Opportunity Title: USDA-ARS Postdoctoral Research- Detection and Characterization for Foodborne Pathogens
Opportunity Reference Code: USDA-ARS-NEA-2026-0420

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-NEA-2026-0420

How to Apply ***To submit your application, scroll to the bottom of this opportunity and click APPLY.***

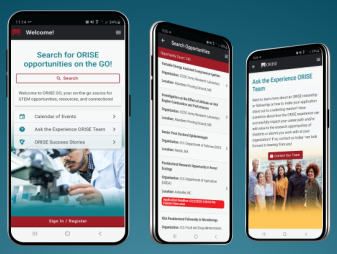
A complete application consists of:

- An application
- Transcript(s) – For this opportunity, an unofficial transcript or copy of the student academic records printed by the applicant or by academic advisors from internal institution systems may be submitted. Click here for detailed information about acceptable transcripts.
- A current resume/CV, including academic history, employment history, relevant experiences, and publication list
- Two educational or professional recommendations
- A copy of an abstract or reprint of an article

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

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Application Deadline 1/1/2027 3:00:00 PM Eastern Time Zone

Description ***Applications are reviewed on a rolling-basis.**

ARS Office/Lab and Location: A research opportunity is currently available with the U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS), located in Wyndmoor, Pennsylvania.

The Agricultural Research Service (ARS) is the U.S. Department of Agriculture's chief scientific in-house research agency with a mission to find solutions to agricultural problems that affect Americans every day from field to table. ARS will deliver cutting-edge, scientific tools and innovative solutions for American farmers, producers, industry, and communities to support the nourishment and well-being of all people; sustain our nation's agroecosystems and natural resources; and ensure the economic competitiveness and excellence of our agriculture. The vision of the agency is to provide global leadership in agricultural discoveries through scientific excellence.

Research Project: A postdoctoral research opportunity focused on the development of novel detection methods for foodborne pathogenic bacteria is available at the USDA, Agricultural Research Service, Eastern Regional Research Center, Characterization and Interventions for Foodborne Pathogens (CIFP) Research Unit in Wyndmoor, Pennsylvania. The mission of the CIFP research unit is to investigate multiple areas of safety-related problems associated with contamination of food by bacterial pathogens and includes: stress response, evolution/mutation, biofilm formation,

antimicrobial resistance, intervention techniques, and rapid detection & identification. The research project in this subgroup focuses on the development of rapid, field-deployable detection methods for specific foodborne pathogenic bacteria (e.g., Shiga toxin-producing E. coli, Salmonella, Listeria monocytogenes). Analysis is typically complicated by the complex nature of food matrices and the frequent need to detect very low numbers of targeted pathogens amongst relatively high numbers of generally benign background flora. In addition, culture enrichment is expected to be avoided as both increased cost and lengthy analysis times are prohibitive.

Specific project activities include the isolation of pathogenic bacteria from foods, employment of gold-standard molecular detection methods such as quantitative polymerase chain reaction to use as a baseline for comparison with novel detection methods, evaluating and troubleshooting new assay designs, and applying *omics* technologies (*e.g.*, genomics, transcriptomics, etc.) and bioinformatic analyses for the identification of unique targets that can be incorporated into rapid diagnostic testing platforms.

Learning Objectives: During the appointment, you will;

- Learn about food safety research focused on the detection and characterization of foodborne pathogenic bacteria.
- Participate in research developing rapid, field-deployable diagnostic methods for pathogens such as Shiga toxin-producing E. coli, Salmonella, and Listeria monocytogenes.
- Gain experience addressing analytical challenges associated with complex food matrices and low-level pathogen detection in the presence of background microbial flora.
- Learn about the isolation and characterization of pathogenic bacteria from food samples.
- How to apply gold-standard molecular detection techniques, including quantitative polymerase chain reaction (qPCR), for comparison and validation of novel diagnostic assays.
- How to evaluate, optimize, and troubleshoot new assay designs to improve sensitivity, specificity, and practical deployment.
- Gain experience with omics technologies and bioinformatic analyses such as genomics and transcriptomics to identify unique molecular targets for rapid diagnostic platforms.
- Develop interdisciplinary skills in microbiology, molecular biology, bioinformatics, and food safety diagnostics.

Mentor(s): The mentor for this opportunity is Cheryl Armstrong (cheryl.armstrong@usda.gov). If you have questions about the nature of the research, please contact the mentor(s).

Anticipated Appointment Start Date: 2026/2027. 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 ARS 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. **The anticipated stipend is $6,857 monthly.**

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

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 ARS. Participants do not become employees of USDA, ARS, 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.

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

Qualifications The qualified candidate should have received or be currently pursuing a doctoral degree in one of the relevant fields. Preference placed on degrees already received.

Preferred skills:

- Sterile technique
- BSL2 pathogen handling
- Knowledge of the polymerase chain reaction (PCR)
- Molarity calculations for solutions
- Food safety sampling techniques
- Rapid method development and validation
- Sample preparation for food safety analysis

Stipend $6,857.00 Monthly

Point of Contact Janeen

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Doctoral Degree.
- **Discipline(s):**
  - **Engineering** (2 👁)
  - **Life Health and Medical Sciences** (12 👁)