Opportunity Title: Postdoctoral Research Opportunity - Great Plains Agroclimate and Natural Resources Research Unit
Opportunity Reference Code: ARS-GPANRRU-2015-0110-02

Organization	U.S. Department of Agriculture (USDA)
Reference Code	ARS-GPANRRU-2015-0110-02
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.
- 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) Great Plains Agroclimate and Natural Resources Research Unit (GPANRRU) in El Reno, Oklahoma.
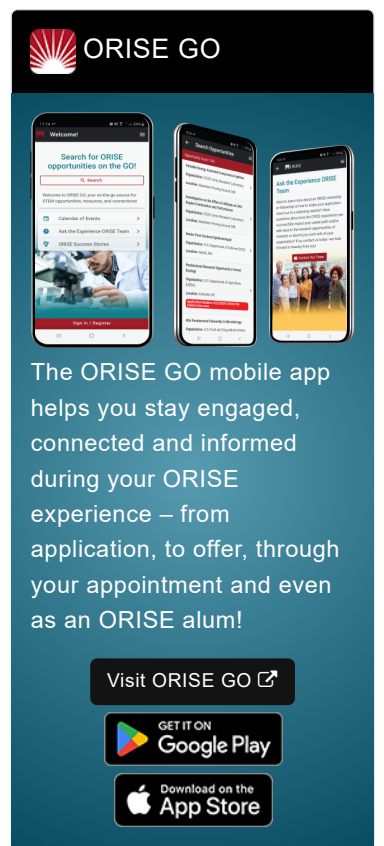
The selected applicant will serve as a member of a team conducting research spanning multiple disciplines that requires unconventional approaches to qualify impacts of conservation practices on water quality from field to watershed scales (e.g. >250 mi2). S/he will conduct research in a series of interrelated projects linked across plot, field, and watershed scales that address impacts of agricultural practices on the environment.

The research assignment is to develop and evaluate a sequentially linked remote sensing-based energy balance ET algorithms (EB_ET) and the integrated Soil and Water Assessment Tool (SWAT)-MODFLOW model. The assignment will also will also build, evaluate, and refine the Agricultural Policy/Environmental eXtender (APEX) model and the sequentially linked remote sensing-based energy balance ER algorithms (EB_ET) – Soil and Water Assessment Tool (SWAT) – groundwater model to conservation and agricultural management practices on water resources.

Additionally, the selected applicant will:

- Conduct field and watershed scale modeling and programming.
- Use the digital elevation model, SSURGO soils, land use and land management, and geologic datasets to build the EB_ET-SWAT-MODFLOW project.
- Calibrate and validate the sequentially linked modeling system using weather, irrigation, streamflow, and water table elevations data from existing pumping wells.
- Evaluate, manage and maintain software, hardware, and other computer accessory requirements to support research objectives.
- Participate in hydrological studies in the field.

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 does not become an employee of ARS or ORISE**.

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, sex, religion, national origin, mental or physical disability, genetic information, sexual orientation, or covered veteran's status.

For more information about the ARS Research Participation Program, please visit the **Program Website**.

Qualifications	To be eligible, candidates must have received a doctorate degree in Agricultural Engineering or a closely related field. Skill in watershed modeling and programming is required. Modeling experience in MODFLOW and programming in Fortran,Delphi, C++, Java are desirable. Knowledge of the principles, theories and practices of hydrology soil physics, and geology are also desirable.

Eligibility Requirements

- **Degree:** Doctoral Degree.
- **Discipline(s):**
  - **Communications and Graphics Design** (1 👁)
  - **Computer, Information, and Data Sciences** (1 👁)
  - **Earth and Geosciences** (2 👁)
  - **Engineering** (4 👁)
  - **Environmental and Marine Sciences** (3 👁)