

**Opportunity Title:** Microbial Risk Assessment and Monitoring **Opportunity Reference Code:** EPA-ORD-NERL-IO-2020-03

Organization U.S. Environmental Protection Agency (EPA)

#### Reference Code EPA-ORD-NERL-IO-2020-03

How to Apply 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 <u>here</u> for detailed information about acceptable transcripts.
- A current resume/CV, including academic history, employment history, relevant experiences, and publication list
- Two educational or professional references

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

If you have questions, send an email to <u>EPArpp@orau.org</u>. Please include the reference code for this opportunity in your email.

#### Application Deadline 4/8/2020 3:00:00 PM Eastern Time Zone

### **Description** \*Applications will be reviewed on a rolling-basis.

A research opportunity is currently available at the Environmental Protection Agency (EPA), Office of Research and Development (ORD), Center for Public Health and Environmental Assessment (CPHEA), located in **Research Triangle Park, North Carolina**. EPA ORD recently reorganized and this is the newly named Center. This was formerly in the National Exposure Research Laboratory (NERL).

This research opportunity addresses environmental microbial transport including overland, and instream processes in urban ecosystems impacted by aging infrastructures and anthropogenic pressures. This research includes development of empirical statistical models for determination of fecal bacterial concentrations in source waters. As part of this training, the participant will be interacting with other researchers at the EPA/Research Triangle Park campus to identify and conduct studies to understand the risk of exposure to pathogens and identify important parameters for the calibration and verification of exposure models. This research is aligned with studies supporting development of quantitative microbial risk assessment and storm water management.

As part of a team of scientists at ORD that include laboratory, field and modeling team, the research participant may:

- Contribute to the collection and processing of samples from field locations. Sample processing
  includes various types of laboratory analysis such as membrane filtration of water samples,
  and sediment slurries, apply methods for total counts of fecal bacteria, and preparing samples
  for DNA extraction procedures.
- Perform DNA extraction procedures from a variety of matrices including filters from water samples, sediments, and manure
- Learn application of PCR technology to detect functional genes
- · Use of standard techniques to prepare microbial enrichments for pathogen screening
- Learn application of quantitative real-time PCR techniques to determine concentration of environmental microorganisms as well as microbial source tracking markers

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The research participant will learn how to use data to develop statistical or watershed models of microbial contaminants in urban system. The research participant may travel to scientific conferences for presentation of research results.

The mentor for this opportunity is Dr. Marirosa Molina (Molina.marirosa@epa.gov).

#### Anticipated Appointment Start Date: June 1, 2020

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. The initial appointment is for one year, but may be renewed upon recommendation of EPA and is contingent on the availability of funds. The participant will receive a monthly stipend commensurate with educational level and experience. Proof of health insurance is required for participation in this program. The appointment is full-time at EPA in the Research Triangle Park, North Carolina, area. Participants do not become employees of EPA, DOE or the program administrator, and there are no employment-related benefits.

Completion of a successful background investigation by the Office of Personnel Management (OPM) is required for an applicant to be on-boarded at EPA. OPM can complete a background investigation only for individuals, including non-US citizens, who have resided in the US for the past three years.

# If you are interested in this opportunity, please join us for the <u>ORISE Virtual Outreach Fair</u> on March 25 from 12:00-3:00pm (Eastern)!

There will be ORISE representatives and EPA mentors in the EPA booth.

Qualifications The qualified candidate should have received a master's 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:

- Demonstrated education in watershed and/or statistical modeling, preferably of microbial processes or concentrations
- · Demonstrated education and/or experience in microbiology and/or molecular biology
- Knowledge of general microbiological techniques including handling of axenic cultures and isolation of environmental microorganisms
- Knowledge of DNA extraction and clean-up techniques, performance of PCR and qPCR assays (including preparation of standard curves, testing of primer/probe sets and standardization of assays)
- Knowledge of bioinformatics analysis
- Knowledge on the use of field equipment such as multiprobe meters, automatic samplers, weather stations, and measurements of water chemistry parameters
- Excellent oral, written, and electronic communication skills
- Experience with common computer operation and software usage (e.g., Microsoft Office Professional Suite, including Excel, Word and PowerPoint)

Eligibility • Degree: Master's Degree received within the last 60 months or



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**Requirements** anticipated to be received by 6/1/2020 11:59:00 PM.

- Discipline(s):

  - Earth and Geosciences (<u>3</u> ●)
  - Engineering (4\_♥)
  - Environmental and Marine Sciences (14 )
  - Life Health and Medical Sciences (45 ( )
  - Mathematics and Statistics (1. )
- Veteran Status: Veterans Preference, degree received within the last 120 month(s).

Affirmation I certify that I have lived in the United States for the past three years.