

Opportunity Title: In Vitro and Computational Approaches to Assessing Chemical Effects on the Developing Nervous System

Opportunity Reference Code: EPA-ORD-NHEERL-ISTD-2019-08

Organization U.S. Environmental Protection Agency (EPA)

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How to Apply 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

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

If you have questions, send an email to EPArpp@ora.ou.org. Please include the reference code for this opportunity in your email.

Application Deadline 3/31/2020 3:00:00 PM Eastern Time Zone

Description *Applications will be reviewed on a rolling-basis.

A research opportunity is available at the Environmental Protection Agency (EPA), Office of Research and Development (ORD), National Health and Environmental Effects Research Laboratory (NHEERL), Integrated Systems Toxicology Division (ISTD) in Research Triangle Park, North Carolina.

The Integrated Systems Toxicology Division (ISTD) provides research to develop new tools and methods to facilitate the efficient testing of chemicals for important adverse effects including developmental neurotoxicity. There are tens of thousands of chemicals that are currently in commerce, with hundreds more introduced every year. Many of these chemicals find their way into the environment resulting in exposure to humans; yet only a small fraction of these compounds have been adequately assessed for potential risk. ISTD is developing alternative approaches including in vitro assays and small organisms like zebrafish to screen chemicals for the potential to cause developmental neurotoxicity (DNT). The focus is on developing medium and high-throughput assays that can be used to more rapidly detect chemicals that can alter the key events in neurodevelopment.


The objective of this research project is to use functional assays to screen and prioritize compounds for potential neurotoxicity and or developmental neurotoxicity of important sets of environmental contaminants. The research participant will join a team of investigators using a battery of in vitro assays including those for proliferation, neurite outgrowth and network formation to screen large numbers of chemicals for neurotoxicity. Techniques include high-content imaging and microelectrode array recordings in combination with cell viability assays. The participant will collaborate with EPA scientists to efficiently screen chemicals in these assays. Research activities may include electrophysiological recordings, tissue culture support and/or data analysis using R programming language.


The research participant will learn cell viability assays, cell culture techniques, nervous system biology, electrophysiological recording techniques, high-throughput assay development, data analysis and statistics.




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Anticipated Appointment Start Date: Spring/Summer 2020

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. The initial appointment is for one year, but may be renewed upon recommendation of EPA and is contingent on the availability of funds. The participant will receive a monthly stipend commensurate with educational level and experience. Proof of health insurance is required for participation in this program. The appointment is full-time at EPA in the Research Triangle Park, North Carolina, area. Participants do not become employees of EPA, DOE or the program administrator, and there are no employment-related benefits.



Completion of a successful background investigation by the Office of Personnel Management (OPM) is required for an applicant to be on-boarded at EPA. OPM can complete a background investigation only for individuals, including non-US Citizens, who have resided in the US for the past three years.

Qualifications The qualified candidate should have completed at least 3 years towards a bachelor's degree or have received a bachelor's degree in one of the relevant fields. Degree must have been received within five years of the appointment start date.

Preferred skills:

- Completion of laboratory based courses in biology, physiology, biochemistry, cell biology, statistics, programming and/or related coursework
- Experience in a research laboratory setting with tissue culture and/or requiring sterile technique
- Experience conducting independent, laboratory based research projects

Eligibility Requirements

- **Degree:** Bachelor's Degree.
- **Discipline(s):**
 - **Communications and Graphics Design** ([1](#) )
 - **Life Health and Medical Sciences** ([13](#) )

Affirmation I have completed at least 3 years towards a bachelor's degree or have received a bachelor's degree within the past 5 years.

AND

I certify that I have lived in the United States for the past three years.