

Opportunity Title: EPA Bioinformatician / Computational Biologist for

Neurotoxicology Fellowship

Opportunity Reference Code: EPA-ORD-CCTE-BCTD-2023-05

Organization U.S. Environmental Protection Agency (EPA)

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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 5/11/2023 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 with 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: The EPA Center for Computational Toxicology and Exposure (CCTE) is developing new computational tools and providing quantitative analysis for improving environmental risk assessments and regulatory decisions pertaining to chemical safety and sustainability. EPA scientists have been developing alternative approaches to more rapidly screen chemicals for the potential to cause developmental neurotoxicity. Currently, EPA is generating data from a battery of in vitro screening assays to evaluate chemical effects on critical processes in nervous system development.

This research participant will join a team of investigators that are using computational approaches to analyze and interpret medium and high-throughput screening data that evaluate neurodevelopmental processes, such as proliferation, neurite



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outgrowth, synaptogenesis, and neural network activity. These data were generated using assay technologies including high-content imaging and microelectrode arrays. The research participant will play a significant role in analyzing these data for dose-response modeling and developing novel interpretations of chemical bioactivity profiles. The research activities may include data analysis using R programming language, managing and accessing databases, integrating multiple data streams relevant to toxicology, developing computational models to predict toxicological outcomes of animal testing from in vitro assays, and drawing conclusions of toxicity potential.

Learning Objectives: The research participant will learn about toxicology, nervous system biology, electrophysiological recording techniques, zebrafish behavior, high-throughput assay development, data analysis and statistics. General participatory activities and opportunities for gained experience will include:

- Hands-on participation in experimental research and data interpretation
- Reading and interpreting relevant scientific literature
- 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.

Mentor(s): The mentor for this opportunity is Kelly Carstens (carstens.kelly@epa.gov). If you have questions about the nature of the research please contact the mentor(s).

Anticipated Appointment Start Date: January 31, 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 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

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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 bachelor's degree in one of the relevant disciplines (e.g. Bioinformatics, Statistics, Toxicology, Mathematics, Computational Biology, Chemistry). Degree must have been received within the past five years.

Preferred Skills:

- Course work in statistics, programming, mathematics is preferred. Additional course work in biology, neurobiology, pharmacology, toxicology or related fields is helpful.
- Experience with bioinformatic methods and computer programming (R, Python)
- Proficiency with Microsoft Office applications (i.e., Excel, PowerPoint, Word, Outlook).
- Strong written, oral, and electronic communication skills
- Knowledge of biology, neurobiology and/or pharmacology would enhance the experience but is not required.

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Bachelor's Degree received within the last 60 month(s).
- **Discipline(s):**
 - **Chemistry and Materials Sciences** (1 )
 - **Computer, Information, and Data Sciences** (3 )
 - **Life Health and Medical Sciences** (6 )
 - **Mathematics and Statistics** (11 )