Opportunity Title: EPA Postdoctoral Fellowship in Harmful Algal Blooms and Waterborne Pathogens
Opportunity Reference Code: EPA-ORD-CEMM-WECD-2021-02

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 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 11:59:00 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 Environmental Measurement and Modeling (CEMM), Watershed and Ecosystem Characterization Division (WECD) located in Cincinnati, Ohio.

Research Project: WECD provides the science that underlies the measurement of environmental stressors and their interaction with biological systems. This science includes method development, evaluation, and field and laboratory testing. These measurement methods are foundational to the Agency's regulatory programs and stakeholder needs in protecting public health and the environment. The Biological Measurements Branch (BMB) develops and uses methods to detect pathogens and indicators of microbial presence as well as sophisticated data analysis to address critical research questions. The data and tools produced by BMB will be used to develop better risk estimates of human exposures to microorganisms in both the built (e.g., drinking water, indoor air) and natural environments (e.g., source and recreational waters).

BMB research is part of EPA's Safe and Sustainable Water Resources (SSWR) programs, which use an integrated systems

approach to develop scientific and technological solutions to protect human health, and to protect and restore watersheds and aquatic ecosystems.

This research opportunity is focused on assessment and control of harmful algal blooms in source water and recreational water and opportunistic pathogens (e.g., Legionella) in drinking waters utilizing various engineering designs and water management practices. For harmful algal blooms, the studies may include early warning of cyanotoxin production, molecular mechanisms of occurrences and biological controls and characterizations. For opportunistic pathogens in drinking water, the studies may include development of novel methods, community characterization and assessment of risk to health.

Research activities may include:

- Laboratory experiments to evaluate and optimize assays
- Processing samples using culture, animal model and molecular methods (PCR, qPCR, RT-qPCR and deep sequencing for 16S rRNA and mRNA), for waterborne pathogens (legionellae, amoeba, Campylobacter spp., etc.) and cyanobacteria
- Collecting raw data, to QA/QC data, and to make preliminary summary, interpretation and conclusion
- Data analysis using statistical and bioinformatic package
- Manuscript preparations

Learning Objectives: The research participant will have opportunities to learn how to apply microbial molecular technology. The research participant will collaborate with EPA scientists to gain experience in environmental science and engineering. The research participant may have the opportunity to learn the cutting-edge instruments and technologies used at EPA.

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

Anticipated Appointment Start Date: Summer/Fall 2021. 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 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 EPArpp@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 one of the relevant fields. Degree must have been received within five years of the appointment start date.

Preferred skills:

- Experience in molecular biology, microbiology or bioinformatics
- Molecular data analysis for microbial DNA/RNA sequences, statistical models; critical reference review; and basic molecular bench work skills
- Multiple publication records in highly-impacted journals

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Doctoral Degree received within the last 60 months or currently pursuing.
- **Discipline(s):**
  - **Engineering** (2 👁)
  - **Environmental and Marine Sciences** (13 👁)
  - **Life Health and Medical Sciences** (45 👁)
- **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).