Opportunity Title: EPA Development of Computational Workflows to Integrate Data

Opportunity Reference Code: EPA-ORD-CCTE-BCTD-2023-02

Organization	U.S. Environmental Protection Agency (EPA)
Reference Code	EPA-ORD-CCTE-BCTD-2023-02
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	3/31/2023 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 within the Computational Toxicology and Bioinformatics Branch 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 Durham, North Carolina.

CCTE is responsible for developing new computational tools and providing quantitative analysis for improving environmental risk assessments and regulatory decisions pertaining to chemical safety and sustainability.

Research Project: This research project aims to develop new computational approaches to estimate toxicological "tipping points" for environmental chemicals using cell-level NAMs data. Tipping points represent system thresholds below which chemical exposures are likely transient and adaptive. Specifically, this research program within the CCTE-BCTD-Computational Toxicology and Bioinformatics Branch will develop computational and experimental approaches to identify tipping points. Tools from this research will enable tiered testing for environmental chemicals, including PFAS, that activate different adaptive stress response pathways.

This research participant will collaborate with multiple investigators spanning molecular biology, toxicology, systems biology, and computational biology. The research participant will use various computational and knowledge management tools to integrate and curate information about the effects of environmental chemicals.

Research activities may include:

- Hands-on participation in experimental research and data interpretation
- Active participation in meetings of the project team
- Preparing reports, presentations, and summaries of the data
- Presenting at professional meetings
- Authoring manuscripts for publication in peer-reviewed journals

Learning Objectives: The research participant will learn how to:

- Develop computational workflows using artificial intelligence (AI), and machine learning (ML) for extracting information from literature and public databases
- Integrate, curate, and analyze heterogeneous chemical, biological and toxicological data
- Synthesize results for publication and presentation

Mentor(s): The mentor for this opportunity is Imran Shah (shah.imran@epa.gov). If you have questions about the nature of the research, please contact the mentor(s).

Anticipated Appointment Start Date: December 1, 2022. 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 four years and may be renewed up to five 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 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.

ORISE offers all ORISE EPA graduate students and Postdocs a free 5-year membership to the National Postdoctoral Association (NPA).

The successful applicant(s) will be required to comply with Environmental, Safety and Health (ES&H) requirements of the hosting facility, including but

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not limited to, COVID-19 requirements (e.g., facial covering, physical distancing, testing, vaccination).

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 bachelor's degree in one of the relevant fields or be currently pursuing the degree with completion by June 30, 2023. Degree must have been received within the past five years.

Highly motivated individuals with training in computational biology, bioinformatics, biomedical engineering, biophysics, toxicology or related discipline with experience in data analysis, modeling, and visualization using Python and R are encouraged to apply.

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Bachelor's Degree received within the last 60 months or anticipated to be received by 6/30/2023 11:59:00 PM.
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (12 👁)
  - **Computer, Information, and Data Sciences** (17 👁)
  - **Engineering** (27 👁)
  - **Life Health and Medical Sciences** (48 👁)
  - **Mathematics and Statistics** (11 👁)
  - **Physics** (16 👁)