

**Opportunity Title:** USDA-ARS Postdoctoral Fellowship: Automated Field Phenotyping for Crop Stress Detection

**Opportunity Reference Code:** USDA-ARS-NEA-2026-0158

**Organization** U.S. Department of Agriculture (USDA)

**Reference Code** USDA-ARS-NEA-2026-0158

**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** 6/19/2026 3:00:00 PM Eastern Time Zone

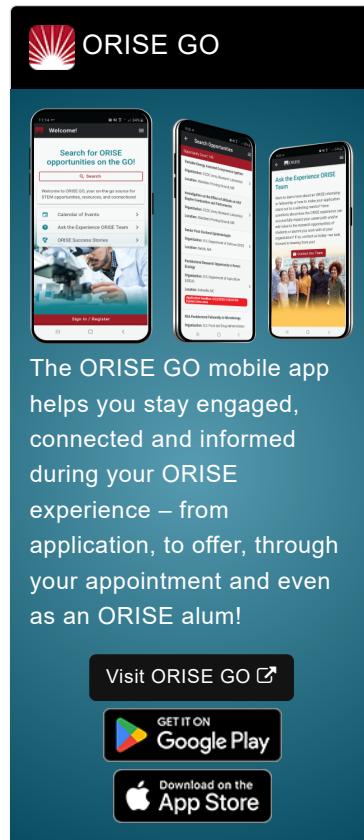
**Description** \*Applications are reviewed on a rolling-basis.

**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 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.


The Adaptive Cropping Systems Laboratory (ACSL) at USDA-ARS Beltsville Agricultural Research Center (BARC) in Beltsville, MD conducts a combination of modeling and experimental research focusing on crop and soil response to abiotic factors and agroecosystems management.


**Research Project:** During the appointment, you will assist in developing customizable field-based irrigation and nutrient management decision support tools, guided by automated field-based phenotyping systems. Research directly addresses American farmers' need for innovative


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agricultural technologies and management systems to optimize resource use, mitigate abiotic stress impacts, and improve farm profitability. This research aims to bridge cutting-edge science with practical solutions to support production of nutritious foods across the United States and secure a healthy future. You will be part of a research team responsible for developing and testing a novel automated field-based high throughput phenotyping system. You will also assist in conducting experimental design, data collection from field experiments, and data analysis.

Research will focus on two components:

1. Developing a field-based automated phenotyping platform integrating multi-modal remote sensing datastreams, including hyperspectral reflectance, sun-induced chlorophyll fluorescence (SIF), RGB imagery, and canopy temperature; and
2. Applying the platform to detect water and nutrient stress in field crops.

Outputs from the platform will be input to ACSL crop models to provide management decision recommendations. You will collaborate directly with scientific staff to implement experiments and evaluate stress detection and decision support recommendation accuracy. Field data collection will include automated phenotyping measurements, as well as crop development, phenology, photosynthesis, and yield.

**Learning Objectives:**

During the appointment, you will;

- Gaining experience with designing and implementing field-based phenotyping platform considering scientific research goals, Mid-Atlantic climate variability, and grower needs
- Learning/mastering analysis of remote sensing data and interpretation of results for crop water and nutrient stress detection
- Understanding abiotic and agronomic factors influencing plant performance with the guidance of the mentor
- Gaining experience with communication skills by presenting research findings to stakeholders and fellow scientific investigators

**Mentor(s):** The mentor for this opportunity is Christine Chang ([christine.chang@usda.gov](mailto:christine.chang@usda.gov)). If you have questions about the nature of the research, please contact the mentor(s).

**Anticipated Appointment Start Date: September 1, 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**

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**stipend range is \$63,940 - \$68,202 annually.**

**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@ornl.gov](mailto:ORISE.ARS.Northeast@ornl.gov) and include the reference code for this opportunity.

**Qualifications** The qualified candidate should have received or be currently pursuing a doctoral degree in the one of the relevant fields (e.g. plant physiology, remote sensing, agricultural engineering, or a related field). Degree must have been received within the past three years or is anticipated to be received by 9/1/2026.

**Preferred skills:**


- Experience with agricultural field experiments, including experimental design and data collection
- Remote sensing and/or physiological data collection from plants, preferably related to agricultural production and crop stress
- Design of modular sensing systems (hyperspectral spectrometers, digital cameras, and robotics) for field-based phenotyping
- Data management and analytics from multi-stream remote sensing platforms

**Preferred willingness to learn:**

- Use of Python, CRBasic, Matlab, C++, R, or other programming language for automated data collection, analyses and visualization are recommended
- Teamwork, communication, and organization skills





**Stipend** \$63,940.00 – \$68,202.00 Yearly

**Point of Contact** [Janeen](#)

- Eligibility Requirements**
- **Citizenship:** U.S. Citizen Only
  - **Degree:** Doctoral Degree received within the last 36 months or anticipated to be received by 9/1/2026 12:00:00 AM.
  - **Discipline(s):**
    - **Computer, Information, and Data Sciences** ([3](#) )

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- **Engineering** ([6](#) )
- **Environmental and Marine Sciences** ([5](#) )
- **Life Health and Medical Sciences** ([8](#) )
- **Physics** ([2](#) )