Summer Research Internship Description

The World Health Organization defines environmental health “encompasses the assessment and control of those environmental factors that can potentially affect health. It is targeted towards preventing disease and creating health-supportive environments.” The field of environmental health is multi-disciplinary and requires scientific contributions from many fields to elucidate threats to human health.

The Superfund Research Program (SRP) is a network of university grants funded by the National Institute of Environmental Health Sciences (NIEHS) that are designed to seek solutions to the complex health and environmental issues associated with toxic chemicals found at the nation's hazardous waste sites. The research conducted by the SRP is a coordinated effort with the Environmental Protection Agency, which is the federal entity charged with cleaning up the worst hazardous waste sites in the country. The central goal of Duke’s NIEHS-funded Superfund Research Center (SRC) is to determine the mechanisms and consequences of the heightened vulnerability of developing organisms to toxicant effects, and effective strategies for remediation of contaminated sites.

Full-time summer research internship opportunities for undergraduate and Master’s students (Biology, Psychology, Neuroscience, Engineering, Environmental Sciences, and Science Communication) are offered in Center projects and cores:

Developmental aquatic toxicology- (PIs: Richard Di Giulio, David Hinton, and Joel Meyer) This project explores 1) the developmental effects of polycyclic aromatic hydrocarbons (PAHs) in the estuarine killifish (Fundulus heteroclitus), and 2) mitochondria dysfunction resulting from mitochondrial DNA damage, such as that from PAH exposures; opportunities for learning a number of molecular, biochemical, imaging and behavioral approaches are available.

Strategies for remediation- (PIs: Mark Wiesner, Claudia Gunsch and Helen Hsu-Kim) This project’s investigations center on biological and nanoparticle-based strategies for the remediation of sediments contaminated with PAHs, insecticides, and metals. Summer trainees will participate in the inquiry into interactive effects of mixtures of contaminants on biodegradation and microbial community dynamics in in situ and ex situ remediation scenarios.

Neural and Behavioral Toxicity Assessment (NBTA) Core- (PIs: Edward Levin and Theodore Slotkin) This core supports the Center’s projects by providing information concerning neurobehavioral consequences of toxicant exposures, including pesticides, flame retardants, and polycyclic aromatic hydrocarbons. We evaluate neurotoxicant actions using in vivo models using rats, zebrafish and killifish. Neurobehavioral functions investigated include sensorimotor function, learning, memory attention and emotional response. This core connects mechanistic studies to functional consequences.

Research Translation Core- (PIs: Charlotte Clark, Elizabeth Shapiro) This core delivers the Center’s research results to critical members of the scientific, governmental, and lay community, and has a new emphasis on community-engagement and community-involved research. Students affiliated with this core will support research translation projects and activities in order to effectively communicate research findings of the Center to scientists, policy-makers, and interested/affected community stakeholders. Candidates may work on research translation and community-engagement focused projects.

Positions are open to students currently enrolled in a four year postsecondary institution either as an undergraduate or master’s student. All summer trainees will be paid a competitive hourly wage and are
expected to work full-time and participate in training for a maximum of 35 hours per week (start and end dates are flexible between mid-May through mid-August). Students will have the opportunity to visit other Superfund Center labs located on Duke’s campus. In addition, students will participate in weekly research discussions, lab meetings, seminars, and workshops.

Applicants should email a (1) cover letter explaining their educational background and interest in research and specifying the project(s) and/or PIs of interest, and (2) resume addressed to:

Dr. Edward Levin, Director of Training
edlevin@duke.edu
**cc: Ms. Savannah Volkoff
savannah.volkoff@duke.edu

The deadline for application submission is February 5, 2016.

Questions regarding project descriptions, summer expectations or benefits should contact savannah.volkoff@duke.edu. Please do not directly contact individual PIs. More information about our research center can be found at https://sites.nicholas.duke.edu/superfund.