Opportunity Title: USDA-ARS Postdoctoral Research Fellowship in Agricultural and Biological Engineering
Opportunity Reference Code: USDA-ARS-NEA-2025-0224

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-NEA-2025-0224

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
- Provide the contact information of two educational or professional references

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

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Application Deadline 12/14/2025 2:45:14 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 at ARS Food Quality Laboratory at the Beltsville Agricultural Research Center in Beltsville, Maryland.

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: The goal of the project is to develop knowledge and readily available technology for solving quality issues associated with fruits and vegetables to reduce postharvest losses and improve sensory, nutritional and functional quality. Appointment activities may include:

- Assess postharvest practices, biological processes and environmental conditions impacting the shelf life of produce at the retail terminus.

- Develop instrumental analysis techniques (e.g., HPLC, HPLC/MS) and laboratory methods to evaluate postharvest quality traits and to analyze bioactive compounds, nutrients and minerals.
- Test, refine and validate existing mass transfer models developed at USDA-ARS, or develop new models to analyze the dynamics of sanitizers and organic materials in a pilot-scale produce wash system.
- Investigate options to lower energy consumption and carbon intensity of downstream aspects of the production of packaged leafy greens.

Learning Objectives: Under the guidance of a mentor(s), the selected participant will play a role in a multi-disciplinary research team. Roles can be tailored based on the participant's technical strengths. Mentor(s) will provide opportunities for continuous learning, including, but not limited to:

- Proficiency in instrumental analysis and testing/developing laboratory methods.
- Ability to perform effectively on food processing at the bench and pilot-scales
- Ability to perform on growth chambers and greenhouse units.
- Learn computational approaches to mass transfer considerations and fluid dynamics at the bulk and surface levels of a produce wash system.

Mentor(s): The mentor for this opportunity is Atilio DeFrias (atilio.defrias@usda.gov). If you have questions about the nature of the research, please contact the mentor(s).

Anticipated Appointment Start Date: 2025/2026. 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.

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 a doctoral degree in one of the relevant fields.

Preferred skills/interests:

- Food product development
- Mass transfer analysis
- Instrumental analysis (e.g.,HPLC and HPLC/MS)
- Wet-laboratory skills
- Process engineering
- Energy and/or bioenergy management
- Proficiency in scientific writing
- Proven track record of publications in peer-reviewed journals
- Strong communication skills as demonstrated by a track record of presentations and posters

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Doctoral Degree received within the last 60 month(s).
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (1 👁)
  - **Communications and Graphics Design** (1 👁)
  - **Engineering** (4 👁)
  - **Life Health and Medical Sciences** (3 👁)