

**Opportunity Title:** USFS Fire Resistance Forestry Fellowship

**Opportunity Reference Code:** USDA-USFS-2021-0238

**Organization** U.S. Department of Agriculture (USDA)

**Reference Code** USDA-USFS-2021-0238

**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** 8/31/2022 3:00:00 PM Eastern Time Zone

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

**USFS Office/Lab and Location:** A research opportunity is available with the U.S. Forest Service (USFS) Pacific Northwest Research Station, Portland Forestry Sciences Laboratory located in Portland, Oregon.

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.

**Research Project:** The primary focus of the opportunity will be analyzing over 400 forest inventory permanent plots remeasured 1-yr post-wildfire in California and the inland Northwest between 2002 and 2019 to relate observed post-fire conditions to pre-fire forest structure and stand history, controlling for fire weather and



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topography, to develop empirical, statistically representative evidence and insights into factors that confer resistance to stand-replacing fire across all forests encountered by large fires. This may inform prescription development for the Westside Fire Research Initiative's Fire and Carbon Oriented Forest Management project. The secondary focus will be contributing to the BioSum (Bioregional Inventory Originated Simulation Under Management) analysis framework via collaboration and co-production with Forest Service users to apply BioSum to questions concerning management effectiveness at achieving desired forest conditions and environmental services and the associated operations costs and goods and services produced from the forest; this will help to prioritize BioSum reporting templates that our programming team will use to deliver answers to the most important management questions. Activities include research and publication planning; data exploration and quality assessment; statistical analysis of forest inventory data, fire weather observations and topographic context; GIS overlay analysis of fire growth perimeters to establish plot burn dates; stand projection simulations with management in the Forest Vegetation Simulator; developing scripts to define management and policy relevant BioSum reports; collaborating with BioSum users as they develop their questions and BioSum projects; and writing manuscripts for publication in refereed journals and agency research publications.

**Learning Objectives:** Learning objectives for the project include advancing the participant's exposure to policy relevant, hypothesis based research and technology development centered on the management of forests and natural resources. The participant will enhance their capabilities for formulating practical research questions and designing research that promotes understanding of 1) how forest conditions and management and disturbance legacies impact fire resistance and carbon outcomes; 2) how prospective management may effectively promote fire resistance and other goals; 3) key inventory-informed strategic questions that national forest managers seek to have addressed. Participant will also gain experience with analyzing and modeling inventory data, implementing silvicultural prescriptions in a stand projection model, and sharing information developed through this analysis with a cadre of co-producers and clients engaged with this project as well as larger management, professional and scientific communities via presentations and publication of findings in journals, reports and electronically delivered visualizations.

**Mentor:** The mentor for this opportunity is Jeremy Fried ([jeremy.s.fried@usda.gov](mailto:jeremy.s.fried@usda.gov)). If you have questions about the nature of the research please contact the mentor.

**Anticipated Appointment Start Date:** October-December 2021. Start date is flexible and will depend on a variety

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of factors.

**Appointment Length:** The appointment will initially be for one year, but may be extended an additional year 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. **The annual stipend rate will be \$70,000. A health insurance allowance can be provided as needed, and there will be money allocated for travel to conduct research, if it can be conducted safely and is possible given COVID-19 considerations.**

**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 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](mailto:USForestService@orise.orau.gov) and include the reference code for this opportunity.

## Qualifications

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

Preferred skills:

- Understanding of and interest in fire and fuels from both an ecological and management perspective
- Statistical analysis capabilities (estimation and modeling) and experience with exploratory analysis, model fitting with multiple and often confounding variables, large and complex datasets, accounting for uncertainties in explanatory variables, and techniques for obtaining comparable samples in pseudo-experiments such as occur when fires burn some plots but not others.
- Experience running and interpreting output from the Forest Vegetation Simulator or another stand projection system, analyzing forest inventory data, engaging in forest or fuels management, and familiarity with forest fire and forest





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carbon dynamics

- Strong data management skills, especially working in database (e.g., MS Access), GIS (e.g., ArcGIS) and analysis programming environments (e.g., R, Stata, SAS) to link, query, summarize, massage and analyze large datasets to generate clearly understandable tables and graphics that convey accurate and compelling interpretations
- Articulate in oral and written communications, particularly when it comes to documenting analysis processes and reporting research findings
- Experience with effectively conveying technical information to both decision-makers and scientists

**Eligibility  
Requirements**

- **Citizenship:** LPR or U.S. Citizen
- **Degree:** Doctoral Degree.
- **Academic Level(s):** Postdoctoral.
- **Discipline(s):**
  - **Environmental and Marine Sciences** (7 )
  - **Life Health and Medical Sciences** (4 )
  - **Mathematics and Statistics** (2 )
  - **Other Non-Science & Engineering** (1 )