

Opportunity Title: Postdoctoral Research Opportunity-Soil and Physical Science

Opportunity Reference Code: ARS-NLAE-2016-0029-02

Organization U.S. Department of Agriculture (USDA)

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How to Apply A complete application package consists of:

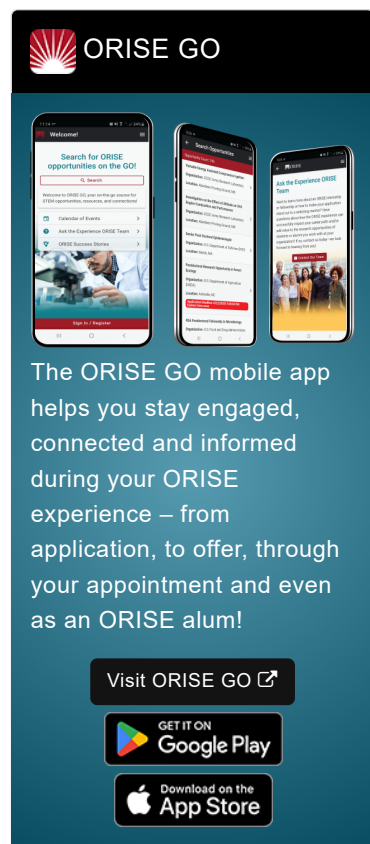
- An application
- Transcript(s) – For this opportunity, an unofficial transcript or copy of the student academic records printed by the applicant or by academic advisors from internal institution systems may be submitted. Selected candidate must provide proof of completion of the degree before the appointment can start. Proof must be sent to ORISE directly from the academic institution including graduation date and degree awarded. All transcripts must be in English or include an official English translation.
- A current resume/CV

If you have questions, send an email to USDA-ARS@orau.org. Please include the reference code for this opportunity in your email.

Description A postdoctoral research opportunity is available with the U.S. Department of Agriculture (USDA) Agricultural Research Service (ARS) National Laboratory for Agriculture and the Environment (NLAE) in Ames, Iowa.

The National Laboratory for Agriculture and the Environment (NLAE) in Ames, Iowa is seeking a postdoctoral participant to quantify the interactions among physical, biological, and biochemical processes across agricultural landscapes. These interactions will be evaluated through the development of mathematical models to quantify the temporal and spatial dynamics within landscapes to determine the relationship to adaptation and mitigation strategies to offset climate impacts. The objectives for this effort are: 1) quantify the impact of physical and biological processes on water availability and utilization in cropping systems; 2) determine the critical areas within a landscape for potential improvement of the soil resource which would lead to enhanced productivity and reduced environmental impact; 3) utilize new techniques, e.g., remote sensing, GIS, to provide a framework for spatial and temporal evaluation of landscapes; and 4) construct robust mathematical models of landscapes which incorporate the physical, biological, and biochemical interactions. These studies will require innovation in the development of experimental observations to quantify these interactions and link with the mathematical models.

The appointment is full-time for one year and may be renewed based upon recommendation of the ARS and availability of funding. The selected applicant will receive a stipend as support for their living and other expenses during this appointment. Stipend rates are determined by ARS officials, and are based on the applicant's academic and professional background. The participant must show proof of health and medical insurance. Health insurance can be obtained through ORISE. The participant will not enter into an employee/employer relationship with ORISE, ORAU, USDA, ARS, or any other office or agency. Instead, the participant will be affiliated with ORISE for the administration of the



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appointment through the ORISE appointment letter and Terms of Appointment.

While participants will not enter into an employment relationship with ARS, this position requires a pre-employment check and a full background investigation.







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.

This is an equal opportunity program open to all qualified individuals without regard to race, color, age, religion, sex, sexual orientation, gender identity, national origin, mental or physical disability, covered veteran's status or genetic information.

For more information about the ARS Research Participation Program, please visit <http://www.orise.orau.gov/usda-ars/default.htm>.

Qualifications To be eligible, applicants must have received a doctorate degree within five years of the desired starting date. Training for this position should include courses in soil science, hydrology, computer science, mathematics, and statistics. Experience should include analysis of soils and soil processes to agricultural systems and interest in developing an understanding of the dynamics between agricultural landscapes and agricultural systems using a variety of mathematical or statistical techniques.

The ideal candidate will be skilled in the analysis of soil processes relative to water and nutrient cycles and developing statistical or mathematical models for biological and physical systems. They will have experience in the application of statistical or mathematical models to agricultural systems, and in the preparation of research papers from research studies.

- Eligibility Requirements**
- **Degree:** Doctoral Degree received within the last 60 month(s).
 - **Discipline(s):**
 - **Computer, Information, and Data Sciences** ([2](#) )
 - **Earth and Geosciences** ([1](#) )
 - **Environmental and Marine Sciences** ([2](#) )
 - **Life Health and Medical Sciences** ([1](#) )
 - **Mathematics and Statistics** ([2](#) )
 - **Physics** ([1](#) )