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Opportunity Title: EPA Research Training Opportunity for Biologist in Neurotoxicity Assessment
Opportunity Reference Code: EPA-ORD-CCTE-BCTD-2023-09

Organization U.S. Environmental Protection Agency (EPA)

Reference Code EPA-ORD-CCTE-BCTD-2023-09

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 7/28/2023 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 EPA Center for Computational Toxicology and Exposure (CCTE) is developing new approach methodologies (NAMs) to provide faster and improved evaluation of potential toxicology hazards in order to better support environmental risk assessments and regulatory decisions pertaining to chemical safety and sustainability. These NAMs in many cases rely upon in vitro approaches and EPA scientists developed approaches to assess neurotoxicity hazard using neural networks grown on microelectrode arrays (MEAs). One challenge to using these approaches is that assessment of potential neurotoxicity hazard associated with volatile chemicals is difficult in vitro. However, other EPA scientists have been developing engineering solutions to this problem.

This research participant will collaborate with a team of investigators that are applying engineering solutions to allow testing of volatile compounds in MEAs. The the research participant will conduct experiments that evaluate the effects of volatile compounds on neural network function. The research participant will be integral in the design, execution and analysis of data from these experiments. This includes use of tissue culture skills to make and maintain primary cultures of neurons, laboratory skills to conduct and

troubleshoot experiments, and data analysis skills to summarize and interpret data. The research participant will be part of a multi-disciplinary team of scientists and engineers, and will be involved in team meetings and laboratory planning. The research participant may have opportunities to present this research at internal and external meetings as well as contribute to the publication of the results.

Learning Objectives: The research participant will learn about toxicology, nervous system biology, electrophysiological recording techniques, volatile compound effects on the nervous system, 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, branch and division
- 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 Tim Shafer (shafer.tim@epa.gov). If you have questions about the nature of the research, please contact the mentor(s).

Anticipated Appointment Start Date: Spring/Summer 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 have received a bachelor's degree in one of the relevant disciplines (e.g. Biology, Biochemistry, Chemistry), or be currently pursuing a master's or doctoral degree. Most recent degree must have been received within the past five years.

Preferred Skills:

- Course work in cellular biology, neurobiology, biochemistry or chemistry is preferred. Additional course work in pharmacology, toxicology, statistics, engineering or related fields is helpful.
- Experience with basic laboratory skills; tissue culture, asceptic technique,
- Proficiency with Microsoft Office applications (i.e., Excel, PowerPoint, Word, Outlook)
- Strong written, oral, and electronic communication skills
- Basic knowledge of biology, neurobiology and/or pharmacology.

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Bachelor's Degree, Master's Degree, or Doctoral Degree received within the last 60 months or currently pursuing.
- **Discipline(s):**
  - **Chemistry and Materials Sciences** (2 👁)
  - **Computer, Information, and Data Sciences** (3 👁)
  - **Life Health and Medical Sciences** (15 👁)
  - **Mathematics and Statistics** (2 👁)