Opportunity Title: USDA ARS ORISE Research Fellowship in Agricultural Engineering Research
Opportunity Reference Code: USDA-ARS-MWA-2025-0111

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-MWA-2025-0111

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

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

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Application Deadline 11/7/2025 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). The opportunity is remote, but the participant will visit the location at Wooster, Ohio once per month.

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: Increasing pesticide deposits to effectively protect specialty crops—such as apples, grapes, peaches, and others— while minimizing spray drift is a challenging task due to the many factors that influence deposits. A careful investigation into the effects of these factors on spray deposits within the crop canopy is needed to maximize deposits while minimizing pesticide spray drift. The primary objective of this project is to identify key sprayer operation parameters for a next-generation electric orchard sprayer to enhance spray deposition on crops and reduce drift. Under the guidance of a mentor, the research fellow will examine the effects of operational parameters—such as wind speed and direction, air-assist airflow, spray

droplet size, canopy density, and spray pressure—on both crop canopy deposition and spray drift, using a wind tunnel experiment to identify key influential factors. Once these parameters are identified, the research fellow will have the opportunity to contribute to the development of a control model based on the data and integrate it into the sprayer system. The sprayer equipped with the model will then be evaluated in a field to validate the model performance in increasing spray deposits and reducing drift compared to a conventional sprayer.

Learning Objectives: The participant will have the opportunity to develop or enhance their experience with experimental design and modeling as well as develop scientific networking, project management and career development skills through participation in scientific meetings, and ample opportunity to interact with academic and industry stakeholders.

Mentor(s): The mentor for this opportunity is Hongyoung Jeon (hongyoung.jeon@usda.gov). If you have questions about the nature of the research, please contact the mentor(s).

Anticipated Appointment Start Date: September 2025. Start date is flexible and will depend on a variety of factors.

Appointment Length: The appointment will initially be for 8 months 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 range is $4,500 - $5,000 per month.**

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.Midwest@orau.org and include the reference code for this opportunity.

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

Preferred skills:

- CFD model development experience
- Matlab experience

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- Fluorescence instrument experience
- Wind tunnel experience

Stipend $4,500.00 – $5,000.00 Monthly

Point of Contact Janeen

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Doctoral Degree.
- **Discipline(s):**
  - **Engineering** (2 👁)