Opportunity Title: EPA Fellowship in Bioinformatics/Data Science
Opportunity Reference Code: EPA-ORD-CCTE-BCTD-2024-05

Organization U.S. Environmental Protection Agency (EPA)

Reference Code EPA-ORD-CCTE-BCTD-2024-05

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 1/31/2025 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 Durham, North Carolina.

Research Project: This project aims to develop analysis methods and resources to facilitate mechanism of action inference for chemicals screened with high-dimensional bioactivity assays such as high throughput transcriptomics and/or cell painting. This endeavor will involve developing novel statistical approaches to interpreting high dimensional data streams as well as interacting with chemical bio-assay databases and software packages (both publicly available and custom, in-house tools). The project integrates toxicology, bioinformatics, data science, software engineering, and applied statistics.

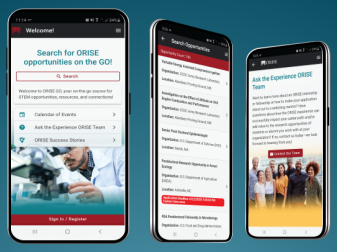
Learning Objectives: Under the guidance of a mentor, research activities may include:

- Developing and evaluating methods for predicting mechanisms of action of data poor chemicals from high dimensional bio-assay data.
- Development of methods to extract chemical mechanism of action information from public data sets with heterogeneous data structures.
- Validation of chemical-molecular target associations using EPA generated bio-assay data and literature evidence.

The research participant will author or co-author on peer-reviewed publications, and will present at local and national meetings, which should help make the research participant a strong candidate for a variety of scientific career paths across government, industry, and academia. The research participant will be a member of a multi-disciplinary research team.

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Mentor(s): The mentor for this opportunity is Joseph Bundy (bundy.joseph@epa.gov) and co-mentor Logan Everett (everett.logan@epa.gov). If you have questions about the nature of the research, please contact the mentor.

Anticipated Appointment Start Date: November 1, 2024. 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 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 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 master's degree or doctoral degree in one of the relevant disciplines. Degree must have been received within the past five years.

Preferred Skills/Experience:

- Experience with quantitative high dimensional biological datasets.
- Experience with public databases with public databases containing chemical toxicity data (ChemBL, PubChem, DrugBank).
- Experience with text mining and machine learning.
- Proficiency in developing data science applications with R and/or Python.
- Experience in the use of MySQL and NoSQL database solutions.
- Proficiency with Microsoft Office applications (i.e., Excel, PowerPoint, Word, Outlook).
- Strong written, oral, and electronic communication skills.

Eligibility

- **Citizenship:** U.S. Citizen Only

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Requirements

- **Degree:** Master's Degree or Doctoral Degree received within the last 60 month(s).
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (8 👁)
  - **Computer, Information, and Data Sciences** (17 👁)
  - **Earth and Geosciences** (21 👁)
  - **Engineering** (5 👁)
  - **Environmental and Marine Sciences** (14 👁)
  - **Life Health and Medical Sciences** (51 👁)
  - **Mathematics and Statistics** (11 👁)
  - **Other Non-Science & Engineering** (1 👁)
  - **Physics** (1 👁)
  - **Social and Behavioral Sciences** (1 👁)