

**Opportunity Title:** EPA Postdoctoral Fellowship in Computational Biology

**Opportunity Reference Code:** EPA-ORD-CCTE-BCTD-2021-04



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

**Reference Code** EPA-ORD-CCTE-BCTD-2021-04

**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** 11/19/2021 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.

**Research Project:** This research project aims to develop computational models to predict the safety of chemicals without running tests on whole animals. The tools to be used include databases of chemicals of environmental interest, previously run animal studies, data from in vitro experiments (from cell-based and biochemical assay platforms), and outputs of various predictive models of chemical action. The project integrates data science, software engineering, applied statistics, and predictive mathematical modeling. The specific focus of this opportunity is on modeling the effects of chemicals on thyroid hormone homeostasis.

Under the guidance of a mentor, the research participant may develop novel approaches to use a large body of in vitro data related to chemical action on thyroid hormone homeostasis. The data indicates that a large number of chemicals can act on various thyroid-related molecular or biochemical targets, but the relevance for in vivo toxicology is unclear. The research participant may evaluate a series of current hypotheses regarding the in vitro to in vivo relevance of the data and will generate and test new hypotheses as appropriate. This research will require integration of in vitro screening data from a variety of assay technologies, in vivo physiology, and toxicokinetic data and models.

**Learning Objectives:** The research participant will be part of a collaborative team that will include biologists, bioinformaticians, and toxicologists. It is expected that the participant will be author or co-author on peer-reviewed publications and will present at local and national meetings. The research participant will be a member of a multi-disciplinary research team. The research participant will gain education and training in the general areas of computational biology, bioinformatics data science, mathematical modeling, data management, and computational toxicology in preparation for future career opportunities.

**Mentor(s):** The mentors for this opportunity are Richard Judson ([Judson.richard@epa.gov](mailto:Judson.richard@epa.gov)) and Katie Paul-Friedman ([paul-friedman.katie@epa.gov](mailto:paul-friedman.katie@epa.gov)). If you have questions about the nature of the research please contact the mentor(s).

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**Anticipated Appointment Start Date:** Winter 2021/2022. 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 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.

**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@ornl.gov](mailto:ORISE.EPA.ORD@ornl.gov) and include the reference code for this opportunity.








## Qualifications

The qualified candidate should have received a doctoral degree in one of the relevant fields, or be currently pursuing the degree. Degree must have been received within five years of the appointment start date.

Preferred skills:

- Developed and published bioinformatics or computational biology or computational toxicology applications, for instance the use of in vitro assay data or transcriptomics to model or predict in vivo phenotypes or points of departure
- Software development experience in one of Python, R, Java or C
- Strong written, oral and electronic communication skills
- Proficiency in the development of computational methods, including models in R or Python, and in the use of relational databases (MySQL or NoSQL solutions)

## Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Doctoral Degree received within the last 60 months or currently pursuing.
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (6 )
  - **Computer, Information, and Data Sciences** (4 )
  - **Engineering** (4 )
  - **Environmental and Marine Sciences** (2 )
  - **Life Health and Medical Sciences** (14 )
  - **Mathematics and Statistics** (4 )
  - **Other Non-Science & Engineering** (1 )
  - **Physics** (2 )
- **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).