Opportunity Title: Drinking Water and Storm Water Infrastructure Modeling and Simulation
Opportunity Reference Code: EPA-ORD-NRMRL-WSD-2018-01

Organization U.S. Environmental Protection Agency (EPA)

Reference Code EPA-ORD-NRMRL-WSD-2018-01

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 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 The research participant will learn about ongoing EPA research on water infrastructure modeling and simulation, based on EPA developed software tools: EPANET (for water distribution systems), SWMM (for storm water systems), and WNTR (for analyzing the resilience of water infrastructure to disasters). The research participant will learn about the fate and transport of chemicals and pathogens of concern within water distribution systems and also within premise plumbing systems, such as homes or buildings. The research participant will also learn about EPA's open source software development projects, and the tools that are available to support open source projects. The research participant will be a member of an EPA research team that conducts a broad range of activities, and the research participant will be involved in a variety of challenging and rewarding projects and tasks, such as:

- Reviewing literature related to water infrastructure modeling, drinking water and storm water systems, premise plumbing systems, water system operation, the risks of contaminants in water systems, water treatment processes, exposure and risk assessment.
- Gathering data related to contaminants of concern to be used by the team for modeling, simulation and analysis for case study applications.
- Learning to use and evaluate the features and capabilities of EPA's drinking water distribution system tools and user interfaces.
- Assisting with experiments to generate data needed for models.
- Analyzing data to better understand the risks of contaminants in water systems.
- Writing, reviewing, and editing scientific reports.
- Presenting data and research at regional or national conferences.
- Being an active member of a research team, and participating in relevant meetings and communications between researchers and

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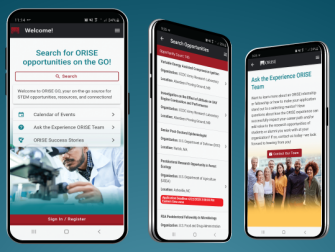
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stakeholders.

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. 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 Jonathan Burkhardt (burkhardt.jonathan@epa.gov). The anticipated start date for the appointment is August 13, 2018.

Qualifications

Applicants must have a PhD within five years of the desired starting date or completion of all requirements for the degree should be expected prior to the starting date. The degree should be in systems, environmental, civil, chemical, mechanical, software or electrical engineering, applied mathematics, computer science, operations research or a related field. The candidate should have taken courses or be familiar with water systems engineering, fluid dynamics, and modeling and programming.

Coursework related to water systems and civil engineering; ability to analyze data using Microsoft Excel, Matlab, or other tools; ability to program in Python and C/C++; experience writing technical documents or journal articles; experience preparing and delivering PowerPoint presentations; familiarity with EPANET, SWMM and WNTR.

Eligibility Requirements

- **Citizenship:** LPR or U.S. Citizen
- **Degree:** Doctoral Degree.
- **Discipline(s):**
  - **Computer, Information, and Data Sciences** (16 👁)
  - **Earth and Geosciences** (1 👁)
  - **Engineering** (8 👁)
  - **Environmental and Marine Sciences** (2 👁)
  - **Mathematics and Statistics** (4 👁)