Opportunity Title: USDA-ARS Postdoctoral Fellowship Characterizing Spatio-Temporal Variability in Agricultural Systems
Opportunity Reference Code: USDA-ARS-NE-2024-0101

Organization	U.S. Department of Agriculture (USDA)
Reference Code	USDA-ARS-NE-2024-0101
How to Apply	***Connect with ORISE...on the GO!*** Download the new ORISE GO mobile app in the Apple App Store or Google Play Store to help you stay engaged, connected, and informed during your ORISE experience and beyond!

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.

Application Deadline	7/5/2024 11:59:00 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), Pasture Systems and Watershed Management Research Unit, located in University Park, Pennsylvania.

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 U.S. Department of Agriculture - Agricultural Research Service (USDA ARS) mission involves problem-solving research in the widely diverse food and agricultural areas encompassing plant production and protection; animal production and protection; natural resources and sustainable agricultural systems; and nutrition; food safety; and quality. The programs are conducted in 46 of the 50 States, Puerto Rico, and the U.S. Virgin Islands. For ARS to maintain its standing as a premier scientific organization, major investments in computing, networking, and storage infrastructure are required. Training in data and information management

are integral to the integrity, security, and accessibility of research findings, results, and outcomes within the ARS research enterprise. Nearly 2000 scientists and support staff conduct research within the ARS research enterprise.

Research Project: The USDA-ARS Long-Term Agroecological Research Network offers research opportunities to motivated postdoctoral fellows interested in collaborating on agricultural-related problems at a range of spatial and temporal scales, from the genome to the continent, and sub-daily to evolutionary time scales. This collaborative multi-disciplinary project will build on the research of the LTAR Regionalization Project to develop tools and guidelines for deploying sensor networks and assessing completeness of observational datasets for monitoring spatially and temporally variable processes at local, regional, and national or international scales.

Under the guidance of a mentor, the participant will gain experience in modeling the spatial and temporal variability in agricultural systems, focusing initially on weather and soils as crucial components of agroecosystem research. Training opportunities will be developed based on prior expertise in agricultural or quantitative fields. The participant will learn a range of computational skills needed to conduct complex analyses of climate, land use, and other geospatial data in a cloud- and high performance computing-based environments, including machine learning approaches, geostatistics, and spatio-temporal scaling at field, landscape, and regional scale, and will apply these skills to the characterization of scales and design of agricultural experiments relevant to ARS objectives and regional needs.

Learning Objectives: The participant will learn geospatial statistics methodologies and will help develop and co-lead ARS-wide workshops under the guidance of a mentor, resulting in a community of scientific practice around spatio-temporal scaling and analysis in agricultural landscapes. The participant will have the opportunity to collaborate with multiple USDA ARS and university scientists on projects relating to measurement and analysis of weather and soils data at multiple scales, and to author and collaborate on scientific papers describing workflows and products of these analyses.

Mentor(s): The mentor for this opportunity is Sarah Goslee (sarah.goslee@usda.gov). If you have questions about the nature of the research, please contact the mentor(s).

Anticipated Appointment Start Date: June 3, 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 the last 12 months in one of the relevant fields, or is pursuing and anticipated to be received by 5/31/2024.

Preferred skills:

- Experience with or interest in modeling geospatial data
- Experience with or interest in climate and soils data
- Experience with or interest in spatio-temporal statistical analysis
- Experience with computational programming, particularly R or python
- Strong oral and written communication skills

Eligibility Requirements

- **Degree:** Doctoral Degree received within the last 12 months or anticipated to be received by 5/31/2024 12:00:00 AM.
- **Discipline(s):**
    - **Computer, Information, and Data Sciences** (3 👁)
    - **Earth and Geosciences** (6 👁)
    - **Environmental and Marine Sciences** (3 👁)
    - **Life Health and Medical Sciences** (10 👁)
    - **Mathematics and Statistics** (2 👁)

Affirmation

I affirm that:

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