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Opportunity Title: EPA Environmental Modeling Internship
Opportunity Reference Code: EPA-ORD-CEMM-EPD-2020-02-A

Organization U.S. Environmental Protection Agency (EPA)

Reference Code EPA-ORD-CEMM-EPD-2020-02-A

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 12/31/2020 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 opportunity is available at the Environmental Protection Agency (EPA), Office of Research and Development (ORD), Center for Environmental Measurement & Modeling (CEMM), Ecosystems Processes Division (EPD) located in Athens, Georgia.

The Center for Environmental Measurement and Modeling (CEMM) conducts research to advance the Agency's ability to measure and model contaminants in the environment, including research to provide fundamental methods and models needed to implement environmental statutes.

Research Project: This research project is focused on applying quantitative analytical skills to evaluate and expand the ability of EPA environmental models to accurately predict effects of water availability and quality on indicators related to community resiliency and human well being. The EPA uses publicly available data and computer models to integrate core science exposure processes in multiple exposure media. Data and models are used to simulate hydrology and water quality across temporal and spatial scales (e.g., field, site, watershed, regional, national, global).

The research participant may be involved in the following learning activities:

- Contributing to the development and application of watershed models used by the EPA over a large geographical area at a relatively small contiguous watershed resolution with an emphasis on interoperability with other fate, transport, exposure and effect models.

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- Contributing to model development, application, documentation and utilization of models used by the Agency for assessing risks from chemicals.
- Computer programming (Python, C#, Javascript, HTML, and GIS), numerical verification of model output, cloud-based software deployment, model execution, model Application Programming Interface (API) development and documentation.
- Team programming skills in the context of modern scientific programming approaches and leveraging a web programming technology stack (Django, Leaflet, Celery, Flask, Docker) with a cloud computing implementation.
- Participating in making models publicly available as web applications and evaluating the ability of these models to effectively assess environmental exposures and effects.

Learning Objectives: The research participant will have the opportunity to gain knowledge from an interdisciplinary research team with expertise in hydrology, ecology, GIS, model development, and software engineering. Through regular interactions with this team, the research participant will gain insight into the process of developing, evaluating, and applying models and decision support tools to characterize fate and transport of pollutants in environmental media and living systems, and to use these models to inform potential human and ecosystem exposure to environmental stressors. The research participant will have an opportunity to communicate her/his finding through publication of manuscripts and participation in scientific conferences. The researcher is encouraged to collaborate on writing of manuscripts for publication and project reports.

Mentor(s): The mentors for this opportunity are Kurt Wolfe (Wolfe.Kurt@epa.gov) and Rajbir Parmar (Parmar.Rajbir@epa.gov). If you have questions about the nature of the research please contact the mentor(s).

Anticipated Appointment Start Date: Winter 2021. 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 three months to one year and may be renewed three to four additional years 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

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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.

Questions: Please see the FAQ section of our website. After reading, if you have additional questions about the application process please email EPArpp@orau.org and include the reference code for this opportunity.

Qualifications

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

Preferred skills:

- Skills/experience with programming languages (Python, C#, HTML, Javascript and related frameworks such as Leaflet, Angular, D3 and, GIS)
- Experience with cloud deployment, containers and DevOps, and watershed modeling
- Experience working with geospatial data

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Bachelor's Degree received within the last 60 months or anticipated to be received by 12/31/2020 11:59:00 PM.
- **Discipline(s):**
  - **Computer, Information, and Data Sciences** (16)
  - **Earth and Geosciences** (3)
  - **Engineering** (27)
  - **Environmental and Marine Sciences** (14)
  - **Life Health and Medical Sciences** (45)
  - **Mathematics and Statistics** (10)
  - **Physics** (16)
- **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).