materials Sciences** (6 👁)
 - **Computer, Information, and Data Sciences** (2 👁)
 - **Engineering** (1 👁)
 - **Environmental and Marine Sciences** (13 👁)
 - **Life Health and Medical Sciences** (45 👁)
 - **Mathematics and Statistics** (4 👁)
- **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).