Opportunity Title: FDA Fellowship in Research on the Validation of the Enrichment Methods for the Detection of E. coli producing shiga toxin in STECs
Opportunity Reference Code: FDA-CFSAN-2024-0026

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

Reference Code FDA-CFSAN-2024-0026

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

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

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

Application Deadline 10/11/2024 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: Sprouts represent a unique food safety challenge because the proliferation of bacterial pathogens, if present, is enhanced due to the high humidity and the ideal sprouting temperature. Among other foodborne bacterial pathogens as Salmonella spp., and Listeria monocytogenes, Shiga toxin-producing Escherichia coli (STEC), O157: H7, O26, O45, O103, O111, O126, and O145, were identified as foodborne bacterial pathogens of concern, and the focus is on interventions against bacterial foodborne pathogens. Treatments are one approach to reducing microbial contamination but there is currently no treatment that can guarantee pathogen-free seed.

Spent sprout irrigation water (SSIW) has been identified as an appropriate target for microbial testing because water may pick up bacteria as it passes through the production batch, making it easier to detect a contaminated batch. The Produce Safety Rules (PSR) uses the “Equivalent Testing Methodologies for E. coli O157:H7 in SSIW and BAM Chapter 4A for qPCR detection of the targeted genes of O157:H7.” Thus, PSR utilizes a volume of 100 ml for O157:H7 and 375 ml for Salmonella and would like to increase the testing volume of E. coli O157:H7 to 375 ml.

Moreover, PSR would like to have a method for the detection of all the STECs. Therefore, the goal of this study is to develop and validate an enrichment method that will analyze 375 ml of SSIW for all STECs of interest.

Learning Objectives: Under the guidance of a mentor, specific tasks will include but are not limited to:

- Comparison of BAM enrichment and the alternative enrichment methods for the detection of STECs in SSWI.
- Application of culture based and molecular methods for the detection of STECs in SSIW.
- Utilization of different Chrom and selective agars and qPCR for the isolation of STECs.
- Validation of the enrichment method for the detection of STECs in SSIW.
- Maintain laboratory as per guidelines of CFSAN QA/QC.
- Follow all safety guidelines as described in Biosafety in Microbiological and Biomedical Laboratories, 5th Edition or Later (2009, Centers for Disease Control and Prevention, Atlanta, GA).
- The candidate should prepare all the materials (glassware, media, etc..) needed to bring the task into fruition and should expect to have large volumes of samples for analyzing and for validation.
- The lab should remain clean.

Anticipated Start Date: October 1, 2024.

Appointment Length: The appointment will initially be for one year, 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 only.

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.

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 have received a master's degree in one of the relevant fields. Degree must have been received within the past five years.

Preferred skills:

- Lab maintenance.
- Knowledge in microbiology laboratories.
- Good organization skills.
- Knowledge of Excel, Word, PowerPoint, and Image J is a plus.

Point of Contact

Ashley Letson

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Master's Degree received within the last 60 month(s).
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (1 👁)
  - **Communications and Graphics Design** (1 👁)
  - **Life Health and Medical Sciences** (51 👁)
  - **Mathematics and Statistics** (1 👁)

Affirmation

I am a U.S. citizen, or 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.)
and
I have read the FDA Ethics Requirements.