Opportunity Title: USDA-ARS Image Based Soil Health Analysis Postdoctoral Fellowship
Opportunity Reference Code: USDA-ARS-PWA-2026-0409

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-PWA-2026-0409

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

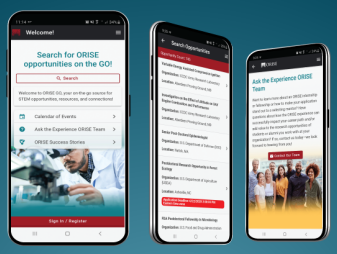
Description ***Applications are reviewed on a rolling-basis and applications may close before the deadline.**

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 Corvallis, Oregon. This fellowship will require at least monthly travel to Washington, California, and/or Illinois to collect data. Data collection facilities include synchrotron light sources in CA and IL, and vineyards in OR and WA.

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: You will use a variety of sensor technologies including x-ray computed tomography, rgbd cameras, hyperspectral cameras, etc. mounted on a variety of imaging platforms to investigate the effects of soil health management practices on soil health metrics, crop yield, and quality under the guidance of a mentor at the Horticultural Crop Production and Genetic Improvement Research Unit in Corvallis, OR. You will collaborate with researchers to enable data collection (x-ray instruments, imaging boxes, robot mounted cameras, etc.) and high

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throughput image data analysis from a variety of imaging modalities in the Python programing language. Processes for high throughput image data analysis will be developed on a variety of platforms including Department of Energy and Department of Agriculture computing clusters, local computing systems, and edge computing systems. You will collaboratively generate manuscripts for peer-reviewed publication based on the results of these processes.

Learning Objectives: Under the guidance of a mentor, you will:

- Learn to use advanced sensor and imaging technologies—including X-ray computed tomography, RGB-D cameras, and hyperspectral cameras—to study agricultural systems.
- Gain experience evaluating how soil-health management practices affect soil-health indicators, crop yield, and crop quality.
- Develop skills in collecting image data using X-ray instruments, imaging boxes, robot-mounted cameras, and other field or laboratory imaging platforms.
- Help build high-throughput image-processing and analysis workflows in Python across multiple imaging modalities.
- Learn to develop scalable computational pipelines for local systems, edge-computing devices, and Department of Energy and Department of Agriculture computing clusters.
- Gain experience collaborating with crop-production, genetics, engineering, and data-science researchers.
- Strengthen scientific writing and communication skills through collaborative development of peer-reviewed research manuscripts.

Mentor(s): The mentor for this opportunity is Devin Rippner (devin.rippner@usda.gov). If you have questions about the nature of the research, please contact the mentor(s).

Anticipated Appointment Start Date: January 4, 2027. 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

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additional questions about the application process, please email ORISE.ARS.PacificWest@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 12/31/2026.

Preferred skills:

- Deep interest in applying imaging technologies to quantify soil and plant processes important for optimizing agricultural production.
- Creatively implement a variety of ML/DL based image processing and analysis pipelines in Python (or equivalent) using a variety of computing platforms spanning the edge to HPC continuum.
- Comfortable operating instrumentation in U.S. National Laboratory facilities and in the vineyard, trouble shooting autonomous sensing platforms.
- Previous experience publishing the results of their research efforts in peer-reviewed journals.
- Previous experience using x-ray computed tomography and/or developing autonomous image collection platforms is a major plus.

Stipend $6,705.00 Monthly

Point of Contact Janeen

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Doctoral Degree received within the last 60 months or anticipated to be received by 12/31/2026 12:00:00 AM.
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (12)
  - **Communications and Graphics Design** (1)
  - **Computer, Information, and Data Sciences** (17)
  - **Earth and Geosciences** (21)
  - **Engineering** (29)
  - **Environmental and Marine Sciences** (14)
  - **Life Health and Medical Sciences** (51)
  - **Mathematics and Statistics** (11)
  - **Physics** (16)
  - **Science & Engineering-related** (2)
  - **Social and Behavioral Sciences** (2)
- **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).