Opportunity Title: USFS Fellowship on West Coast Forest Inventory Informed Fire Effects Analysis

Opportunity Reference Code: USDA-USFS-PNWRS-2023-0209

Organization	U.S. Department of Agriculture (USDA)
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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, including Cover Letter (please upload with CV/resume)
- A writing sample such as a publication, paper submitted for a course, or thesis chapter (upload sample in Writing area)
- 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.

Description — ***Applications will be reviewed on a rolling-basis, and this opportunity could close before the application deadline. Please feel free to check in with the mentor on this.**

USFS Office/Lab and Location: This fellowship is available with the US Department of Agriculture (USDA) Forest Service (USFS) within the Pacific Northwest Research Station.

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: This research opportunity is at the Pacific Northwest Research Station's Corvallis Forestry Sciences Laboratory, a world-class facility on the Oregon State University campus adjacent to the OSU College of Forestry — and a nexus of forestry and research connections with a vibrant community of federal researchers and professionals from the PNW Research Station, USGS, the Siuslaw National Forest and with faculty and graduate student researchers in the College.

You will evaluate responses of west coast forest ecosystems to fires over

the past 20 years, leveraging a large dataset constructed from over two decades of repeated measurements of permanent inventory plots in forest that burned. Through your analysis of this spatially balanced, statistically representative sample, you will contribute to our understanding of both immediate fire impacts, centered on tree mortality and carbon dynamics, and carbon and management-relevant aspects of post-fire trajectories. We'll also investigate post-fire trajectories to understand 1) post-fire dead wood dynamics and their implications for wildlife habitat, carbon pools, and future fire behavior; 2) post-fire forest structural and community dynamics, including describing post-fire vegetation development without active management under different pre-fire structural conditions and wildfire burn severities; and 3) early seral habitats initiated by fires of varying severity across a gradient of pre-fire stand structures. Summarizing and building models from this data across nearly 1000 forest inventory plots that span broad gradients in climate, forest type, and fire severity will allow us to generalize findings more broadly to west coast forests that have not yet burned or have burned quite recently. Collaborating with manager, practitioner and academic co-producers within this research initiative will ensure that findings inform post-fire management that can more effectively address future fire hazard, regeneration needs, habitat development and delivery of climate mitigation benefits.

Learning Objectives: Learning objectives for the project include understanding how west coast forest ecosystems and the climate benefits we count on them to deliver respond to and develop following wildfire disturbance, and exploiting the knowledge attained to guide post-fire management under actively shifting climate and fire patterns. You will also gain experience analyzing and modeling many kinds of inventory re-measurement data, gain broad perspectives on forest management through engagement with managers and practitioners, and improve communication skills and experience by sharing information developed with management, professional and scientific communities via presentations and publishing findings in journals, reports and electronically delivered visualizations.

Mentor: The mentor for this opportunity is Jeremy Fried (jeremy.s.fried@usda.gov). Please contact him with any questions about this research opportunity.

Anticipated Appointment Start Date: January 2024. Start date is flexible (can be earlier, and potentially later) 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. **Funding is currently available for two years.**

Level of Participation: The appointment is full-time.

Participant Stipend: The participant will receive a monthly stipend commensurate with educational level and experience, ranging from $63,000 - $77,000.

Citizenship Requirements: This opportunity is available to U.S. citizens

and Lawful Permanent Residents (LPR).

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.PNWRS@orau.org]() and include the reference code for this opportunity.

Qualifications

The qualified candidate should have received a master's or doctoral degree in one of the relevant fields, or be currently pursuing a doctoral degree. If not a current doctoral program student, then qualifying degree must have been received within five years of the appointment start date.

Preferred Skills:

1. Experience analyzing forest inventory data, especially including growth, removals and mortality analysis in which longitudinally collected tree data are reconciled, fire behavior and effects analysis, and familiarity with forest carbon dynamics;
2. Strong data management skills, especially working in relational databases (e.g., MS Access and SQLite) and analysis programming environments (e.g., R or Python) to link, query, summarize, massage/restructure and analyze large datasets to generate clearly understandable tables and graphics that convey accurate and compelling interpretations;
3. An affinity for patiently digging into longitudinal plot and tree list data to seek out both patterns and anomalies and developing creative solutions for resolving the latter as part of integrated quality assurance;
4. A capable communicator, both oral and written, with skill in documenting of analysis processes and reporting research findings;
5. Familiarity with relevant literature or a commitment to move quickly and independently to catch up with relevant literature and methods.

Eligibility Requirements

- **Citizenship:** LPR or U.S. Citizen
- **Degree:** Master's Degree or Doctoral Degree received within the last 60 months or currently pursuing.
- **Discipline(s):**
  - **Environmental and Marine Sciences** (6 👁)
  - **Life Health and Medical Sciences** (4 👁)
  - **Mathematics and Statistics** (3 👁)
- **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).