Opportunity Title: CDC Waterborne Environmental Microbiology & Engineering Laboratory Fellowship
Opportunity Reference Code: CDC-DFWED-2022-0150

Organization	Centers for Disease Control and Prevention (CDC)
Reference Code	CDC-DFWED-2022-0150
How to Apply	***Connect with ORISE...on the GO!*** Download the new ORISE GO mobile app in the Apple App Store 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
- Transcripts – Click here for detailed information about acceptable transcripts
- A current resume/CV, including academic history, employment history, relevant experiences, and publication list
- One educational or professional recommendation. 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.

Application Deadline	6/1/2022 3:00:00 PM Eastern Time Zone
Description	***Applications will be reviewed on a rolling basis and this opportunity may close before the application deadline.**

CDC Office and Location: A research opportunity is available with the Division of Foodborne, Waterborne, and Environmental Diseases (DFWED) in the National Center for Emerging and Zoonotic Infectious Diseases (NEZID) at the Centers for Disease Control and Prevention (CDC) located in Atlanta, Georgia.

The Centers for Disease Control and Prevention (CDC) is one of the major operation components of the Department of Health and Human Services. CDC works to protect America from health, safety and security threats, both foreign and in the U.S. Whether diseases start at home or abroad, are chronic or acute, curable or preventable, human error or deliberate attack, CDC fights disease and supports communities and citizens to do the same.

Research Project: The Environmental Microbiology and Engineering Laboratory (EMEL) Team in the Waterborne Disease Prevention Branch (WDPB) at the Centers for Disease Control and Prevention in Atlanta, GA is initiating a 12-month project examining the use of next generation sequencing technologies to detect and characterize pathogenic and non-pathogenic microorganisms directly from environmental samples. Among the goals of this project are to develop methods and tools that support microbial profile analysis, pathogen typing, identification of pathogen-associated microbes, and source tracking from environmental samples that can be employed during waterborne disease outbreak investigations or studies.

The CDC EMEL Team is seeking a qualified and motivated

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ORISE fellow to join this project beginning in June 2022. The successful candidate will train and collaborate with senior scientists and laboratory staff to develop and test methods for characterizing environmental water microbiomes using deep metagenomic sequencing and bioinformatic analyses. The candidate may use culture-based and additional culture-independent approaches to study environmental water and associated microbial populations. Other activities may include assisting with field sample collection and supporting waterborne disease outbreak responses, when needed. This project is in partnership with the WDPB Bioinformatics Team, and the successful candidate will conduct research alongside scientists and bioinformaticians in that group.

The primary mission of the WDPB is to conduct applied research to support response and preparedness activities and programs, partner with state and local public health agencies to provide technical and emergency assistance, and build laboratory expertise and capacity. WDPB mission-related scientific work includes domestic and global outbreak investigations, during which clinical, animal, and environmental samples are often collected and processed in our laboratories for the suspected waterborne pathogen as part of root cause analyses. However, the processes of isolating, identifying, and characterizing waterborne pathogens can be very difficult. In efforts to significantly improve outbreak response and investigations, WDPB laboratories have been awarded Advanced Molecular Detection (AMD) funding to support novel research aimed at developing and utilizing new genome-based technologies for the detection and typing of environmental pathogens and characterization of associated matrices.

Learning Objectives: The fellow will have opportunities to train and improve their skills with traditional microbiological methods for waterborne bacteria, identification and typing of bacteria by real-time and digital PCR, whole genome and metagenomic sequencing, and they will learn how to perform basic bioinformatic analyses of sequencing data with the guidance of WDPB bioinformaticians. The fellow will also gain experience collaborating with scientists in other CDC laboratories, teams, and branches, and conducting public health-focused scientific research.

Mentor(s): The mentor for this opportunity is Jeffrey Mercante (wyh5@cdc.gov). If you have questions about the nature of the research please contact the mentor(s).

Anticipated Appointment Start Date: June 2022. Start date is flexible and will depend on a variety of factors.

Appointment Length: The appointment will initially be for one year, but may be renewed upon recommendation of CDC and is contingent on the availability of funds.

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Level of Participation: The appointment is full-time.

Participant Stipend: The participant will receive a monthly stipend commensurate with educational level and experience.

Citizenship Requirements: This opportunity is available to U.S. citizens, Lawful Permanent Residents (LPR), and foreign nationals. Non-U.S. citizen applicants should refer to the Guidelines for Non-U.S. Citizens Details page of the program website for information about the valid immigration statuses that are acceptable for program participation.

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 CDC. Participants do not become employees of CDC, 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.

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 visit our Program Website. After reading, if you have additional questions about the application process please email ORISE.CDC.NCEZID@orau.org and include the reference code for this opportunity.

Qualifications

The qualified candidate should have received a bachelor's, master's, or doctoral degree in one of the relevant fields (e.g. Microbiology, Public Health, Bioinformatics, Biological Sciences), or be currently pursuing one of the degrees with completion by June 2022. Degree must have been received within the past five years.

Master's and doctoral degree candidates are preferred. However, bachelor's degree candidates with equivalent laboratory and bioinformatics experience will also be considered.

Preferred skills:

- Experience with standard microbiological analyses, bacterial culture, and aseptic technique
- Experience or skill in quantitative PCR, next generation and/or third generation sequencing, data analyses, and a basic understanding of bioinformatic analysis

Eligibility
- **Degree:** Bachelor's Degree, Master's Degree, or Doctoral

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Requirements	Degree received within the last 60 months or anticipated to be received by 6/1/2022 11:59:00 PM.

- **Academic Level(s):** Post-Bachelor's, Postdoctoral, or Post-Master's.
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (1 👁)
  - **Engineering** (1 👁)
  - **Environmental and Marine Sciences** (3 👁)
  - **Life Health and Medical Sciences** (16 👁)