

**Opportunity Title:** USFS Research Opportunity in Chemical Ecology of Plants and Insects

**Opportunity Reference Code:** USDA-USFS-2023-0091

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

**Reference Code** USDA-USFS-2023-0091

**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** 5/26/2023 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 currently available with the United States Department of Agriculture (USDA), U.S. Forest Service (USFS), Rocky Mountain Research Station located in Bozeman, Montana.

At the heart of the US 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.

Rocky Mountain Research Station, US Forest Service, researchers work in a range of biological, physical and social science fields to promote sustainable management of the Nation's diverse forests and rangelands. The Station develops and delivers scientific knowledge and innovative technologies with a focus on informing policy and land-management decisions. Our researchers work in collaboration with a range of partners, including other agencies, academia, nonprofit groups, and industry. The Rocky Mountain Research Station serves the Forest Service as well as other federal and state agencies, international organizations, Tribes, academia, non-profit groups and the public.

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**Research Project:** The postgraduate will participate in a chemical ecology project that will involve both laboratory and field components. The project will focus on the chemical ecology of Great Basin bristlecone pine and how specific defense traits affect bark beetle host selection and brood success. This research will include sampling and analysis of plant chemistry (GC-MS, volatile collection, and analysis), and insect behavior and feeding trials. This understanding will not only aid in management strategies for protecting this iconic species, but other keystone pines that are hosts to bark beetles. Field research will include surveying trees for bark beetle infestation and hopefully applying what is learned in the laboratory to protect trees in the field.

**Learning Objectives:** The incumbent will have the opportunity to contribute intellectually to experimental design, data analysis, interpretation, and publishing and communicating findings. The participant will also be exposed to a management-based research organization (RMRS), learn about the challenges posed by bark beetles to land managers, and how science is seeking ways to address these challenges.

**Mentor:** The incumbent will collaborate closely with USDA Forest Service Research Entomologists Dr. Barbara Bentz (Logan, UT) ([barbara.bentz@usda.gov](mailto:barbara.bentz@usda.gov)), Dr. Justin Runyon (Bozeman, MT) ([justin.runyon@usda.gov](mailto:justin.runyon@usda.gov)) and Dr. Brian Sullivan (Pineville, LA). If you have questions about the research appointment, please contact Dr. Justin Runyon or Dr. Barbara Bentz.

**Anticipated Appointment Start Date:** April 2023; start date is flexible (earlier or later).

**Appointment Length:** The appointment will begin immediately and extend through September 30, 2023.

**Level of Participation:** The appointment is full-time.

**Participant Stipend:** The participant will receive a monthly stipend commensurate with educational level and experience within the range of \$47,840- \$68,640, and a monthly housing allowance of up to \$1,000 will be offered.

**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

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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 be currently pursuing or have received a bachelor's, master's, or doctoral degree in one of the relevant fields. Most recent degree must have been received within the past five years.

Preferred Skills:

- Experience in entomology, biology, ecology or forestry with lab skills and techniques in chemical ecology.

**Eligibility Requirements**

- **Degree:** Bachelor's Degree, Master's Degree, or Doctoral Degree.
- **Academic Level(s):** Graduate Students, Post-Bachelor's, Postdoctoral, Post-Master's, or Undergraduate Students.
- **Discipline(s):**
  - **Chemistry and Materials Sciences** ([12](#))
  - **Environmental and Marine Sciences** ([14](#))
  - **Life Health and Medical Sciences** ([48](#))