

**Opportunity Title:** EPA Fellowship on Molecular Microbial Analysis of Water Quality Assessment

**Opportunity Reference Code:** EPA-ORD-CEMM-WECD-2024-01

**Organization** U.S. Environmental Protection Agency (EPA)

**Reference Code** EPA-ORD-CEMM-WECD-2024-01

**How to Apply** *Connect with ORISE...on the GO!* Download the new ORISE GO mobile app in the Apple 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** 1/31/2025 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 currently available at the Environmental Protection Agency (EPA), in the Office of Research and Development (ORD), Environmental Genomics Branch (EGB) located in Cincinnati, Ohio.

**Research Project:** EGB focuses on microbial and chemical risk assessment, relying on big-data approaches to establish the connections between human health and the environment to reduce ecological impacts of nutrient pollution and ensure recreational and drinking water quality. The research participant will have opportunities to participate in multiple research programs including EPA pathfinder innovation project, Regional-ORD Applied Research Program (ROAR), and Safe and Sustainable Water Resources Research Program (SSWR). The research participant will be involved in design and implementation of laboratory experiments, nucleotide sequence data analysis and data interpretation in the communication of results. The research participant will be trained in microbiology, molecular genetics, bioinformatics, statistics for experiment and data analysis.

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

- Acquiring specialized knowledges and techniques related to molecular taxonomy, ecology, microbiology, physiology and immunology, and the bioinformatics processing of DNA/RNA sequencing and qPCR results.
- Collaboratively conducting comparative analyses to investigate the toxicity of cyanotoxins to experimental targets (mice, cell-culture and others), and develop dose-response models and reveal cyanotoxin production mechanisms.
- Designing analysis pipelines and performing analysis of RNA-seq, metagenomics, other

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environmental omics data. Providing biological context and interpretation of NGS data to characterize chemical mode of action.

- Collaboratively contributing to the preparation of peer-reviewed journal articles.

The research participant will be afforded the opportunity to interact with internationally recognized leaders, both within and outside the EPA, in the areas of microbiology, bioinformatics and in ecotoxicogenomics. Under the guidance of a mentor, the research participant will have the opportunity to contribute to and to publish original research. It is expected that this research 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, or international scale and to pursue a professional career in life sciences research.

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

**Anticipated Appointment Start Date: January 3, 2025.** 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 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.

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, 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

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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 be currently pursuing or have received a doctoral degree in the one of the relevant fields. Degree must have been received within the past five years. Candidates currently pursuing must have an anticipated graduation date before the appointment start date.

Preferred skills:

- Solid interdisciplinary knowledge in biology, molecular microbiology, genetics, immunology, ecology, bioinformatics and statistics.
- Detail oriented, able to conduct scientific experiments and analyses with accuracy and precision.
- Interpersonal skills, excellent oral and written communication skills.
- Experience in next-generation sequencing data or other large biological data analysis.

- Eligibility Requirements**
- **Citizenship:** U.S. Citizen Only
  - **Degree:** Doctoral Degree received within the last 60 months or currently pursuing.
  - **Discipline(s):**
    - **Life Health and Medical Sciences** ([51](#) )