

**Opportunity Title:** USDA-FS Fire Modeling Institute Spatial Analyst Fellowship **Opportunity Reference Code:** USDA-FS-RMRS-2024-0257

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

Reference Code USDA-FS-RMRS-2024-0257

How to Apply To submit your application, scroll to the bottom of this opportunity and click APPLY.

A complete application 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.
  Click here for detailed information about acceptable transcripts.
- A current resume/CV, including academic history, employment history, relevant experiences, and publication list
- 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.

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

USDA Forest Service Office/Lab and Location: A fellowship opportunity is available with the US Department of Agriculture (USDA) Forest Service (FS) within the Rocky Mountain Research Station (RMRS) located in Missoula, Montana. This specific opportunity is with the Fire Modeling Institute (FMI) at the Missoula Fire Sciences Laboratory. FMI is a center of expertise that supports fire and fuels management planning, resource management, and science implementation locally, regionally, nationally, and internationally.

At the heart of the USDA 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 USDA 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 opportunity is for a post-MS/MA graduate with skills in geospatial analysis. The participant will be integrated into the staff of the Fire Modeling Institute (FMI), part of the Fire, Fuel, and Smoke Science Program in the US Forest Service Rocky Mountain Research Station. This person will learn about contributing to projects involving complex

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> analysis of large spatial datasets. Many of FMI's projects are national in scope and require analysis of large raster datasets. Projects include mapping and analysis of wildfire hazard potential and wildfire risk; assembling datasets representing fuel treatments and other landscape vegetation disturbances; using outputs of spatial fire behavior models to analyze wildfire transmission across jurisdictions; acquiring and processing satellite imagery to map post-fire burn severity; and many others. This analyst will contribute skills in GIS and data analysis and collaborate alongside other analysts in FMI.

Learning Objectives: This opportunity will allow the participant to directly apply and strengthen skills in spatial analysis acquired during their graduate education. This will include gaining experience in practical application of the diverse suite of software available for spatial data analysis and visualization including ArcGIS Pro, ArcGIS Online, python, R, and Google Earth Engine. Given the nature of FMI's work, the participant will also get first-hand experience with how spatial datasets, and specifically those produced from spatial fire behavior modeling, can be used to inform fire and fuels management decisions in land management agencies. The participant will have the opportunity to learn about state-ofthe-art spatial wildfire modeling, the types of datasets produced from modeling, and the applications and limitations of modeled data. Specific learning objectives include:

- Expand upon skills in raster spatial analysis and scripting.
- · Learn about concepts of spatial wildfire hazard and risk assessment.
- Learn about spatial datasets depicting vegetation and wildland fuels in the United States.
- Learn about web-based wildfire decision support and modeling tools such as the Wildland Fire Decision Support System, the Interagency Fuels Treatment Decision Support System, and the related Fire Modeling Services Framework.
- Learn about the fundamentals of fire science behind different fire modeling systems.

**Mentor:** The mentor for this opportunity is Gregory Dillon (<u>greg.dillon@usda.gov</u>). If you have questions about the nature of the research, please contact the mentor.

Anticipated Appointment Start Date: September 2024. Start date is flexible and will depend on a variety of factors.

**Appointment Length:** The appointment will initially be for two years but may be extended upon recommendation of USDA Forest Service 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 <u>Guidelines for Non-U.S. Citizens</u> <u>Details page</u> of the program website for information about the valid



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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 USDA Forest Service. Participants do not become employees of USDA, USDA Forest Service, 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 <u>Program Website</u>. After reading, if you have additional questions about the application process please email <u>ORISE.USFS.RMRS@orau.org</u> and include the reference code for this opportunity.

Qualifications The qualified candidate should have received a master's degree in one of the relevant fields (Geography, Geographic Information Science, Environmental Sciences, Forestry, Ecology or related disciplines). Degree must have been received within the past five years.

## Preferred skills:

- Proficiency in the ESRI suite of GIS software (ArcGIS Pro, etc.) and raster analysis techniques
- Skills in coding and automation using Python or R are highly desirable, as is a working knowledge of Google Earth Engine
- Related disciplines where spatial and statistical analysis techniques were a primary element of the degree program
- Previous experience with wildland fire in any capacity would be beneficial

**Eligibility** • **Degree:** Master's Degree received within the last 60 month(s).

## Requirements • Discipline(s):

- Computer, Information, and Data Sciences (2. )
- Earth and Geosciences (4 )
- Environmental and Marine Sciences (8.)
- Life Health and Medical Sciences (9.)