

Opportunity Title: USFS Fellowship for Simulating Fire Resistance Silviculture and Renewable Materials Delivery in Support of Natural Climate Solutions

Opportunity Reference Code: USDA-USFS-PNWR-2023-0385

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
- 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.**

USFS Office/Lab and Location: A research opportunity is available with the U.S. Department of Agriculture (USDA) Forest Service (USFS), Pacific Northwest Research Station (PNW) located in Corvallis, 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: Join our forest and fire management research group at the Forest Service's Pacific Northwest Research Station, where we seek to inform choices affecting sustainable resource management. This research opportunity deploys the BioSum modeling framework and Forest Vegetation Simulator to simulate forest ecosystem trajectories



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under management to enhance forests' resistance to stand-replacing fire in several of the 21 Priority Investment Landscapes (PILs) identified under the nation's Wildfire Crisis Strategy (WCS).

As a research fellow, you will analyze data from the national forest inventory to reflect the likely outcomes of plans to enhance fire resistance in these PILs in terms of the extent to which fire hazard can be moderated; the potential production of renewably produced wood products, including low value wood that might otherwise be burned and carbon emitted to the atmosphere without energy capture; the potential for biohubs to improve the economic feasibility of fuels management and how forest carbon dynamics and climate change mitigation will be changed by WCS implementation.

Opportunities abound to:

1. Continue professional development while tackling critical, policy-relevant questions about ecosystem management at a pivotal moment, as changes in climate and wildfire are accelerating,
2. Inform and contribute to decisions about managing forest ecosystems to reduce stand-replacing fire while recovering and utilizing wood residues for maximum climate mitigation benefit, and
3. Pursue research investigating how biohubs— networks of collection points to facilitate biomass supply chains—can scale-up landscape treatments sufficient to provide prospects for achieving natural climate solution objectives.

Learning Objectives:

1. An understanding of how management can enhance their fire resistance, while maintaining compatibility with other forest objectives,
2. Experience in forest modeling with inventory data,
3. Real-world perspectives on forest management through research co-production with managers and practitioners,
4. Improved communication skills resulting from information sharing with management, professional and scientific communities via presentations and publishing findings in journals, reports and electronically delivered visualizations,
5. Engagement with a diverse set of scientists in Forest Service Research and Oak Ridge National Lab, as well as managers in the priority landscapes selected as focal areas for this analysis.

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

Anticipated Appointment Start Date: October, 2023. Start date is flexible and will depend on a variety of factors.

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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. **The current stipend for this opportunity is \$63,000 - \$77,000 per year, depending on education and experience.**

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.

Masters-level researchers possessing exceptionally strong quantitative analysis/data science skills and forest modeling experience are encouraged to apply.

Preferred Skills:

- Experience with forest projection models, silviculture, timber management, fire and fuels, and/or forestry applications of operations research or forest inventory analysis;
- An educational background that includes training in forestry/natural resources, operations research, biometry/statistics or a related discipline.
- A research fellow with great fit will have:
 - Experience with the Forest Vegetation Simulator or another stand projection system, analyzing forest







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inventory data, and engaging in or carrying out
research related to forest or fuels management.

- Strong data management skills, especially working with databases (e.g., MS Access, SQLite) and analysis programming environments (e.g., R or python) to link, query, summarize, and analyze large datasets to generate informative tables and graphics that convey interpretations that are both accurate and relevant
- A proven track record with effective oral and written communications, particularly with respect 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:** Master's Degree or Doctoral Degree received within the last 60 months or currently pursuing.
- **Discipline(s):**
 - **Computer, Information, and Data Sciences** (2 )
 - **Engineering** (3 )
 - **Environmental and Marine Sciences** (6 )
 - **Life Health and Medical Sciences** (2 )
 - **Mathematics and Statistics** (3 )
 - **Social and Behavioral Sciences** (1 )
- **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).