Opportunity Title: Postdoctoral Research Opportunity in Micrometeorology Data Analysis

Opportunity Reference Code: USDA-ARS-2019-0104

Organization	U.S. Department of Agriculture (USDA)
Reference Code	USDA-ARS-2019-0104
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. All transcripts must be in English or include an official English translation. 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.

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

Application Deadline	9/3/2019 3:00:00 PM Eastern Time Zone
Description	***Applications will be reviewed on a rolling-basis.**

A research opportunity is currently available with the U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS), National Laboratory for Agriculture and the Environment located in Ames, Iowa.
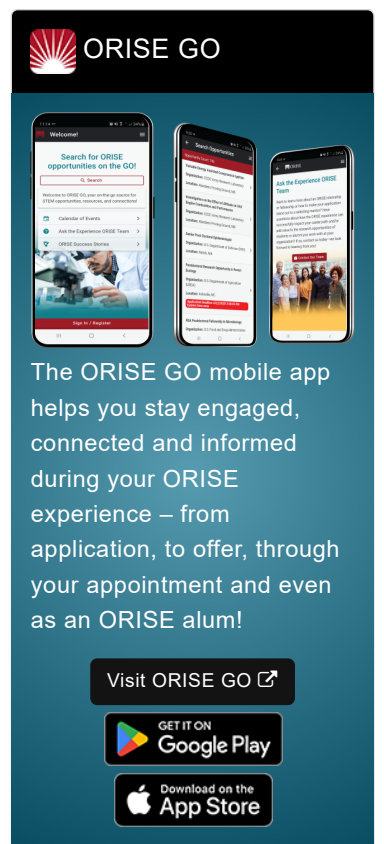
The mission of the Soil, Water, and Air Resources unit is to discover and apply knowledge of biophysical interactions within the soil-plant-atmosphere system to develop new and improved management practices that limit or reduce the impact of agricultural production systems on soil, water, and air resources. The goal of this project is to utilize the Genetics x Environment x Management (G x E x M) concept to evaluate how different management practices can increase efficient use of water and light by cropping systems to increase sustainability. The research approach utilizes surface energy balance methods to quantify differences among management practices or microclimate modifications. These data are then used to estimate the water use and gross and net ecosystem productivity using daily values across the growing season with a direct contrast of cumulative water and carbon fluxes over a year and over portions of the year to represent different aspects of management systems.

The participant will be involved in research activities focused on improving the efficiency of collection, processing, and archiving of eddy covariance and other flux data and associated biophysical data from multiple existing stations. During this project, the participant will learn about the capabilities and limitations of the different sensors, optimization of datalogging systems, and enhancing processing protocols. The participant will learn how to monitor multiple data streams to assure maximum data capture and high quality control/quality assurance. The participant will learn how to use commercial flux analysis software and how to customize their own code. These activities will include interaction with project scientists, grad students, and undergraduate student researchers and they will learn how to coordinate group activities. There will be opportunities to present personal and team research results at scientific meetings and lead or contribute to the preparation of project reports and journal articles reporting the research findings.

This program, administered by ORAU through its contract with the U.S. Department of Energy

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(DOE) to manage the Oak Ridge Institute for Science and Education (ORISE), was established through an interagency agreement between DOE and ARS. The initial appointment is for one year, but may be renewed upon recommendation of ARS and is contingent on the availability of funds. The participant will receive a monthly stipend commensurate with educational level and experience. Proof of health insurance is required for participation in this program. The appointment is full-time at ARS in the Ames, Iowa, area. Participants do not become employees of USDA, ARS, DOE or the program administrator, and there are no employment-related benefits.

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.

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

Qualifications	The qualified candidate should have received a doctoral degree in one of the relevant fields.

Preferred skills:

- Training in concepts of meteorology, plant physiology, and soil science with fundamental background in physics and mathematics
- Strong background in math and physics as they relate to energy, momentum, and trace gas transfer in the atmospheric boundary layer
- Experience with field measurements including eddy covariance, Bowen ratio, or other techniques (surface renewal, flux gradient)
- Knowledge of sensor calibration and operation, datalogger programming, statistical methods, and data processing

Eligibility Requirements
- **Degree:** Doctoral Degree.
- **Discipline(s):**
  - **Earth and Geosciences** (4 👁)
  - **Engineering** (2 👁)
  - **Environmental and Marine Sciences** (4 👁)
  - **Life Health and Medical Sciences** (1 👁)