

**Opportunity Title:** Postdoctoral Research Opportunity – Grassland, Soil, and Water Research Laboratory

**Opportunity Reference Code:** ARS-GSWRL-2015-0076-01

**Organization** U.S. Department of Agriculture (USDA)

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**How to Apply** A complete application consists of:

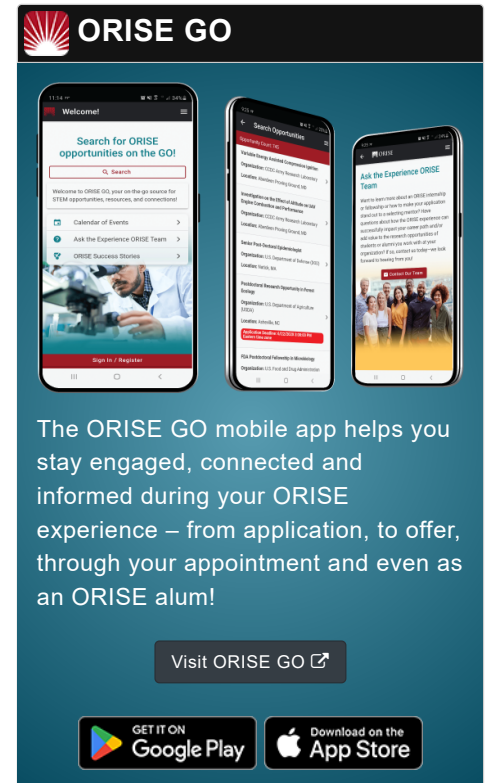
- An application
- Transcript(s) – For this opportunity, an unofficial transcript or copy of the student academic records printed by the applicant or by academic advisors from internal institution systems may be submitted. Selected candidate must provide proof of completion of the degree before the appointment 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](mailto: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) Grassland, Soil and Water Research Laboratory (GSWRL) in Temple, Texas. The selected applicant will join the modeling team working on the Conservation Effects Assessment Project (CEAP), a multi-agency, multi-University effort to quantify the environmental effects of conservation practices and programs and develop the science base for managing the agricultural landscape for environmental quality. CEAP's findings are used to guide USDA conservation policy and program development and help conservationists, farmers and ranchers make more informed conservation decisions.

CEAP assessments are carried out at local, regional, and national scales. They require inputs from large databases (weather, soils, etc.) and use of process based models. The USDA-ARS and Texas A&M AgriLife, located at Temple, Texas, support a family of such models, which provide output information at a daily time step. The outputs of the models include yields, nutrient losses, soil losses, hydrological dynamics, etc. The models are able to simulate current and changing land use, climate change, and economic or social constraints on land use.

The applicant will have the opportunity to interface with the CEAP team, as well as the opportunity to work with the SWAT, APEX, EPIC, and ALMANAC model developers. The applicant's primary work within the modeling team will be to refine the database associated with plant growth. This will require constructing model runs to calibrate and validate current and



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developing plant parameters across the United States. Because the CEAP project functions on agricultural practices across all private lands of the United States, plants included in simulations vary from grape vines and orchard trees, to native grasses and shrubs, to conventional and high value crops, to wetland plants.

There will be opportunity to explore model application in an agricultural context and publications are encouraged.

The position is full-time for one year and may be renewed upon recommendation of the ARS and availability of funding. The participant must show proof of health insurance. **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** Eligible applicants must have received a doctorate degree in agronomy, range science, plant ecology, biology, botany, plant biology, or other life sciences. A strong background in math, statistics, and/or computer science is desirable, but not required.

The ideal applicant will have an understanding of ecosystem processes that impact plant growth and understand plant growth responses to stressors, including flooding, drought, herbivory, grazing, nutrient stress, etc. The applicant should also have the ability to sort, manipulate, and use databases, such as national soils, weather, etc. Experience with setting up and running simulations in process based models would be ideal, especially experience with APEX, SWAT, EPIC, and/ or ALMANAC.




The ideal applicant will be able to independently identify original data sources through literature surveys and assess accuracy/relevance/applicability to model parameter development. The candidate will communicate her/his work orally and in writing. S/he should also expect to provide analyses and solutions related to his/her project.

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The applicant should be enthusiastic about working with an interdisciplinary and diverse team of scientists and engineers to develop process-based decision support tools that inform natural resource policy decisions. The work environment is exciting, dynamic, and changeable, requiring flexibility in anyone who joins this team. The work also requires that deadlines be consistently met.

**Eligibility  
Requirements**

- **Degree:** Doctoral Degree.
- **Discipline(s):**
  - **Environmental and Marine Sciences** (7 )
  - **Life Health and Medical Sciences** (10 )
  - **Mathematics and Statistics** (3 )