Opportunity Title: USFS Conservation Genomics Research Fellowship
Opportunity Reference Code: USDA-USFS-RMRS-2024-0141

Organization U.S. Department of Agriculture (USDA)

Reference Code USDA-USFS-RMRS-2024-0141

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)
- Two educational or professional recommendations.

All documents must be in English or include an official English translation.

Application Deadline 5/24/2024 3:00:00 PM Eastern Time Zone

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

USFS Office/Lab and Location: A fellowship opportunity is available with the US Department of Agriculture (USDA) Forest Service (USFS) located in western Washington state or Missoula, Montana.

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: Under the guidance of a mentor, the participant will contribute to projects in collaboration with numerous partners from state, federal, tribal and non-profit entities to determine the extent and directionality of genomic introgression between salmonids in Washington State.

The study of hybridization has been of long interest to evolutionary biologists to understand and estimate how gene flow and selection shape genomic variation. The participant accepted for this opportunity will use population genomics to estimate the effects of anthropogenic and natural drivers of hybridization on the evolution and genomes of two salmonids. These species are culturally and economically valuable

species in the Pacific Northwest, making the research of extreme, immediate importance to fisheries, recreational and tribal stakeholders. They hybridize both naturally and as a result of anthropogenic stressors throughout the Pacific Northwest, especially in systems highly impacted by dams and hatchery activities.

This research will characterize the chromosomal landscape of hybridization in recent and later stage hybrids of two lab-reared trout species and develop tools for diagnosing hybridization stage in wild populations of trout species. This research will be beneficial to salmonid conservation efforts locally and globally. Furthermore, it will be the first to test hypotheses for distinguishing genomic patterns of natural and anthropogenic driven hybridization in wild populations. This postdoc will collaborate with academic, state, tribal, non-profit and federal partners to assist not only in the generation of defensible science, but the generation of data that informs policy and management. Participants interested in this opportunity should have a keen interest for research, evolutionary biology, genomics, conservation and a willingness to problem solve. Additionally, the selected participant will assist in communicating the science, disseminating the data via presentation and peer reviewed scientific publication and collaborating closely with managers to integrate the science into policy and action.

Learning Objectives: This participant will have learning opportunities to use reduced representation and whole genome sequence data from experimental, lab-produced crosses and natural populations to:

- Identify and validate genomic markers for diagnosing interspecific hybrids
- Disentangling the signals across the genomes of anthropogenic from natural drivers of hybridization.
- Determine if parallel signals of genomic introgression are detected across natural and anthropogenically hybridizing populations.

Mentor: The mentor for this opportunity is Alexandra (Alex) Fraik (alexandra.fraik@usda.gov). If you have questions about the nature of the research, please contact the mentor.

Anticipated Appointment Start Date: August 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 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 ORISE.USFS.RMRS@orau.org and include the reference code for this opportunity.

Qualifications

The qualified candidate should have received or be currently pursuing a master's or doctoral degree in the one of the relevant fields (e.g. conservation biology, genomics, bioinformatics and evolutionary biology). Degree must have been received with the last five years or is anticipated to be received by 9/2/2024.

Preferred experience:

- Preference is given to doctoral degrees, however qualified master's will also be considered.

Eligibility Requirements

- **Degree:** Master's Degree or Doctoral Degree received within the last 60 months or anticipated to be received by 9/2/2024 12:00:00 AM.
- **Discipline(s):**
  - **Environmental and Marine Sciences** (4 👁)
  - **Life Health and Medical Sciences** (3 👁)