

Opportunity Title: USDA-ARS Postdoctoral Fellow – AI for Integrated Weed Science and Breeding

Opportunity Reference Code: USDA-ARS-MWA-2026-0389

Organization U.S. Department of Agriculture (USDA)

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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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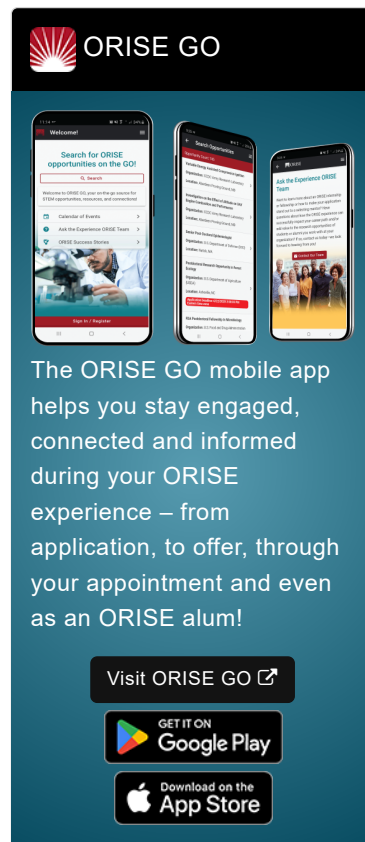
Application Deadline 12/4/2026 3:00:00 PM Eastern Time Zone

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 Urbana, Illinois.

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: This ORISE fellowship offers an opportunity to advance Integrated Weed Science and crop-breeding innovation through artificial intelligence and data-driven approaches. You will help develop machine-learning tools that enhance decision-making for weed management across the U.S. Cornbelt and key soybean-growing regions. The project brings together multi-institutional herbicide-performance datasets, environmental and management variables, and crop-yield outcomes to build predictive, interpretable models that support agricultural resilience. You will use large datasets to evaluate herbicide efficacy, assess the impacts of tillage and



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crop rotation, and model yield losses under variable weather conditions. The appointment will also involve integrating environmental and management data sources and effectively communicating research outcomes to scientific collaborators and stakeholder audiences.

Learning Objectives: Under the guidance of a mentor, you will be able to learn to: apply artificial intelligence, statistical modeling, and agricultural data science, develop methods in predictive analytics, computational agronomy, and evaluate decision-support tool development for modern weed science and crop-breeding applications.

Mentor(s): The mentor for this opportunity is Zhanyou Xu (zhanyou.xu@usda.gov). If you have questions about the nature of the research, please contact the mentor(s).

Anticipated Appointment Start Date: December 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.

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 master's or doctoral degree in the one of the relevant fields.

Preferred skills:

- Background in machine learning, artificial intelligence, or statistical modeling applied to agricultural or biological systems.
- Experience with large, multi-source agricultural datasets (environmental, management, yield, and herbicide-performance data).
- Skills in predictive modeling, quantitative analysis, and data integration across heterogeneous datasets.

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- Familiarity with computational agronomy, weed science, crop breeding, or related plant-science disciplines.
- Experience with programming languages commonly used for data science (e.g., Python or R).
- Experience or interest in image-based phenotyping using **satellite imagery and UAV (drone) image data**.
- Communication skills, such as presenting research outputs to scientific collaborators and stakeholder audiences.

Stipend \$70,000.00 – \$90,000.00 Yearly

Point of Contact [Michele](#)

- Eligibility**

Requirements
- **Citizenship:** U.S. Citizen Only
 - **Degree:** Master's Degree or Doctoral Degree.
 - **Discipline(s):**
 - **Chemistry and Materials Sciences** ([5](#)👁)
 - **Computer, Information, and Data Sciences** ([17](#)👁)
 - **Engineering** ([1](#)👁)
 - **Life Health and Medical Sciences** ([51](#)👁)
 - **Mathematics and Statistics** ([11](#)👁)