

Opportunity Title: USDA-FS Geospatial Hydrology Internship

Opportunity Reference Code: USDA-FS-SRS-2024-0329

Organization U.S. Department of Agriculture (USDA)

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How to Apply *To submit your application, scroll to the bottom of this opportunity and click **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. 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. At least one recommendation must be submitted in order for the mentor to view your application.

All documents must be in English or include an official English translation.

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Application Deadline 12/6/2024 3:00:00 PM Eastern Time Zone

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

USDA Forest Service Office/Lab and Location: A fellowship opportunity is available with the US Department of Agriculture (USDA) Forest Service (FS) within the Forest Service Southern Research Station (SRS) located in Otto, North Carolina.

At the heart of the USDA Forest Service's mission is their purpose. Everything they do is intended to help sustain forests and grasslands for present and future generations. Why? Because their stewardship work supports nature in sustaining life. This is the purpose that drives the agency's mission and motivates their work across the agency. It's been there from the agency's very beginning, and it still drives them. To advance the mission and serve their purpose, the USDA Forest Service balances the short and long-term needs of people and nature by: working in collaboration with communities and our partners; providing access to resources and experiences that promote economic, ecological, and social vitality; connecting people to the land and one another; and delivering world-class science, technology and land management.

The mission of the SRS is to create the science and technology needed to sustain and enhance southern forest ecosystems and the benefits they provide. SRS is part of the Nation's largest forestry research organization—USDA Forest Service Research and Development—the leading organization for research on natural resource management and

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sustainability in the United States. Headquartered in Asheville, North Carolina, the Southern Research Station serves 13 southern states and beyond. Its staff of 130 scientists is organized into Science Centers and Research Work Units, with science technicians and other support personnel who work at various locations throughout the region: federal laboratories, universities, and experimental forests.

The fellowship will be located at the Coweeta Hydrologic Laboratory in Otto, NC, nestled in the beautiful southern Appalachians of western North Carolina. Coweeta is the longest-running experimental forest in the Nation, including continuous climate and streamflow records extending back to the 1930s. There are abundant recreational and cultural activities in the area including hiking, kayaking, mountain biking, and skiing. Nearby cities include the thriving town of Franklin, NC about 20 minutes from Coweeta, Asheville, NC about 1.5 hours away, and Atlanta, GA about 2 hours away.

Research Project: Forests provide the most stable and highest quality water among all other land uses. Changes in land use from forest to more intensive land use such as agricultural and urban development can increase point and non-point pollution, reduce aquifer recharge, and accelerate stormwater release. In addition to upstream freshwater watersheds, downstream marine and coastal waters such as those along the Gulf of Mexico are also vulnerable to the effects of forest conversion. Forests are particularly vulnerable to land use change in the southeastern United States where most forest land is privately owned. Technical and financial assistance for forest restoration can provide benefits for both the landowner and downstream water quantity and quality by enabling private forest landowners to retain and generate income from their forest land, thereby preventing conversion to other uses. Models, data, and other tools are critically important for understanding the linkage between upstream forest land use and downstream water resources and to support forest restoration decision-making.

We are seeking a geospatial hydrology intern who has broad interests in geospatial data and analytical techniques, especially as it pertains to hydrological data. The participant will join a diverse team of scientists and stakeholders on an exciting new project that will implement forest restoration activities (e.g., reforestation, riparian buffers, etc.) across coastal watersheds in Mississippi, Alabama, and Florida in the southeastern United States. The participant will contribute to the development of hydrologic models that will be used to support forest restoration decision-making and to project restoration benefits for water quantity and quality to the Gulf of Mexico over the long term by compiling, analyzing, and presenting relevant geospatial data.

Learning Objectives: Learning objectives for the participant include familiarization with hydrological modeling and associated data needs, collaborating with stakeholders representing various interests, and continued skill development in effective presentation of geospatial natural resource information.

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Mentor: The mentor for this opportunity is Peter Caldwell (peter.v.caldwell@usda.gov). If you have questions about the nature of the research, please contact the mentor.

Anticipated Appointment Start Date: 2024/2025. Start date is flexible and will depend on a variety of factors.

Appointment Length: The appointment will initially be for one year but may be extended upon recommendation of USDA Forest Service and is contingent on the availability of funds.

Level of Participation: The appointment is full time.

Participant Stipend: The participant will receive a monthly stipend commensurate with educational level and experience.

Citizenship Requirements: This opportunity is available to U.S. citizens and Lawful Permanent Residents (LPR) only.

ORISE Information: 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 USDA Forest Service. Participants do not become employees of USDA, USDA Forest Service, DOE or the program administrator, and there are no employment-related benefits. Proof of health insurance is required for participation in this program. Health insurance can be obtained through ORISE.

Questions: Please visit our [Program Website](#). After reading, if you have additional questions about the application process please email ORISE.USFS.SRS@orau.org and include the reference code for this opportunity.

Qualifications The qualified candidate should be currently pursuing or have received a bachelor's or master's degree in the one of the relevant fields (e.g. hydrology, forestry, environmental engineering, agricultural engineering, natural resources, environmental science, or a closely related field with applications in geospatial analysis). Degree must have been received in the past five years or is anticipated to be received by 12/31/2024.

Preference is given to those pursuing or who have received their master's degree, but exceptional bachelor's degree graduates will also be considered.

Preferred skills:

- Skilled in geospatial analysis, data, and associated tools (e.g., ArcGIS, GRASS GIS, etc.)
- Knowledge of surface water hydrologic principles and associated water quantity and water quality data
- The ability to build, manage, and analyze large datasets of hydrologic information using programming and/or statistical software (e.g., SAS, Python, MATLAB, R, and Fortran)

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- Knowledge of cartographic principles and conventions sufficient to create maps for internal and external use in publications and presentations






Eligibility

- **Citizenship:** LPR or U.S. Citizen

Requirements

- **Degree:** Bachelor's Degree or Master's Degree received within the last 60 months or anticipated to be received by 12/31/2024 12:00:00 AM.

- **Discipline(s):**

- **Earth and Geosciences** ([3](#) )
- **Engineering** ([4](#) )
- **Environmental and Marine Sciences** ([7](#) )
- **Life Health and Medical Sciences** ([4](#) )
- **Social and Behavioral Sciences** ([1](#) )