Opportunity Title: Postdoctoral Research Opportunity in Hydrology
Opportunity Reference Code: USDA-USFS-2020-0068

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-USFS-2020-0068

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. Click **Here** for detailed information about acceptable transcripts.
- A current resume/CV
- Two educational or professional recommendations

If you have questions, send an email to USForestService@orise.orau.gov. Please include the reference code for this opportunity in your email.

Application Deadline 4/21/2020 3:00:00 PM Eastern Time Zone

Description ***Applications will be reviewed on a rolling-basis.**

A postdoctoral research opportunity is available with US Forest Service (USFS), Eastern Forest Environmental Threat Assessment Center located in Research Triangle Park, North Carolina.

About half of the lands in the Southern United States are forests that provide critical ecosystem services (e.g., clean water supply, climate moderation, timber production, carbon sequestration, recreation) indispensable to the regional economy and the wellbeing of more than 95 million people. However these forest benefits are increasingly threatened by environmental change by fundamentally altering the evapotranspiration (ET) process, either directly (i.e., water and energy availability) or indirectly (i.e., land surface properties). Solving emerging watershed problems caused by drought, fire, land conversion, and climate change all requires quantitative knowledge of ET, a major yet least understood component of the energy and hydrological cycle.

Under the guidance of a mentor, the participant will conduct hydrological research on the interactions of forests and ET by analyzing a large ET database built through collaborating with researchers in the southeastern US. The participant will have the opportunity to learn advanced techniques of ET modeling and gain field experiences of measuring ET at multiple scales.

Anticipated Appointment Start Date: May 1, 2020

This program, administered by ORAU through its contract with the U.S. Department of Energy (DOE) to manage the Oak Ridge Institute for Science and Education (ORISE), was established through an interagency agreement between DOE and the U.S. Forest Service (USFS). The initial appointment is for one year, but may be renewed upon recommendation of USFS contingent on the availability of funds. **The participant will receive a monthly stipend of $6,400, partial coverage (66% of total premium) of individual health insurance, and a travel stipend for attendance at project meetings and presentations at scientific conferences.** Proof of health insurance is required for participation in this program. Health insurance can be obtained through ORISE. The appointment is full-time at USDS in the Research Triangle Park, North Carolina area. Participants do not become employees of USFS, DOE or the program administrator, and there are no

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employment-related benefits.

This opportunity is available to U.S. citizens, legal permanent residents, 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 USFS 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:

- Strong quantitative skills that integrate field observations of evapotranspiration (sapflow, eddy covariance, watershed) with empirical and process-based modeling to understand the linkage between forest species composition, climate, and forest water use, and hydrology at multiple scales
- Strong forest hydrology background, especially knowledge of forest water use issues in the southeastern United States
- Knowledge of tree physiology, micrometeorology, especially eddy covariance techniques
- Skilled in large database development and modeling using advanced machine learning techniques
- Strong analytical and programming capabilities and the ability to build, manage, and analyze large datasets of plant water use and hydrologic information using programming and/or statistical software (e.g., SAS, Python, Matlab, R, Fortran)

Eligibility Requirements

- **Degree:** Doctoral Degree.
- **Discipline(s):**
  - **Earth and Geosciences** (1 👁)
  - **Environmental and Marine Sciences** (1 👁)