Opportunity Title: Spatial Modeling of Wild-Land Fire Hydrology and Green Infrastructure for Water Resource Protection
Opportunity Reference Code: EPA-ORD-NERL-CED-2019-01

Organization	U.S. Environmental Protection Agency (EPA)
Reference Code	EPA-ORD-NERL-CED-2019-01
How to Apply	A complete application consists of:

- An application
- ## Statement of Research Interests
- Salary Certification
- 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.

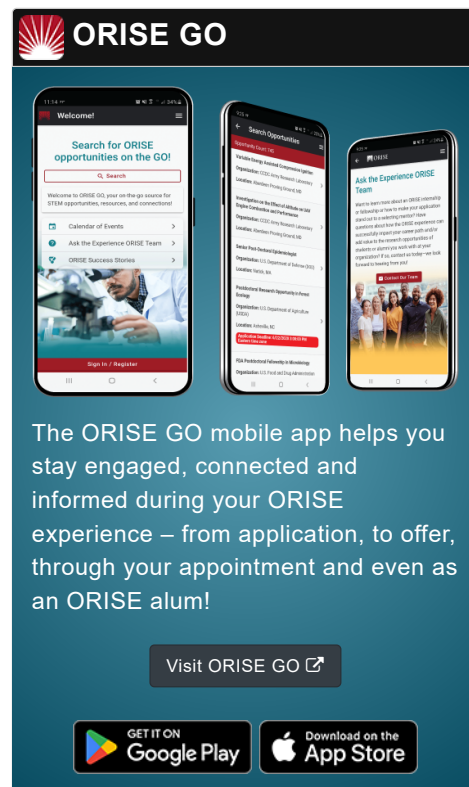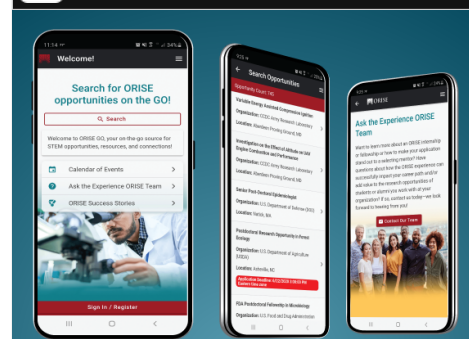|	
Application Deadline	9/3/2019 3:00:00 PM Eastern Time Zone
Description	***Applications will be reviewed on a rolling-basis.**

A research opportunity is currently available at the Environmental Protection Agency (EPA), Office of Research and Development (ORD), National Exposure Research Laboratory (NERL), Computational Exposure Division (CED) located in Athens, Georgia.

The increasing frequency and severity of wildfires, particularly in the western U.S., poses a growing risk to human health. Wildfires can affect watersheds, water quality, and drinking water treatment through the mobilization of sedimentation and other pollutants. We propose to use a "one-biosphere", integrated systems modeling approach to this research need. Within the project, we will couple models for air quality (CMAQ), watershed hydrology (VELMA), water quality (WASP), stream temperature (QUAL2K), and forest landscape disturbance (LANDIS-II), including wildfires. VELMA, as the core spatially-explicit watershed model, will also be used in studies of urban storm water management evaluating the effectiveness of green infrastructure practices. Use of storm water as captured surface water for enhanced aquifer recharge and for beneficial uses will be evaluated through models and field studies.

The research participant will collaborate with a diverse, integrated, multidisciplinary team of EPA researchers and engineers and may conduct research in the following areas:

- developing spatial datasets to support fire spread, watershed and water quality modeling
- using VELMA to evaluate green infrastructure practices for urban storm water management
- enhanced aquifer recharge and use of harvested rainwater
- using the LANDIS modeling framework

- linking model input and output across spatial and temporal scales, from meters to kilometers and hours to days within a gridded modeling domain
- model evaluation

The mentor for this opportunity is John M. Johnston (Johnston.johnm@epa.gov).

Anticipated Appointment Start Date: August 15, 2019

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 Athens, Georgia, 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:

- Proficiency in Geographic Information Systems (GIS)
- Development and management of geodatabases

Eligibility Requirements

- **Degree:** Doctoral Degree received within the last 60 months or anticipated to be received by 8/15/2019 11:59:00 PM.
- **Discipline(s):**
  - **Computer, Information, and Data Sciences** (4 👁)
  - **Earth and Geosciences** (2 👁)
  - **Engineering** (4 👁)
  - **Environmental and Marine Sciences** (4 👁)
  - **Life Health and Medical Sciences** (5 👁)
  - **Social and Behavioral Sciences** (1 👁)