

Opportunity Title: CDC Next Generation Sequencing, Metagenomics, and Microbiology Laboratory Fellowship

Opportunity Reference Code: CDC-NCEZID-DFWED-2023-0006

Organization Centers for Disease Control and Prevention (CDC)

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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 4/21/2023 3:00:00 PM Eastern Time Zone

Description *Applications will be reviewed on a rolling basis.

CDC Office and Location: Two laboratory fellowships are currently available in the Culture-Independent and Metagenomic Subtyping group (CIMS) in the Enteric Diseases Laboratory Branch (EDLB) in the Division of Foodborne, Waterborne, and Environmental Diseases (DFWED) in the National Center for Emerging and Zoonotic Infectious Diseases (NCEZID) at the Centers for Disease Control and Prevention (CDC) located in Atlanta, Georgia.

Research Project: To maintain long-term viability, foodborne enteric pathogen outbreak surveillance systems must transition from culture-based methods, which require extensive laboratory work to isolate pathogens from other microbes in a patient stool sample, to molecular techniques compatible with complex metagenomic samples. CIMS is working closely with PulseNet, the National Antimicrobial Resistance Surveillance Team in EDLB, and other partners to develop complete culture-independent workflows covering specimen collection to final pathogen report.

As a part of this work, CIMS is offering two fellowships to support the development and optimization of laboratory procedures utilizing advanced molecular technologies for enteric pathogen surveillance and identification of undiagnosed diarrheal illnesses.

The successful applicant will train with project scientists to develop project plans, interpret data, write protocols, and present results. The fellow will receive extensive laboratory mentoring to develop a robust molecular and microbiological skillset including techniques commonly used in public health laboratories around the USA. Validated best practices resulting from this project will be distributed to public health laboratories.

This appointment involves conducting research with human pathogen isolates and human clinical specimens (primarily stool). Relevant



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vaccinations for interacting with human clinical samples will be required. Extensive biosafety and chemical safety training and oversight will be provided.

Learning Objectives: Training Activities will include:

- Evaluate, develop, and implement a variety of next generation sequencing (NGS) approaches for metagenomic testing of complex specimens for public health deployment
- Operate specialized equipment such as Standard BioTools Juno, Oxford Nanopore MinION, Illumina MiSeq, and Agilent Fragment Analyzer
- Use standard microbiological techniques to safely manipulate primary clinical samples and pathogen isolates
- Extract DNA from pathogen isolates and stool for NGS
- Perform maintenance of shared laboratory spaces and equipment
- Maintain a laboratory notebook and other project related records
- Communicate results to other project scientists and external collaborators

Mentor(s): The mentor(s) for this opportunity Andrew Huang (www8@cdc.gov). If you have questions about the nature of the research, please contact the mentor(s).

Anticipated Appointment Start Date: March 6, 2023. 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.

Level of Participation: The appointment is full-time.

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

Background Check Information: The fellow will be subject to standard federal background investigation, Department of Justice background investigation, and initial and ongoing personnel suitability review.

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.

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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 or master's degree in one of the relevant fields (e.g. **Biological Sciences**), or be currently pursuing one of the degrees nearing completion. Most recent degree must have been received within the past five years.

Preferred Skills:

- One year of relevant microbiology or molecular biology laboratory experience preferred
- Good written and oral communication skills
- Comfortable working in a highly interdisciplinary team environment

Eligibility Requirements

- **Degree:** Bachelor's Degree or Master's Degree received within the last 60 months or currently pursuing.
- **Academic Level(s):** Graduate Students, Post-Bachelor's, Post-Master's, or Undergraduate Students.
- **Discipline(s):**
 - **Life Health and Medical Sciences** ([48](#) )

Affirmation I certify that I have not previously been employed by CDC or by a contractor working directly for CDC. I understand that CDC does not permit individuals with a prior employment relationship with CDC or its contractors to participate as trainees in the ORISE program. (Exceptions may be granted for individuals who, since the previous CDC employment, have obtained a new STEM degree which necessitates training in a new field.)