Opportunity Title: EPA Development of Computational Approaches for Predicting Thyroid Systems Disruption in Aquatic Species
Opportunity Reference Code: EPA-OCSPP-2026-0008

Organization U.S. Environmental Protection Agency (EPA)

Reference Code EPA-OCSPP-2026-0008

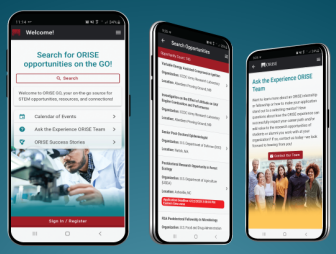
How to Apply ***To submit your application, scroll to the bottom of this opportunity and click APPLY.***

A complete application consists of:

- An application
- Transcripts – 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. Your application will be considered incomplete, and will not be reviewed until one recommendation is submitted.

All documents must be in English or include an official English translation.

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Application Deadline 12/4/2026 3:00:00 PM Eastern Time Zone

Description ***Applications may be reviewed on a rolling-basis and this posting could close before the deadline.**

EPA Office/Lab and Location: A research opportunity is currently available at the Environmental Protection Agency (EPA), Great Lakes Coastal Environmental Science Laboratory, located in Duluth, Minnesota.

The mission of EPA is to protect human health and the environment. EPA works to ensure that: Americans have clean air, land and water; national efforts to reduce environmental risks are based on the best available scientific information; federal laws protecting human health and the environment are administered and enforced fairly, effectively and as Congress intended; Environmental stewardship is integral to U.S. policies concerning natural resources, human health, economic growth, energy, transportation, agriculture, industry, and international trade, and these factors are similarly considered in establishing environmental policy; All parts of society have access to accurate information sufficient to effectively participate in managing human health and environmental risks; Contaminated lands and toxic sites are cleaned up; and chemicals in the marketplace are reviewed for safety.

Research Project: The US EPA is mandated to address the endocrine disrupting potential of thousands of chemicals. For the majority of these chemicals there is a lack of information regarding whether they have the potential to cause adverse effects from impacts on thyroid hormone status. Understanding the important targets within the network of processes

involved in maintaining normal functioning thyroid hormone levels, and what approaches to best assess activity at those targets are critical to developing a comprehensive approach to evaluating thyroid hormone disrupting potential of large numbers of chemicals.

Recently, a number of thyroid-related in vitro high-throughput screening (HTS) assays have been developed to broaden assay coverage for molecular targets potentially leading to thyroid disruption and were implemented to screen US EPA's ToxCast Phase 1, 2 and E1K chemical libraries. This battery of thyroid-related in vitro HTS assays can be employed to rapidly assess potential interference with these targets. However, this screening approach leaves uncertainties regarding the meaning of in vitro activity data as it relates to in vivo adverse outcomes. Part of this research effort aims to develop a translational process that integrates relevant information, models, and data streams to provide richer context to interpret in vitro results related to thyroid disruption. As part of the translational process, this fellowship will focus on the development of a bio-assay to quantitative monitor thyroid hormone synthesis as a complimentary assay to existing in vitro thyroid-related assays. Assay development will be followed by the analysis of canonical and suspected thyroid disrupting chemicals to understand whether, or how, in vitro activity of chemicals translates to in vivo outcomes. Additionally, this research will employ existing computational tools such as the octanol-water partition coefficient (logKow) and quantitative structure-activity relationships (QSAR) models to provide deeper interpretation of in vitro data and further prioritize chemicals most likely to impact thyroid function in aquatic systems. The translational principles employed will have much broader applicability across ToxCast HTS assays and aquatic vertebrates.

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

- Learn how innovative in vitro to in vivo extrapolation and reverse toxicokinetic approaches are used to translate effect concentrations measured in laboratory assays to equivalent blood, tissue, or environmental media concentrations.
- Help with designing workflows and applying data analysis pipelines that support automated and standardized analysis of large scientific data sets.
- Gain experience contributing to the development and implementation of data archiving and storage systems for research data management.
- Learn how statistical and performance-based measures are applied to assess assay and data quality through quality assurance and quality control practices.
- Process and analyze large, high-content data sets using established and emerging computational analysis pipelines under mentor guidance.
- Compile and synthesize scientific information from peer-reviewed literature and online data sources to support interpretation of test results within the Adverse Outcome Pathway (AOP) framework.

- Apply statistical analysis approaches such as hypothesis testing, regression methods, multivariate statistics, and concordance analyses to support research objectives.
- Develop familiarity with computational and quantitative methods used in toxicology, exposure science, and data-intensive research environments.
- Build scientific communication skills through preparation and presentation of research findings at regional, national, and international conferences or workshops.
- Contribute to the preparation of peer-reviewed publications and dissemination materials for research partners, collaborators, and stakeholders.
- Gain professional development experience in interdisciplinary research, data analysis, scientific collaboration, and communication of complex scientific findings to diverse audiences.

Learning Objectives: You will learn how to collaborate effectively within a transdisciplinary research team while gaining experience in project planning, scientific communication, research implementation, and data analysis activities. Through collaboration with researchers and staff, you will develop an understanding of how multidisciplinary scientific projects are designed, managed, and executed. You will also have opportunities to learn from and interact with internationally recognized scientific leaders within EPA and across external research organizations and institutions.

You will build knowledge of laboratory, analytical, and computational techniques that are broadly applicable across life sciences research fields. Through hands-on participation and mentorship, you will learn how to operate and use a variety of scientific instruments and equipment and gain familiarity with laboratory and research workflows. You will also learn approaches for evaluating data quality, troubleshooting research results, and applying statistical methods for scientific data analysis, interpretation, and communication. Opportunities may be available to contribute to original research efforts and support the development of scientific publications and related research products.

Mentor(s): The mentor for this opportunity is Sigmund Degitz (degitz.sigmund@epa.gov). If you have questions about the nature of the research, please contact the mentor.

Anticipated Appointment Start Date: Fall 2026. All start dates are flexible and vary depending on numerous factors.

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.

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Citizenship Requirements: This opportunity is available to U.S. citizens and Lawful Permanent Residents (LPR) only.

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 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.

Questions: Please see the FAQ section of our website. If you have additional questions about the application process, please email ORISE.EPA.OCSPP@orau.org and include the reference code for this opportunity.

Qualifications

The qualified candidate should have received a master's or bachelor's degree in one of the relevant fields (Computational Biology, Computational Toxicology, Mathematics, Biostatistics, Computer Science). Degree must have been received within the past five years.

Candidates with a bachelors may be considered if they can demonstrate strong experience.

Preferred skills:

- Computational skills (e.g., programming, R-based statistics)
- Experience designing workflows and applying data analysis pipelines for automated and standardized analysis of large data sets.
- Experience developing and implementing a data archiving and storage system.
- Experience identifying statistical and performance-based measures of assay and data quality and implementing quality assurance and quality control.
- Experience processing and analyzing large, high content, data sets using both existing and novel computational pipelines.
- Experience conducting statistical analyses including the use of hypothesis testing, regression-based approaches, multi-variate statistics, concordance analyses, etc.

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Stipend $50,460.00 – $61,722.00 Yearly

Point of Contact Rachel

Eligibility Requirements

- **Citizenship:** LPR or U.S. Citizen
- **Degree:** Bachelor's Degree or Master's Degree received within the last 60 month(s).
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (12 👁)
  - **Computer, Information, and Data Sciences** (3 👁)
  - **Environmental and Marine Sciences** (7 👁)
  - **Life Health and Medical Sciences** (6 👁)
  - **Mathematics and Statistics** (4 👁)