Opportunity Title: EPA Bioinformatics and Data Science Fellowship
Opportunity Reference Code: EPA-ORD-CCTE-BCTD-2021-01

Organization U.S. Environmental Protection Agency (EPA)

Reference Code EPA-ORD-CCTE-BCTD-2021-01

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 5/7/2021 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 Computational Toxicology and Exposure (CCTE), Biomolecular & Computational Toxicology Division (BCTD) located in Research Triangle Park, North Carolina.

The EPA CCTE is responsible for developing new experimental models that can be used to evaluate the potential for chemicals to produce adverse effects on human and ecological health for improving environmental risk assessments and regulatory decisions pertaining to chemical safety and sustainability.

Research Project: This project aims to develop computational models to predict the safety of chemicals without running tests on whole animals. The tools to be used include high-throughput transcriptomic screening data across multiple cell lines, databases of previously run animal studies, data from other in vitro high-throughput screening experiments, data and models for in vitro to in vivo extrapolation of dose, and outputs of various predictive models of chemical action. The project integrates bioinformatics, data science, software engineering, applied statistics, and predictive mathematical modeling, with the broader goal of advancing safety assessment using new

approach methodologies.

Under the guidance of a mentor, the research participant will learn to develop novel bioinformatics and biostatistics applications to integrate multiple data streams relevant to toxicological testing, including transcriptomics, biochemical assays, and other high-throughput screening methods. Research activities may include:

1. Helping develop models to predict toxicological outcomes of animal testing from in vitro assays
2. Helping develop a data science infrastructure to simulate outcomes of tiered testing strategies that combine multiple in vitro screening methods
3. Learning how to curate and manage large-scale heterogeneous chemical safety screening data
4. Evaluating additional methods to integrate data across screening studies.

Learning Objectives: This is a research training opportunity where in the candidate will gain education and training in the general areas of bioinformatics data science, transcriptomics, computational toxicology, and mathematical modeling in preparation for future career opportunities across government, industry, and academic sectors.

The research participant may also author or co-author on peer-reviewed publications, and present at local and national meetings. The participant will be a member of a multi-disciplinary research team.

Mentor(s): The mentors for this opportunity are Katie Paul-Friedman (paul-friedman.katie@epa.gov) and Logan Everett (Everett.logan@epa.gov). If you have questions about the nature of the research please contact the mentor(s).

Anticipated Appointment Start Date: Spring 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 one year and may be renewed up to three or 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.

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ORISE Information: 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. 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 ORISE.EPA.ORD@orau.org and include the reference code for this opportunity.

Qualifications

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

Preferred skills:

- Software development experience in R and/or Python
- Strong written, oral and electronic communication skills
- Experience in bioinformatics, and/or pharmacokinetics or mathematical modeling
- Proficient in the use of MySQL and NoSQL database solutions

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Master's Degree or Doctoral Degree received within the last 60 months or anticipated to be received by 5/31/2021 11:59:00 PM.
- **Academic Level(s):** Graduate Students, Postdoctoral, or Post-Master's.
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (6 👁)
  - **Computer, Information, and Data Sciences** (4 👁)
  - **Engineering** (3 👁)
  - **Environmental and Marine Sciences** (2 👁)
  - **Life Health and Medical Sciences** (11 👁)
  - **Mathematics and Statistics** (4 👁)
  - **Other Non-Science & Engineering** (2 👁)
  - **Physics** (2 👁)
- **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).