Opportunity Title: EPA Internship for Establishing High-Throughput First Tier Screening Approaches for Developmental Neurotoxicity Hazard
Opportunity Reference Code: EPA-ORD-CCTE-BCTD-2023-13

Organization U.S. Environmental Protection Agency (EPA)

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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 7/7/2023 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), Biomolecular & Computational Toxicology Division (BCTD) located in Durham, North Carolina.

Research Project: The Center for Computational Toxicology and Exposure (CCTE) within the United States Environmental Protection Agency (US EPA) Office of Research and Development (ORD) focuses on developing the tools, approaches and data needed to modernize and accelerate the pace of chemical risk assessment. CCTE also aims to foster the incorporation of non-traditional toxicity testing strategies - referred to as New Approach Methods (NAMs) - into regulatory decision making.

Developmental neurotoxicity (DNT) is a high-priority adverse outcome for which New Approach Methods (NAMs) have been developed over the last decade. The US EPA DNT NAMs screening battery contains a number of high content imaging (HCI) based assays evaluating chemical effects on critical processes of nervous system development (e.g., neuroprogenitor cell proliferation, apoptosis, neurite outgrowth, neurite maturation and synaptogenesis). In addition, the US EPA is applying high-throughput profiling (HTP) approaches, such as transcriptomics and cell painting, to human-derived neural cell types in order to characterize molecular mechanisms that could be contributing to DNT.

The research participant will collaborate on assay development and

chemical screening studies in a high-throughput toxicology laboratory as well as analyzing and reporting experimental results.

The participant will collaborate with a multidisciplinary team to:

- Update existing imaging-based DNT NAMs assays to be higher-throughput using laboratory automation.
- Develop new image analysis and data analysis workflows for DNT NAMs and HTP assays.
- Conduct screening studies that characterize the biological activity of chemicals of interest to US EPA.

Learning Objectives: Participatory activities and opportunities for gained experience include:

- Culture human-derived neuroprogenitor and neuronal cell types.
- Culture human-derived cell types from various other tissues in the body.
- Conduct high-throughput chemical screening studies.
- Operate a variety of robotic laboratory instruments.
- Design high-content imaging workflows using automated fluorescence microscopy.
- Collect and analyze high-content imaging data.
- Active participation in project team, branch and division meetings.
- Prepare data summaries and research presentations.
- Co-authoring research publications

Mentor(s): The mentor for this opportunity is Joshua Harrill (harrill.joshua@epa.gov). If you have questions about the nature of the research, please contact the mentor(s).

Anticipated Appointment Start Date: April 15, 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 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 be currently pursuing or have received a bachelor's degree in one of the relevant disciplines (e.g. Biology, Cell Biology, Microbiology, Biochemistry, Genetics, Toxicology, Pharmacology, Chemistry, Environmental Science). Most recent degree must have been received within the past five years.

Preferred Skills:

- Preference given to candidates with experience in mammalian cell culture and cell-based or in vitro assays.
- Experience with the open source R statistical computing environment is highly desirable.
- Laboratory course work or work experience with general laboratory methods for biological research. May include any combination of experience with cell culture (aseptic technique), molecular biology techniques, assay development and/or microscopy.
- Course work related or work related experience with open source computer programming languages (R, Python).
- Proficiency with Microsoft Office applications (Excel, PowerPoint, Word, Outlook).
- Strong written, oral and electronic communication skills.

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Bachelor's Degree received within the last 60 months or currently pursuing.
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (1 👁)
  - **Computer, Information, and Data Sciences** (1 👁)
  - **Engineering** (1 👁)
  - **Environmental and Marine Sciences** (1 👁)
  - **Life Health and Medical Sciences** (48 👁)