

Opportunity Title: USDA-ARS Postdoctoral Fellowship in Soil Water and Air Resources

Opportunity Reference Code: USDA-ARS-MWA-2026-0073

Organization U.S. Department of Agriculture (USDA)

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How to 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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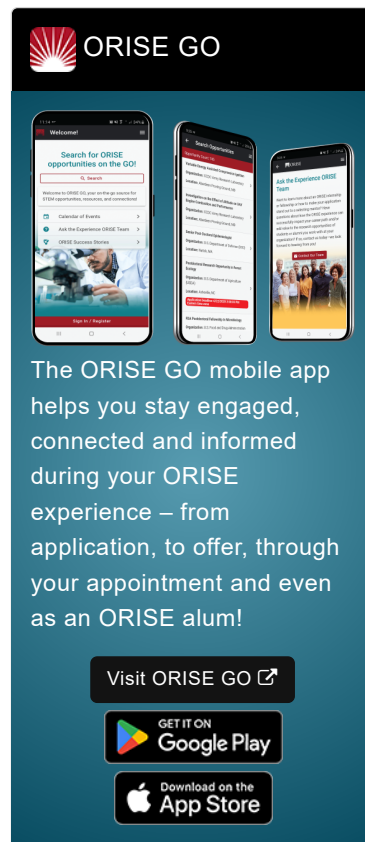
Application Deadline 4/10/2026 3:00:00 PM Eastern Time Zone

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 Ames, Iowa.

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 fellow, in concert with scientists at the National Laboratory of Agriculture and Environment (NLAE) in Ames, Iowa, will conduct research to advance the goals of the laboratory: to enhance the understanding of the soil-plant-atmosphere system and apply that knowledge to develop improved tools and practices that address the challenges facing the agricultural community. Under the guidance of a mentor, the fellow will participate in a project that combines both in-situ and remote sensing data to develop novel monitoring techniques to measure within-field variability in evapotranspiration (ET) and other surface fluxes. Also, as a part of this project, the fellow will have the opportunity to apply those techniques to quantify the role of the canopy and other environmental



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Resources

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factors in regulating these exchange processes in diverse cropping systems ranging from row crops to agroforestry. There will be significant flexibility for the fellow, in collaboration with the mentor and other project members, to refine the focus of these activities based on the knowledge base, skill sets, and interest of the participant. The fellow, with the support of the mentor, will be encouraged to establish robust collaborative relationships with scientists at NLAE and other ARS locations as well as with university and industry partners. The fellow will have the opportunity to publish the research in the appropriate peer-reviewed journals and communicated to stakeholders and the broader scientific community through participation in conferences and meetings.

Learning Objectives: By collaborating closely with the mentor and other scientists at NLAE, the fellow will enhance their ability to develop and execute multi-faceted multi-disciplinary experimental designs, communicate effectively with the agricultural and scientific communities, and both present and publish research results. Specifically, the fellow will have the opportunity to:

- Enhance field-based research skills by deploying and maintaining micrometeorological, soil, and plant physiological sensor systems to monitor environmental and crop dynamics.
- Strengthen data management and analysis competencies through the collection, processing, and management of large micrometeorological and remotely sensed datasets, as well as the analysis of soil and plant samples.
- Advance experimental design techniques by developing, evaluating, and refining innovative measurement methods to monitor evapotranspiration (ET) and other surface fluxes at sub-field scales using both in-situ and remotely sensed data.
- Apply remote sensing models to estimate ET and surface fluxes using high-resolution imagery collected via UAV, integrating cutting-edge technology into agricultural research.
- Utilize geospatial and statistical tools to conduct analyses that quantify the relationship between ET, canopy properties, and environmental conditions, fostering deeper insights into exchange processes.
- Interpret findings to inform agricultural practices by providing recommendations on the effectiveness of sub-field measurement techniques and their application to improve agricultural management strategies.
- Enhance communication skills by sharing research findings with diverse audiences, including farmers, scientific peers, and industry stakeholders, through presentations at conferences and meetings.
- Contribute to scientific literature by documenting research activities and publishing results in peer-reviewed journals, furthering the dissemination of knowledge in the field of agricultural science.

Mentor(s): The mentor for this opportunity is Joseph Alfieri (joe.alfieri@usda.gov). If you have questions about the nature of the

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research, please contact the mentor(s).

Anticipated Appointment Start Date: 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. **The anticipated stipend is \$8,734 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.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. Degree must have been received within the past five years, or anticipated to be received by 5/31/2026.

Preferred skills:

- Proficiency with Matlab and Microsoft software.
- Familiarity with ArcGIS and statistical analysis tools is also advantageous.
- Experience calibrating, deploying, and maintaining meteorological, soils, and plant monitoring instruments and dataloggers in agricultural systems.
- Familiarity with soil, water, and plant sampling methods is also advantageous.
- Ability to conduct field activities that require physical exertion (recurring walking, repeated bending, standing for prolonged periods, and lifting and carrying instruments and materials weighing up to 30 kg) for extended periods under diverse weather conditions.
- Possesses the strong oral and written communication skills necessary

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Resources

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to document research activities, to communicate clearly and effectively with other researchers, present and report results to other scientists and stakeholders, and generate manuscripts for peer-reviewed publication.

- Familiarity with data post-processing, quality control, and management of data sets collected via micrometeorological techniques, such as eddy covariance, would be advantageous.
- Experience using remote sensing data, models, such as TSEB, and analysis tools is advantageous.

Stipend \$8,734.00 Monthly

Point of Contact [Janeen](#)

Eligibility • **Citizenship:** U.S. Citizen Only

- Requirements**
- **Degree:** Doctoral Degree received within the last 60 months or currently pursuing.
 - **Discipline(s):**
 - **Earth and Geosciences** ([3](#) 👁)
 - **Environmental and Marine Sciences** ([3](#) 👁)
 - **Life Health and Medical Sciences** ([3](#) 👁)
 - **Physics** ([1](#) 👁)
 - **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).