Opportunity Title: EPA Wildfire Effects on Aquatic Habitat Research Fellowship
Opportunity Reference Code: EPA-ORD-CPHEA-PESD-2022-01

Organization U.S. Environmental Protection Agency (EPA)

Reference Code EPA-ORD-CPHEA-PESD-2022-01

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 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. All transcripts must be in English or include an official English translation. 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. Click here for detailed information about recommendations.

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

Application Deadline 10/17/2022 3:00:00 PM Eastern Time Zone

Description ***Applications may be reviewed on a rolling-basis and this posting could close before the deadline.** Click **here** for information about the selection process.

EPA Office/Lab and Location: A research training opportunity is available at the Environmental Protection Agency (EPA), Office of Research and Development (ORD), Center for Public Health and Environmental Assessment (CPHEA), Pacific Ecological Systems Division (PESD) located in Corvallis, Oregon.

Research Project: In Western Oregon, Washington and Northern California, the Aquatic and Riparian Effectiveness Monitoring Program (AREMP) collects monitoring data from streams and river to support management of forest lands under the Northwest Forest Plan (NWFP) (~99,000 km2 / 24.5 million acres). Data collection for this program began in 2002 and includes 219 randomly selected watersheds with at least 25% federal ownership that are surveyed on an approximately 8-year return interval. During the operating time-period of this monitoring program, increases in the intensity and severity of wildfires has occurred throughout western states. Due to the extensive distribution of watersheds, and consistent sampling intensity of the field survey program, many watersheds and sites sampled by AREMP have burned due to wildfire over the past 20 years. Of particular interest are the sites that burned after the intense 2020 western Cascade wildfire season of 2020.

The research participant will have the opportunity to collaborate on watershed modeling research at Pacific Ecological Systems Division to support modeling of stream and landscape attributes as influenced by wildfire contained in the AREMP datasets. This research aims to develop a

quantitative foundation for integrating physical and ecological data that is required to improve our capacity to make strategic decisions regarding important current and future policy needs supporting the EPA's capacity to protect the nation's water resources as mandated under the federal Clean Water Act.

This research project involves statistical analysis of empirical as well as remotely sensed data to characterize spatial and temporal effects of wildfire on aquatic environments. This research project will focus on the extensive pre- and post-wildfire data collected by AREMP. This analysis will include comparisons among ecoregions, wildfire intensities, and burn extents on in-stream aquatic habitat. Application of process-based models of stream temperature, sediments, and/or nutrients may be an important component of this research. The research will primarily be conducted using existing datasets but some opportunities for field data collection may occur.

Learning Objectives: The research participant will have the opportunity to collaborate with a team of aquatic ecologists, hydrologists, ecological modelers and other environmental scientists and may have the opportunity to be involved in the following activities:

- Conducting data analysis, documenting code and interpretation of results
- Conducting and documenting quality assurance and review of data analysis and databases
- Preparing reports, presentations and summaries of data
- Presenting results at professional meetings
- Publishing results

Mentor(s): The mentor for this opportunity is Dr. Joseph Ebersole (ebersole.joe@epa.gov). If you have questions about the nature of the research please contact the mentor(s).

Anticipated Appointment Start Date: September 1, 2022. All start dates are flexible and vary depending on numerous factors. Click **here** for detailed information about start dates.

Appointment Length: The appointment will initially be for one year and may be renewed upon EPA recommendation and subject to availability of funding.

Level of Participation: The appointment is full-time.

Participant Stipend: The participant will receive a monthly stipend commensurate with educational level and experience. Click **here** for detailed information about full-time stipends.

EPA Security Clearance: Completion of a successful background investigation by the Office of Personnel Management (OPM) is required for an applicant to be on-boarded at EPA.

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 EPA. Participants do not become employees of EPA, 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.

ORISE offers all ORISE EPA graduate students and Postdocs a free 5 year membership to the National Postdoctoral Association (NPA).

The successful applicant(s) will be required to comply with Environmental, Safety and Health (ES&H) requirements of the hosting facility, including but not limited to, COVID-19 requirements (e.g. facial covering, physical distancing, testing, vaccination).

Questions: Please see the FAQ section of our website. After reading, if you have additional questions about the application process please email ORISE.EPA.ORD@orau.org and include the reference code for this opportunity.

Qualifications

The qualified candidate should be currently pursuing or have received a master's or doctoral (preferred) degree in one of the relevant fields (e.g. Fisheries Science, Ecological Engineering, Hydrology, Ecology, Forest Science, Watershed Science). Most recent degree must have been received within five years of the appointment start date.

Three years of relevant experience and a bachelor's degree in a relevant field may be substituted for a master's degree.

Preferred skills:

- Knowledge of spatial analysis techniques and the ability to manage and analyze spatially explicit datasets
- Knowledge of watershed science, aquatic ecology, geographic information systems (including remote sensing methods and products related to vegetation, topography, and wildfire)
- Experience performing quantitative analysis using a complex spatial and temporal dataset and application of statistical modeling (frequentist or Bayesian or spatial), using standard statistical languages such as R, Stata, or Python
- Data management skills, experience documenting activities and writing reports and scientific manuscripts
- Exceptional communication skills, including writing skills, verbal skills and public speaking experience
- Demonstrated experience effectively working as a part of a group
- Ability to search electronic literature and critically evaluate the quality of published science
- Experience with wildland fire (firefighting and/or post fire assessment or restoration)

Eligibility

- **Citizenship:** U.S. Citizen Only

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Requirements

- **Degree:** Bachelor's Degree, Master's Degree, or Doctoral Degree received within the last 60 months or currently pursuing.
- **Discipline(s):**
  - **Computer, Information, and Data Sciences** (1 👁)
  - **Earth and Geosciences** (1 👁)
  - **Engineering** (1 👁)
  - **Environmental and Marine Sciences** (14 👁)
  - **Life Health and Medical Sciences** (10 👁)
  - **Other Non-Science & Engineering** (1 👁)