Opportunity Title: USDA-ARS Postdoctoral Fellowship in Spatial Statistics for Continental-Scale Soil Health Modeling
Opportunity Reference Code: USDA-ARS-MW-2023-0075

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-ARS-MW-2023-0075

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

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

Application Deadline 4/28/2023 3:00:00 PM Eastern Time Zone

Description ***Applications may be reviewed on a rolling-basis.**

ARS Office/Lab and Location: A research opportunity is available with the U.S. Department of Agriculture (USDA) Agricultural Research Service (ARS), within the Cropping Systems and Water Quality Research Unit located in Columbia, Missouri.

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: A scientifically sound, statistically robust, and user-friendly soil health interpretation framework at the continental scale is essential to increase adoption of soil health testing and practices. This Postdoctoral Fellowship provides an opportunity to contribute to a national-scale, model-based approach for scoring soil health indicators, called the Soil Health Assessment Protocol and Evaluation (SHAPE). This interpretation framework was developed based on the principles of soil science as well as cutting-edge statistical methodology. Preliminary scoring curves have been developed for multiple soil health indicators and current research is aimed at expanding and refining SHAPE to maximize impact. The Postdoctoral Fellow will conduct research in partnership with a team of scientists under the guidance of a mentor in the Agricultural Research

Opportunity Title: USDA-ARS Postdoctoral Fellowship in Spatial Statistics for Continental-Scale Soil Health Modeling
Opportunity Reference Code: USDA-ARS-MW-2023-0075

Service.

Learning Objectives: This opportunity will provide experience developing, evaluating, and implementing innovative spatial statistics methodologies, including machine learning techniques, to improve the analysis of high-dimensional functional data. The opportunity will also provide experience summarizing and presenting results.

Mentor(s): The mentor(s) for this opportunity is Kristen Veum (kristen.veum@usda.gov). If you have questions about the nature of the research project, please contact the mentor(s).

Anticipated Appointment Start Date: August 1, 2023. Start date is flexible and will depend on a variety of factors.

Appointment Length: The appointment will initially be for two years, 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.Midwest@orau.org and include the reference code for this opportunity.

Qualifications The qualified candidate should have received a doctoral degree in one of the relevant fields (e.g. Statistics), or be currently pursuing the degree with completion by June 30, 2023. Degree must have been received within the past five years.

Preferred Skills:

- Hierarchical spatial modeling, machine learning, Bayesian methodology and computation, dimension reduction and analysis of high-dimensional

Opportunity Title: USDA-ARS Postdoctoral Fellowship in Spatial Statistics for Continental-Scale Soil Health Modeling
Opportunity Reference Code: USDA-ARS-MW-2023-0075

datasets, and excellent verbal and written communication skills.

Eligibility Requirements

- **Degree:** Doctoral Degree received within the last 60 months or anticipated to be received by 6/30/2023 12:00:00 AM.
- **Discipline(s):**
  - **Mathematics and Statistics** (2 👁)