**Opportunity Title:** FDA Research Microbiologist Fellowship
**Opportunity Reference Code:** FDA-CFSAN-2024-0015

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

**Reference Code** FDA-CFSAN-2024-0015

**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@orau.org. Please include the reference code for this opportunity in your email.

**Application Deadline** 5/31/2024 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), Division of Food Processing Science & Technology (DFPST), located in Bedford Park, Illinois.

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:** Presence of pathogenic bacteria in low moisture foods is a significant and increasing problem in the U.S. and elsewhere. Salmonella has been linked to nationwide outbreaks and recalls involving a broad range of products, including almonds, black pepper, hazelnuts, peanut products, pistachios, pet food, soy products, and breakfast cereal. Additionally, enterohemorrhagic Escherichia coli (EHEC) and Listeria monocytogenes are increasingly implicated in outbreaks and/or recalls linked to low-moisture foods, including nut products and wheat flour. Finally, Cronobacter sakazakii has been implicated in outbreaks/recalls in powdered infant formula products.

In 2000, the CDC reported that 18 and 19% of food-borne diseases caused by bacterial pathogens in the years 1993–1997 in the U.S. were associated with contaminated equipment and poor hygiene practices, respectively. Although outbreaks can result from extensive growth at abusive storage temperatures, insufficient cooking, etc. there are a significant number that have

been associated with bacterial cross-contamination events. Cross-contamination refers to the transfer, direct or indirect, of pathogens from a contaminated product or a piece of equipment to a non-contaminated product. Bacterial cross-contamination can occur through a variety of routes including air-to-food, surface-to-food, and surface-to-food in liquid transfer. Research is needed to understand and model contaminant transfer events to devise methods for preventing them. In addition, research is needed to evaluate sanitation controls at preventing cross-contamination.

**Learning Objectives:** The participant will also be trained in the use of processing equipment, sanitation methods and pathogen detection methods and will participate as a member of a team that will investigate the efficacy of survival and transfer of pathogens in a low moisture environment to food. The project will also investigate sanitation and its impact on reducing the risk of pathogen contamination in low moisture foods. Over the course of the year the participant will obtain training, as needed, on use of conventional and molecular assays for detection and enumeration of pathogens, and for operating lab- and pilot-scale processing equipment.

It is anticipated that through this fellowship, the participant will receive training and:

- Assist in the creation of mathematical models to model pathogen transfer to food
- Use of analytical methods for detection of pathogens in food
- Use of different cleaning and sanitation methods used in low water activity environments
- Development and use of modeling to predict growth and inactivation of pathogens
- Presentation and writing of research presentations and papers

**Anticipated Start Date: 6/1/2024.**

**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 and Lawful Permanent Residents (LPR) only.

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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 bachelor's or master's degree in the one of the relevant fields (e.g. microbiology, food science, biology, food engineering or a related field) or be currently pursuing the degree with completion by May 31, 2024. Degree must have been received within the past five years.

**Preferred skills:**

- Qualified candidates with strong academic records and hands-on experience in microbiology laboratories are especially desired
- Experience in the areas of general and food microbiology

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- Familiar with using assays including conventional and molecular assays for detection, identification, enumeration, and characterization of pathogens in food; growth rates; metabolic profiling; and genotyping
- Assist in the operation of equipment used to process foods and will interpret and evaluate the results of analyses to determine validity and scientific significance
- Experience in generating charts and graphs to illustrate the data
- Excellent verbal and written communication skills are highly desired

**Eligibility Requirements**

- **Citizenship:** LPR or U.S. Citizen
- **Degree:** Bachelor's Degree or Master's Degree received within the last 60 months or anticipated to be received by 5/31/2024 11:59:00 PM.
- **Academic Level(s):** Graduate Students, Post-Bachelor's, Post-Master's, or Undergraduate Students.
- **Discipline(s):**
  - **Engineering** (27 👁)
  - **Life Health and Medical Sciences** (5 👁)

**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.