

**Opportunity Title:** EPA Postdoctoral Fellowship in Bioinformatics and Computational Toxicology

**Opportunity Reference Code:** EPA-ORD-CCTE-GLTED-2022-12

**Organization** U.S. Environmental Protection Agency (EPA)

**Reference Code** EPA-ORD-CCTE-GLTED-2022-12

**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.

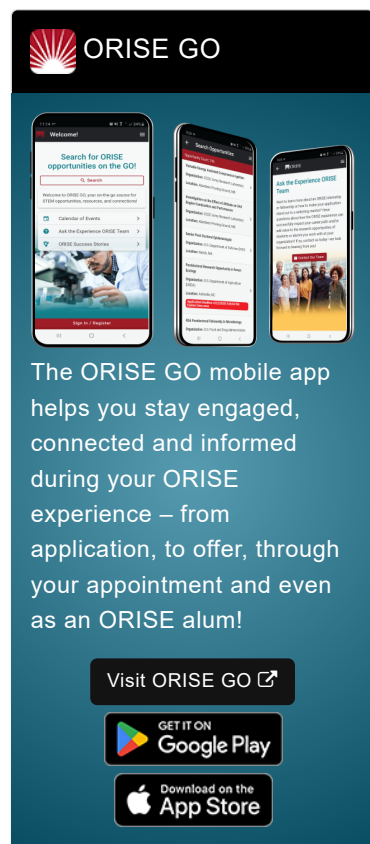
All documents must be in English or include an official English translation.

**Application Deadline** 2/6/2023 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 at the Environmental Protection Agency (EPA), Office of Research and Development (ORD), Center for Computational Toxicology and Exposure (CCTE), Great Lakes Toxicology & Ecology Division (GLTED) located in Research Triangle Park, North Carolina.


**Research Project:** This is a joint research training opportunity provided by the Molecular Indicators Branch (MIB) and the Environmental Genomics Branch (EGB) in the Office of Research and Development. MIB conducts research mainly in ecotoxicogenomics fields, using next-generation sequencing (NGS)-based approaches to comprehensively assess toxicological effects of environmental toxicants on aquatic organisms to predict and alleviate impacts of environmental pollutants on the ecosystem. EGB focuses on microbial and chemical risk assessment, relying on big-data approaches to establish the connections between human health and the environment to reduce ecological impacts of nutrient pollution and ensure recreational and drinking water quality. The research participant will have opportunities to collaborate on multiple research programs including Regional-ORD Applied Research Program (ROAR), Safe and Sustainable Water Resources Research Program (SSWR), and Chemical Safety for Sustainability Research Program (CSS). The research participant will be involved in design of laboratory experiments, NGS data analysis and interpretation, design and development of new statistical methods for integrated omics data analysis, and communicating results intra- and extramurally. The research participant will be trained in molecular genetics,




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bioinformatics, statistics, and machine learning algorithms for multi-omics data analysis and interpretation.

**Learning Objectives:** With guidance from the mentors, the research participant may be involved in any of the following training activities:

- Designing analysis pipelines and performing analysis of RNA-seq, RRBS, metagenomics, other environmental omics data
- Providing biological context and interpretation of NGS data to characterize chemical MOA
- Applying machine learning algorithms for identification of biomarkers and classification of environmental toxicants
- Contributing to the preparation of peer-reviewed journal articles and disseminating research results to project partners, stakeholders, and the research community
- Presenting research at regional, national, and/or international conferences and workshops

The research participant will be afforded the opportunity to interact with internationally recognized leaders, both within and outside the EPA, the area of bioinformatics and in ecotoxicogenomics. The research participant will have the opportunity to contribute to and to publish original research. It is expected that this training opportunity will provide an early career scientist with knowledge, skills, and abilities needed to apply new technologies and associated data to regulatory decision-making at the local, national, or international scale and to pursue a professional career in life sciences research.

**Mentor(s):** The mentor for this opportunity is Weichun Huang ([huang.weichun@epa.gov](mailto:huang.weichun@epa.gov)) and the co-mentor is Jingrang Lu ([lu.jingrang@epa.gov](mailto:lu.jingrang@epa.gov)). If you have questions about the nature of the research, please contact the mentor(s).

**Anticipated Appointment Start Date:** January 10, 2023. 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 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 contract with the U.S. Department of Energy (DOE) to manage the Oak

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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 [EPArpp@orau.org](mailto:EPArpp@orau.org) and include the reference code for this opportunity.

**Qualifications** The qualified candidate should have received a doctoral degree in one of the relevant fields (e.g. Bioinformatics, Statistics, Computational Biology, Computer Science, Genetics, Molecular Biology, Computational Toxicology), or be currently pursuing the degree with completion before the appointment start date. Degree must have been received within five years of the appointment start date.

Preferred skills:

- 1) solid interdisciplinary knowledge in statistics, biology, environmental sciences, and computer science
- 2) excellent programming skills, proficiency with at least two programming languages (e.g. R, Perl/Python, C++)
- 3) familiarity with Linux system and basic shell scripting
- 4) excellent oral and written communication skills
- 5) experience in next-generation sequencing data or other large biological data analysis
- 6) demonstrated skills and knowledge in big-data mining, visualization, and informatics tool development
- 7) demonstrated knowledge and skills in developing new bioinformatics/statistics methods/tools

- Eligibility Requirements**
- **Citizenship:** U.S. Citizen Only
  - **Degree:** Doctoral Degree received within the last 60 months or currently pursuing.
  - **Discipline(s):**
    - **Computer, Information, and Data Sciences** ([17](#) )
    - **Engineering** ([4](#) )
    - **Environmental and Marine Sciences** ([1](#) )
    - **Life Health and Medical Sciences** ([48](#) )
    - **Mathematics and Statistics** ([4](#) )