

Opportunity Title: FDA Summer Internship in Microbiology and Whole Genome Sequencing Metagenomic Analysis

Opportunity Reference Code: FDA-CFSAN-2024-0011

Organization U.S. Food and Drug Administration (FDA)

Reference Code FDA-CFSAN-2024-0011

How to Apply 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

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

If you have questions, send an email to ORISE.FDA.CFSAN@rau.org. Please include the reference code for this opportunity in your email.

Application Deadline 5/7/2024 3:00:00 PM Eastern Time Zone

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

FDA Office and Location: A research opportunity is available within the Food and Drug Administration (FDA) in The Center for Food Safety and Applied Nutrition (CFSAN), Office of Regulatory Science (ORS) located in College Park, Maryland.

The Center for Food Safety and Applied Nutrition, known as CFSAN, provides services to consumers, domestic and foreign industry and other outside groups regarding field programs; agency administrative tasks; scientific analysis and support; and policy, planning and handling of critical issues related to food, dietary supplements, and cosmetics.


Research Project: The goal of this project is to understand differences in soil biodiversity between eastern and western U.S. leafy green growing regions and to identify a potential STEC biological control against STEC contamination of romaine lettuce grown in the western US. DNA will be isolated from soil samples near leafy green growing operations collected either from Yuma, Arizona (western) or Maryland (eastern). Libraries will be constructed using an Illumina Flex kit and shotgun metagenomic sequencing will be done on an Illumina NextSeq 2000 platform. Community-level physiological profiling (CLPP) will be performed using Biolog EcoPlate™. Soil microorganisms will be isolated and identified for potential biological control use with Biolog GenIII microbial identification system and agar plug assay.

Learning Objectives: The participant will receive hands-on training from the mentor in the following tasks during the specified period:

- CFSAN and Division of Microbiology (DM) biosafety




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- procedures for handling pathogenic bacterial cultures
- DM laboratory methods, including generation and analysis of DNA sequence data from foodborne pathogens using Illumina next generation sequencing technologies, Physiological profiling of soil samples using Biolog EcoPlate, GenIII microbial identification and agar plug assay for inhibitory concentration testing.
- Data analyses.
- Assist with data management on all above stated project as well as other research related activities.
- Follow experimental protocols and document findings in a laboratory notebook.
- Communicate with mentors on a daily basis.
- Assist mentors in preparing reports for communicating results to CFSAN, FDA, and the scientific community

Appointment Length: The appointment will initially be for two and a half months, but may be renewed upon recommendation of FDA and is contingent on the availability of funds.

Level of Participation: The appointment is full time.

Citizenship Requirements: This opportunity is available to U.S. citizens,

This program, administered by ORAU through its contract with the U.S. Department of Energy to manage the Oak Ridge Institute for Science and Education, was established through an interagency agreement between DOE and FDA. The participant will receive a monthly stipend commensurate with educational level and experience. Proof of health insurance is required for participation in this program. Participants do not become employees of FDA, DOE or the program administrator, and there are no employment-related benefits.

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

FDA Ethics Requirements

If an ORISE Fellow, to include their spouse and minor children, reports what is identified as a Significantly Regulated Organization (SRO) or prohibited investment fund financial interest in any amount, or a relationship with an SRO, except for spousal employment with an SRO, and the individual will not voluntarily divest the financial interest or terminate the relationship, then the individual is not placed at FDA. For additional requirements, see [FDA Ethics for Nonemployee Scientists](#).

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FDA requires ORISE participants to read and sign their FDA Education and Training Agreement within 30 days of his/her start date, setting forth the conditions and expectations for his/her educational appointment at the agency. This agreement covers such topics as the following:

- Non-employee nature of the ORISE appointment
- Prohibition on ORISE Fellows performing inherently governmental functions
- Obligation of ORISE Fellows to convey all necessary rights to the FDA regarding intellectual property conceived or first reduced to practice during their fellowship
- The fact that research materials and laboratory notebooks are the property of the FDA
- ORISE fellow's obligation to protect and not to further disclose or use non-public information

Qualifications The qualified candidate should be currently pursuing or have received a bachelor's degree in the one of the relevant fields. Degree must have been received within the past five years.

Preferred skills:

- Successfully completed 6 hours of microbiology/biology classes
- Accomplished organizational skills
- Prior wet-bench microbiology experience
- An understanding of research within BSL-2 laboratory
- Excellent written and oral communication skills

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Bachelor's Degree received within the last 60 months or currently pursuing.
- **Academic Level(s):** Post-Bachelor's or Undergraduate Students.
- **Discipline(s):**
 - **Life Health and Medical Sciences** (51 👁)

Affirmation I have lived in the United States for at least 36 out of the past 60 months. (36 months do not have to be consecutive.)

I have read the FDA Ethics Requirements.