Opportunity Title: USDA-ARS Postdoctoral Fellowship in Agricultural Systems and Modeling

Opportunity Reference Code: USDA-ARS-NEA-2024-0290

Organization	U.S. Department of Agriculture (USDA)
Reference Code	USDA-ARS-NEA-2024-0290
How to Apply	***To submit your application, scroll to the bottom of this opportunity and click APPLY.***

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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
- A copy of an abstract or reprint of an article

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

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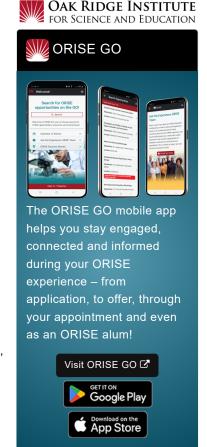|	
Application Deadline	2/24/2025 3:00:00 PM Eastern Time Zone
Description	***Applications are reviewed on a rolling-basis.**

ARS Office/Lab and Location: A research opportunity is currently available with the U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS), 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.

Adaptive Cropping Systems Laboratory's mission includes sustainable and resilient crop production systems based on quantifying and modeling genetic, environmental, and management factors, supported by experimental research and the development and application of process-based models.

Research Project: The participant will research improving and testing process-based crop models. The specific research activities will be focused on incorporating abiotic factors into process-based crop models. The

existing crop models that are developed at the USDA ARS Adaptive Cropping Systems Laboratory include process-based models that already account for various processes (soil, crop, various stresses, management, atmospheric processes, genetics, etc.).

Learning Objectives: Under the guidance of a mentor, the participant will gain experience and learn about:

- Researching and improving these aforementioned models to incorporate abiotic factors such as excessive water, extreme temperature, hail, and wind damage.
- Conducting literature searches and develop modeling methodologies, followed by model development, testing, comprehensive modeling studies, and preparation of research reports and publications.

Mentor(s): The mentor for this opportunity is VR Reddy (vr.reddy@usda.gov). If you have questions about the nature of the research, please contact the mentor(s).

Anticipated Appointment Start Date: December 2, 2024. 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.

Citizenship Requirements: This opportunity is available to U.S. citizens, Lawful Permanent Residents (LPR), and foreign nationals. Non-U.S. citizen applicants should refer to the Guidelines for Non-U.S. Citizens Details page of the program website for information about the valid immigration statuses that are acceptable for program participation.

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

Qualifications The qualified candidate should have received a doctoral degree in soil-crop modeling, soil science, agricultural engineering, environmental engineering,

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hydrology, plant physiology, or a related field or be pursuing the degree with
an anticipated degree completion date prior to the start of appointment.

Preferred skills:

- Understanding crop responses to soil, climate, and biotic and abiotic
  stresses;
- Knowledge of simulation models related to agriculture, crops, soil, and
  groundwater;
- Experience with simulation model development and programming
  languages such as FORTRAN, C++, R, or Python.

Eligibility Requirements

- **Degree:** Doctoral Degree.
- **Discipline(s):**
  - **Earth and Geosciences** (1 👁)
  - **Engineering** (3 👁)
  - **Environmental and Marine Sciences** (4 👁)
  - **Life Health and Medical Sciences** (5 👁)
  - **Mathematics and Statistics** (1 👁)

Affirmation   I affirm that:

- I am a US Citizen, OR
- I am a non-US citizen currently living in the United States