Opportunity Title: USDA-USFS Software Engineering and Computer Science Support for Wildland Fire Internship
Opportunity Reference Code: USDA-USFS-RMRS-2024-0087

Organization	U.S. Department of Agriculture (USDA)
Reference Code	USDA-USFS-RMRS-2024-0087
How to Apply	***Connect with ORISE...on the GO!*** Download the new ORISE GO mobile app in the Apple App Store or Google Play Store to help you stay engaged, connected, and informed during your ORISE experience and beyond!

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. Click **Here** for detailed information about acceptable transcripts.
- A current resume/CV
- 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.

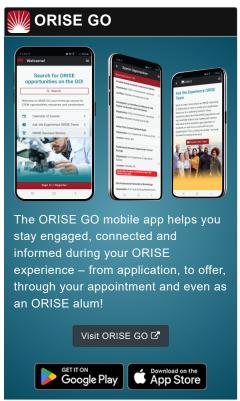|	
Application Deadline	5/24/2024 3:00:00 PM Eastern Time Zone
Description	***Applications are reviewed on a rolling-basis.**

USFS Office/Lab and Location: A fellowship opportunity is available with the US Department of Agriculture (USDA) Forest Service (USFS) within the Rocky Mountain Research Station (RMRS) located in Missoula, Montana.

At the heart of the U.S. 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 U.S. 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 Missoula Fire Sciences Laboratory houses the Fire, Fuels, and Smoke (FFS) science program of the USDA Forest Service Rocky Mountain Research Station. The Fire Lab was established by the USDA Forest Service as a research facility for fundamental wildland fire research. The Fire Lab includes a one-

of-a-kind experimental facility with a large burn chamber and two wind tunnels for conducting wildland fire experiments. The core mission of the FFS program is to further the understanding of wildland fire physical processes in order to develop and provide information and tools for wildland fire management based on the best available science. Scientists in the FFS program conduct laboratory, field, theoretical, and numerical studies focused on three key areas of research: fire physics and behavior, emissions and air quality, and fire ecology.

Research Project: This project is aimed at providing software engineering and computer sciences support for wildland fire research. Applied wildland fire research relies heavily on computer sciences for supporting a broad spectrum of technology. Examples include, advancing numerical model development and delivery, architecting and managing platforms to host web applications and information for end users, developing and managing databases and repositories for data and code management and dissemination, and architecting and maintaining server and cluster networks. The ORISE participant will be involved in a variety of ongoing computer science-related projects to support wildland fire research activities. Opportunities will include:

- Development of fire weather and fire behavior web, desktop, and mobile applications;
- Maintenance and extension of existing onsite server and cluster hardware;
- Architecture design and maintenance of Linux-based platforms for hosting fire applications and data;
- The participant will be encouraged to explore new techniques, libraries, and APIs as appropriate to support and enhance our wildland fire research activities.

Learning Objectives: The participant will gain experience with the following languages: C/C++, JavaScript, CMake, Python, R, bash, SQLite, GDAL, Swift, Kotlin, and more, and will support research on Linux and Windows platforms. The participant will have the opportunity to gain experience with continuous integration, database creation and management, geospatial programming, server architecture and management, and a variety of web services.

Mentor(s): The mentor for this opportunity is Natalie Wagenbrenner (natalie.s.wagenbrenner@usda.gov). If you have questions about the nature of the research, please contact the mentor(s).

Anticipated Appointment Start Date: 2024. 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 renewed upon recommendation of ARS and is

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contingent on the availability of funds.

Level of Participation: The appointment is full time or part 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, 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.

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 USFS. Participants do not become employees of USDA, USFS, 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.RMRS@orau.org and include the reference code for this opportunity.

Qualifications

The qualified candidate should have received any degree.

Preferred skills:

- Experience with:
    - Linux and Windows OS,
    - C/C++
    - JavaScript
    - CMake
    - Python
    - R
    - Bash
    - SQLite
    - Swift
    - Kotlin
    - Amazon Web Services
    - Server management

Eligibility Requirements

- **Degree:** Any degree .
- **Academic Level(s):** Graduate Students, K-12 Students, Post-Associate's, Post-Bachelor's, Postdoctoral, Post-Master's, or Undergraduate Students.
- **Discipline(s):**

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- **Computer, Information, and Data Sciences** (17 👁)
- **Engineering** (27 👁)