

Opportunity Title: Knowledge Engineering for Development of a Wildfire Water Quality App

Opportunity Reference Code: EPA-ORD-NHEERL-WED-2018-13

Organization U.S. Environmental Protection Agency (EPA)

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How to Apply A complete application consists of:

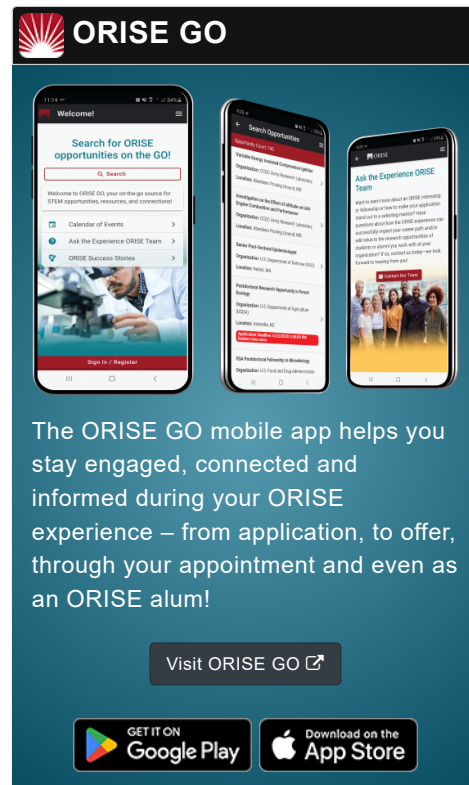
- An application
- Transcripts – [Click here for detailed information about acceptable transcripts](#)
- A current resume/CV, including academic history, employment history, relevant experiences, and publication list
- Two educational or professional references

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.

Description As a part of EPA's Air and Energy National Research Program, researchers are examining the effect of wildfire on water quality, including (1) a review of the current scientific literature to identify factors increasing the vulnerability of drinking water to wildfire, (2) empirical analyses demonstrating the relationship between wildfire and water quality in drinking water and streams, (3) watershed-scale modeling to determine the factors influencing water quality impacts, and (4) evaluating tools for assessing vulnerability and identifying strategies for reducing risk. EPA wishes to incorporate knowledge gained from these research efforts and other sources into a wildfire water quality app that can be used by drinking water and aquatic managers to understand risks to their systems from wildfire and to provide strategies for reducing these risks.

This opportunity is for a research participant with expertise in knowledge engineering that will contribute to the water quality app development. The research participant will communicate with clients and stakeholders to determine their needs and requirements and develop a knowledge base design and organization that meets these stakeholder requirements. The research participant will gain experience through developing a knowledge base from a variety of sources, including information resulting from the literature review, empirical analyses, watershed modeling, and tool evaluation, as well as spatial information from remote sensing and Geographic Information Systems (GIS). The research participant will work with groups and subject matter experts to transform knowledge of wildfire



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effects into strategies for reducing water quality risks for specific geographic areas and conditions. The participant may develop and implement an approach for evaluating and reporting on the data and information quality upon which specific risks and strategies are based. The research participant will develop expertise in communicating to a variety of technical and non-technical audiences by contributing to technical and end-user documentation, preparing reports and summaries of findings, presenting results at meetings, and contributing to publications. The research participant will also develop collaborative skills through interaction with a team of researchers with diverse interests such as, software developer, senior-level computer scientist, aquatic and landscape ecologists, geographers, and other environmental scientists.



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 in the Corvallis, Oregon area. Participants do not become employees of EPA, DOE or the program administrator, and there are no employment-related benefits.

The mentor for this project is Scott Leibowitz (leibowitz.scott@epa.gov). The anticipated start date for the appointment is October 1, 2018.

Qualifications

The applicant should have a Bachelor's or Master's degree in computer science, engineering, mathematics, or a closely-related field. The degree must be received within five years of the appointment start date. Candidates should have a strong background in knowledge engineering and database development, including experience designing, creating and using SQL databases. Candidates should have experience in a number of different computer languages, including at least one object oriented language. Experience with databases and web development is preferred. Experience with GIS and training in one of the sciences is desirable.

Eligibility Requirements

- **Citizenship:** LPR or U.S. Citizen
- **Degree:** Bachelor's Degree or Master's Degree received within the last 60 month(s).
- **Discipline(s):**
 - **Computer, Information, and Data Sciences** (8 )
 - **Engineering** (2 )

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