

Announcement: Post-doctoral Research Associate

Background

We are recruiting one post-doctoral researcher in the fields of **hydrology, climatology, meteorology, or agricultural engineering** to work with scientists at the Center for Spatial Analysis, University of Oklahoma (OU) and the Grazinglands Research Laboratory, U.S. Department of Agriculture (USDA) Agricultural Research Service (ARS). The incumbent will join a team of scientists from OU and USDA-ARS that is assessing the impacts of climate variability and change on the sustainability of agricultural production systems in the Southern Great Plains. In addition, the incumbent will have an opportunity to contribute to national USDA-ARS initiatives, such as the Long-Term Agroecological Network and USDA Climate Hubs.

Position Information

The successful candidate will serve as an OU Post-doctoral Research Associate. The position will be physically based at the USDA-ARS Grazinglands Research Laboratory, a large working agricultural research facility located 30 miles west of Oklahoma City in El Reno, OK.

The position is for one year with opportunity for renewal pending funding availability and successful performance. The successful candidate must complete and pass a background check; citizenship restrictions may apply.

OU offers a competitive package of salary and benefits, commensurate with experience.

Major Duties

1. Storm intensification and weather modeling

The incumbent will validate and enhance existing storm intensification models as warranted by a review of existing literature of climate change, intensification, impacts, and projections. These enhancements will be incorporated into an existing synthetic daily weather generator (SYNTOR) to produce demonstration applications, with and without projected storm intensification, for the semi-arid agricultural production regions of the Southern Great Plains. In addition, the incumbent and the team of OU and ARS scientists will support the generation of synthetic daily weather-based applications for other USDA-ARS LTAR locations assessing business-as-usual and aspirational agricultural production systems.

2. Soil erosion and crop productivity

The incumbent will apply the Water Erosion Prediction Program (WEPP) model to current daily weather conditions and estimate base-line soil erosion and resulting productivity of winter wheat crops in the Southern Great Plains. The incumbent will also assess the vulnerability and sustainability of winter wheat crop production systems in order to identify additional soil conservation measures and potential enhancements to agronomic management.

3. Climate change scenarios

The incumbent will use available downscaled climate projections to generate future daily weather conditions for the Southern Great Plains, and utilize the SYNTOR and WEPP models to determine the projected impacts of climate change, including potential storm intensification, on regional winter wheat crops. The incumbent will analyze changes in the distribution of precipitation, soil erosion, and crop productivity for different climate change scenarios and projection models, and establish the relative importance of storm intensification relative to the range of potential precipitation realizations.

Minimum Qualifications

- Ph.D. degree in hydrology, climatology, meteorology, agricultural engineering, water resources engineering, or closely related field
- Demonstrated knowledge of hydrological systems and processes (e.g., rainfall runoff; sediment erosion yield; water resources; climatology)
- Demonstrated knowledge of computer sciences (e.g., program language, compilation, and execution; data file management)
- Demonstrated knowledge of basic statistics

Desired Qualifications

- Experience applying hydrology, computer science, and/or statistics to complex environmental data programs and analyses
- Experience conducting hydrologic evaluations and analyses
- Experience applying environmental information to agricultural management practices

How to Apply

Review of applications will begin July 1, 2018 and continue until a suitable candidate is selected, with an anticipated start date on or around September 1, 2018. To apply, please send the following information to Dr. Xiangming Xiao (xiangming.xiao@ou.edu):

- Cover letter detailing how the candidate's education and experience address the position's mandatory and desired qualifications
- Current curriculum vitae or resume
- Unofficial copies of university transcripts (official copies will be required if selected)
- Contact information for at least three references
- Any additional supporting documentation relevant to the position (e.g., research statement, digital copies of prior and selected (2-3) publications)

An offer of employment is contingent upon:

- A Tuberculosis test if you meet any criteria on the form in the New Employee packet
- Successful completion of a background check

Equal Employment Opportunity Policy

The United States Government does not discriminate in employment on the basis of race, color, religion, sex (including pregnancy and gender identity), national origin, political affiliation, sexual orientation, marital status, disability, genetic information, age, membership in an employee organization, retaliation, parental status, military service, or other non-merit factor. More information is available via the [Office of Personnel Management](#) and [U.S. Equal Employment Opportunity Commission](#).

The University of Oklahoma, in compliance with all applicable federal and state laws and regulations, does not discriminate on the basis of race, color, national origin, sexual orientation, genetic information, sex, age, religion, disability, political beliefs, or status as a veteran in any of its policies, practices, or procedures. This includes, but is not limited to: admissions, employment, financial aid, and educational services.