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Opportunity Title: Connecting Management and Aquatic Ecosystem Chemistry for the US with Existing Big Data
Opportunity Reference Code: EPA-ORD-NHEERL-WED-2019-01

Organization U.S. Environmental Protection Agency (EPA)

Reference Code EPA-ORD-NHEERL-WED-2019-01

How to Apply A complete application consists of:

- An application
- Transcripts – 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

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

If you have questions, send an email to EPArpp@orau.org. Please include the reference code for this opportunity in your email.

Application Deadline 8/7/2019 3:00:00 PM Eastern Time Zone

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

A research opportunity is available at the Environmental Protection Agency (EPA), Office of Research and Development (ORD), National Health and Environmental Effects Research Laboratory (NHEERL), Western Ecology Division (WED) in Corvallis, Oregon.

We currently have two (2) post-doctoral research projects examining the effects of local management on stream, river, wetland, lake and groundwater chemistry. Nitrogen (N) and Phosphorus (P) release to air, land and water have increased by three to five fold under human influence to meet energy and food demand in the conterminous US. The environmental effects of nutrient release include a cascade of impacts to air, land, freshwater, and coastal ecosystems, including contamination of drinking water and cyanobacterial Harmful Algal Blooms (HABs). Federal, state and local entities fund efforts on the ground designed to minimize the release of pollutants to the environment, yet the scale of monitoring often is not adequate to determine the effectiveness of these efforts. This research will bring together existing monitoring data from the US EPA's National Aquatic Resources Survey, Safe Drinking Water Information System, StreamCat, LakeCat, Cyanobacteria Assessment Network and the Toxics Release Inventory together with spatial databases of N and P input inventories and with federal and state databases on conservation programs.

The research participant(s) will have the opportunity to learn about EPA's research program on the impacts of watershed management on water pollution, to conduct research on geospatial data sets that have been assembled by a cross-agency team, and to apply watershed analyses and aquatic survey data to EPA science needs. The study will determine the possible levels of pollutant reductions predicted at state, regional and national scales from conservation activities, and whether these conservation programs have led to changes in water body nutrient levels or loads. The research will move across scales, and the research participant would develop modeling efforts to inform local to national management questions. The research participant will be mentored by WED and other EPA scientists as part of a national EPA program in the impacts of nitrogen within EPA's Safe and Sustainable Water Research Program. This interdisciplinary effort combines approaches to compile, analyze and share complex databases on landscape characteristics, pollutant loads and sources, and water quality.

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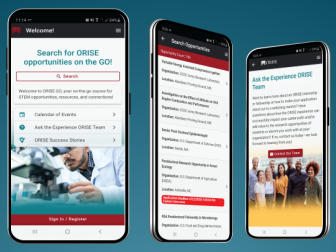
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This research project will (1) examine the relationships between watershed management activities and aquatic nutrient concentrations and effects, (2) determine the impacts of small-scale and large-scale nutrient management activities on aquatic ecosystems, (3) contribute to watershed analysis pertinent to nutrient management and trading, and (4) communicate, via published works, the results of these analyses.

The mentor for this opportunity is Jana Compton (compton.jana@epa.gov).

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. The initial appointment is for one year, but may be renewed upon recommendation of EPA and is contingent on the availability of funds. The participant will receive a monthly stipend commensurate with educational level and experience. Proof of health insurance is required for participation in this program. The appointment is full-time at EPA in the Corvallis, Oregon, area. Participants do not become employees of EPA, DOE or the program administrator, and there are no employment-related benefits.

Qualifications

The qualified candidate should have received a doctoral degree in one of the relevant fields, or be currently pursuing the degree and will reach completion by the start date of the appointment. Degree must have been received within five years of the appointment start date.

Preferred skills:

- Background in geographic information systems and GIS analyses, experience with ArcGIS is preferred
- Experience in database development and management
- Experience in watershed or statistical modeling and spatial analyses, experience with R is preferred
- Knowledge of watersheds and aquatic systems such as aquatic ecology, ecohydrology, watershed hydrology

Eligibility Requirements

- **Degree:** Doctoral Degree received within the last 60 months or anticipated to be received by 9/1/2019 12:00:00 AM.
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (1)
  - **Communications and Graphics Design** (1)
  - **Computer, Information, and Data Sciences** (1)
  - **Earth and Geosciences** (3)
  - **Engineering** (2)
  - **Environmental and Marine Sciences** (14)
  - **Life Health and Medical Sciences** (6)
  - **Mathematics and Statistics** (4)