

Opportunity Title: USFS Computational Science Support for Wildland Fire Research

Opportunity Reference Code: USDA-USFS-2021-0228

Organization U.S. Department of Agriculture (USDA)

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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. 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. Applications need at least one recommendation submitted in order to be viewed by the mentor.

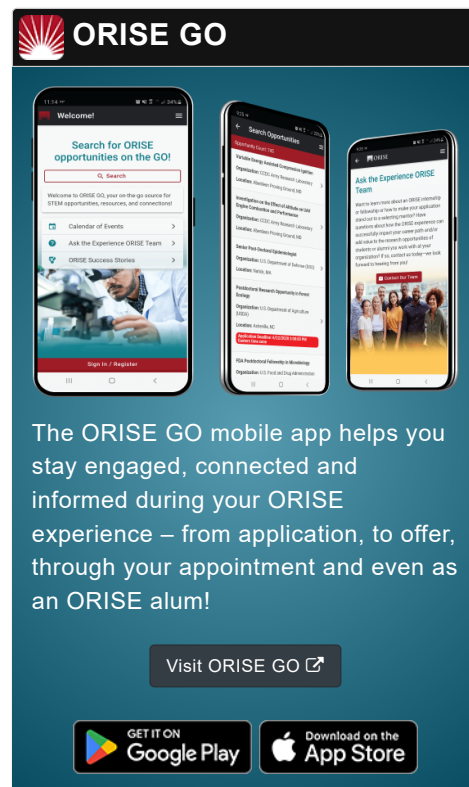
All documents must be in English or include an official English translation.

Description ***Applications will be reviewed on a rolling-basis, and this opportunity will remain open until filled.**

USFS Office/Lab and Location: A research training opportunity is available with the US Department of Agriculture (USDA) Forest Service, Fire Sciences Laboratory located in Missoula, Montana.

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 computational support for wildland fire research. Applied wildland fire research relies heavily on computational 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



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dissemination. The participant will be involved in a variety of ongoing computational science-related projects to support wildland fire research activities. Opportunities will include (1) development of fire weather and fire behavior web applications; (2) development of desktop fire applications; (3) design and management of databases for storing and re-distributing data from laboratory and field experiments; (4) architecture design and maintenance of Linux-based platforms for hosting fire applications and data. The participant will be encouraged to explore new techniques and libraries 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, PostGIS 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, and a variety of web services.

Mentor: 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.

Anticipated Appointment Start Date: As soon as a qualified candidate is identified. Start date is flexible and negotiable, 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 USFS 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 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 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 USForestService@orise.orau.gov and include the

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reference code for this opportunity.

Qualifications The qualified candidate should have received a bachelor's degree in one of the relevant fields, or be currently pursuing the degree with completion by the end of December 2021.

Preferred skills:

- Experience with Linux and Windows OS
- Experience with C/C++, JavaScript, CMake, Python, R, bash, SQLite, PostGIS, Amazon Web Services, server management

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Bachelor's Degree, Master's Degree, or Doctoral Degree.
- **Discipline(s):**
 - **Computer, Information, and Data Sciences** (17 👁)
 - **Engineering** (1 👁)