Opportunity Title: EPA Fellowship on Water Quality Modeling in Puget Sound Watersheds
Opportunity Reference Code: EPA-ORD-CPHEA-PESD-2023-13

Organization U.S. Environmental Protection Agency (EPA)

Reference Code EPA-ORD-CPHEA-PESD-2023-13

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 5/24/2024 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) in Corvallis, Oregon.

Research Project: The research participant will have the opportunity to collaborate with a team of EPA scientists focused on applications of EPA's VELMA ecohydrology model to inform water quality improvement planning by tribal, community, and state and federal partners in the Puget Sound basin of Washington State, USA. Under the guidance of a mentor the participant will conduct collaborative, partner-driven VELMA modeling to identify watershed best management practices (BMPs) for reducing nitrogen (N) runoff from urban and rural ecosystems to major tributaries of the Puget Sound National Estuary. The research participant will have the opportunity to learn about setting up and running VELMA simulations, and conduct original research on topics relevant to quantifying transfers of terrestrial N sources to two estuarine models – the University of Washington's Salish Sea Model for simulating estuarine hydrodynamics and biogeochemical cycling of N, and NOAA's Atlantis marine food web model for simulating impacts of N and other pollutants on endangered salmonids, orca, and other biota of concern. This multi-institutional effort brings together ecosystem scientists and community, tribal, state, and federal partners seeking to integrate concepts of ecosystem services and trade offs into Puget Sound whole-basin terrestrial-marine restoration planning and management. More information about VELMA and the Puget Sound

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Integrated Modeling Framework can be found here: https://www.epa.gov/water-research/visualizing-ecosystem-land-management-assessments-velma-model, and https://www.pugetsoundinstitute.org/about/pugetsoundmodeling/

Learning Objectives: Under the guidance of a mentor, the research participant may have the opportunity to participate in research activities which may include modeling to forecast and evaluate impacts of climate change, land-use change, and other drivers affecting the production, delivery, and benefits of clean water, salmon habitat, healthy forests and other ecosystem services vital to the health and well-being of Puget Sound tribes and communities directly dependent on these natural resources. Additional opportunities may include application of modeled ecosystem services results to an existing human-natural systems model to estimate environmental, social, and economic trade-offs for alternative future watershed management practices.

Mentor(s): The mentor for this project is Bob McKane (mckane.bob@epa.gov). If you have questions about the nature of the research please contact the mentor.

Anticipated Appointment Start Date: Winter/Spring 2024. 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.

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Qualifications The qualified candidate should have received a master's or doctoral degree in one of the relevant fields, or be currently pursuing one of the degrees with completion before the appointment start date. Degree must have been received within five years of the appointment start date.

Preferred skills/experience:

- Experience with spatially-explicit (grid-based) simulation models that link hydrological and biogeochemical processes within watersheds.
- Strong background in spatial analysis (GIS).
- Strong background in the use of ArcGIS, QGIS, or similar spatial analysis tools.
- Experience with conducting research with models and tools for assessing impacts of climate and land use on water quality/quantity and plant and soil dynamics.
- Communication of modeling results in the peer-reviewed scientific literature and at conferences.

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Master's Degree or Doctoral Degree received within the last 60 months or currently pursuing.
- **Discipline(s):**
  - **Business** (2)
  - **Chemistry and Materials Sciences** (3)
  - **Communications and Graphics Design** (1)
  - **Computer, Information, and Data Sciences** (17)
  - **Earth and Geosciences** (21)
  - **Engineering** (5)
  - **Environmental and Marine Sciences** (14)
  - **Life Health and Medical Sciences** (10)
  - **Mathematics and Statistics** (11)
  - **Other Non-Science & Engineering** (2)
  - **Social and Behavioral Sciences** (3)