

Opportunity Title: USFS Forest Inventory and Analysis Dendroecology Fellowship

Opportunity Reference Code: USDA-USFS-2022-0410

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. 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.

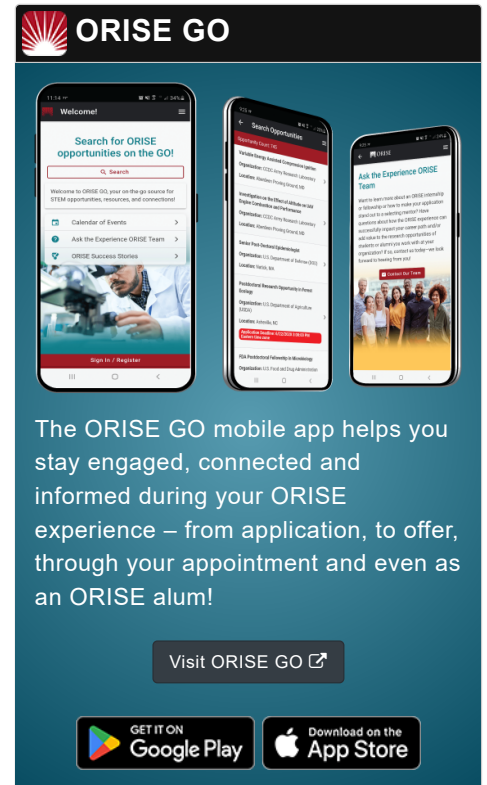
Application Deadline 1/30/2023 3:00:00 PM Eastern Time Zone

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

USFS Office/Lab and Location: A postgraduate fellowship project is available via the Oak Ridge Institute for Science and Education) at the research and development (R&D) arm of the U.S. Department of Agriculture (USDA) Forest Service (FS). The fellowship will be in the Forest Inventory and Analysis (FIA) Program of the Pacific Northwest (PNW) Research Station in Anchorage, AK. The Fellow will participate as a member of the Vegetation Monitoring Science and Application (VeMSA) team.

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 Pacific Northwest (PNW) Research Station is a leader in the



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scientific study of natural resources. We generate and communicate impartial knowledge to help people understand and make informed choices about natural resource management and sustainability. The Station has 11 laboratories and research centers in Alaska, Oregon, and Washington as well as 12 active experimental forests, ranges, and watersheds.

The Forest Inventory and Analysis (FIA) program of the U.S. Forest Service provides the information needed to assess America's forests. The long history of scientifically credible FIA data provides critical status and trend information to resource managers, policy makers, investors, and the public through a system of annual resource inventory that covers both public and private forest lands across the United States. FIA reports on status and trends in forest area and location; in the species, size, and health of trees; in total tree growth, mortality, and removals by harvest; in wood production and utilization rates by various products; and in forest land ownership.

Research Project: The Fellow will perform activities that support various research projects primarily focused on the use of inventory-based tree-ring analyses and statistical programming. The Fellow will participate in research designed to understand successional patterns in forest growth using tree-rings and develop open-source software to increase the breadth of tools available for statistical analysis of tree-ring data. There is a need for an empirical understanding of current and past successional trajectories to identify future changes as Alaska's boreal forest experiences significant changes in climate. The Fellow will address this knowledge gap by exploring the utility of tree-ring data from FIA plots and targeted samples to draw inferences about historical successional patterns. In addition, current statistical methods of analyzing tree-rings are largely limited to a single R package that does not include the full suite of tools for modern tree-ring analysis. Use of FIA tree-ring data would be enhanced by the development of an open-source R package that includes several new and innovative methods of tree-ring analysis. The Fellow will contribute research toward the development of this R package. These research activities support the research mission of the PNW Research Station.

Learning Objectives: Specific activities the Fellow will perform include:

- Collaborate with Station scientists about research needs and opportunities.
- Become familiar with FIA database, tree core methods and associated plot variables.
- Participate in cataloging inventory-based tree-ring data, with the eventual goal of making data publicly available.
- Leverage inventory-based tree-ring data to examine

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successional patterns following disturbance in southcentral and interior Alaska.

- Perform additional field work as needed to parameterize successional models.
- Develop open-source software package in R to increase the breadth of statistical analysis tools available to those working with FIA tree-ring data and the dendrochronology community.
- Participate in team meetings, share findings, present results at national conferences.

Mentor: The mentor for this opportunity is Sean Cahoon (sean.cahoon@usda.gov). If you have questions about the nature of the research please contact the mentor.

Anticipated Appointment Start Date: February 6, 2023. 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 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, 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 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. Degree must have been received within four years of the appointment start date.

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The ideal applicant will exhibit strength in the following areas:

- Comprehensive understanding of tree-ring science
- Familiarity with Alaska forest ecosystem dynamics
- Programming skills, especially in R and SQL
- Strong understanding of statistical methods and tools applicable to tree-ring science and time-series analyses
- Ability to work with multiple disparate databases
- Familiarity with FIA data
- Self-motivated, independent, and highly organized

Eligibility Requirements

- **Degree:** Doctoral Degree received within the last 60 month(s).
- **Discipline(s):**
 - **Chemistry and Materials Sciences** (12 👁)
 - **Earth and Geosciences** (21 👁)
 - **Environmental and Marine Sciences** (14 👁)
 - **Life Health and Medical Sciences** (48 👁)
 - **Mathematics and Statistics** (1 👁)