Job description:

The Johns Hopkins Center for Alternatives to Animal Testing is involved in several scientific projects implementing the vision of Toxicity Testing in the 21st Century as formulated by the National Research Council report in 2007. The center is leading the NIEHS-funded Human Toxome Project, which is a collaborative effort between CAAT, Georgetown University, Hamner Institute, Agilent and the US Environmental Protection Agency (EPA) to map pathways of toxicity. We are seeking a post-doctoral researcher to analyze and integrate multiple different data streams including, high-throughput screening data from the EPA ToxCast project (http://www.epa.gov/nct/toxcast).

Experience: The candidate will develop/use computational tools to identify and evaluate putative predictors of toxic effects due to endocrine disruption. Required skills include empirical analysis of using HTS, metabolomics and proteomics data using machine learning methods, and pathway analysis using in-house and publicly available tools. Demonstrated experience with computer programming using open-source tools (R and/or Python) is a must.

Posted Qualifications: Ph.D. in computational biology/toxicology, bioinformatics, physics, computer science, mathematics or related field. Have some knowledge of pathway analysis approaches and experience in applying machine learning techniques to noisy data sets. Highly motivated and a self-starter, with the ability to work efficiently with minimal supervision. Additional education may substitute for required experience and additional related experience may substitute for required education, to the extent permitted by the JHU equivalency formula.

Location: The position is located in Research Triangle Park, North Carolina at the National Center for Computational Toxicology of the US Environmental Protection Agency EPA and partly at the Johns Hopkins Center for Alternatives to Animal Testing, Baltimore MD.

Contact Information:

Dr. rer. hum. biol.
Andre Kleensang
Research Associate

Johns Hopkins Center for Alternatives to Animal Testing (CAAT)
Johns Hopkins University
Bloomberg School of Public Health
615 N. Wolfe St., W7032
Baltimore, MD, 21205
phone: +1 410 614 4971
fax: +1 410 614 2871

Project Summary:

The NIH Directors’ Transformative Research Project on "Mapping the Human Toxome by Systems Toxicology" at Johns Hopkins University:

The Common Fund’s NIH Director’s Transformative Research Projects Program (R01) is designed to support exceptionally innovative, high risk, original and/or unconventional research that has the potential to create or overturn fundamental scientific paradigms. The $6 million from
the National Institutes of Health (NIH) was granted in 2011 to the Johns Hopkins Center for Alternatives to Animal Testing (CAAT) and collaborators from academia, industry and regulators to pioneer potentially revolutionary new methods for toxicological testing to improve human health and reduce animal. Along with Thomas Hartung (Director of CAAT and chair for Evidence-based Toxicology), the other principal investigators include James Yager (Bloomberg School of Public Health, Johns Hopkins); David Dix, Acting Director of the National Center for Computational Toxicology at the U.S. Environmental Protection Agency (EPA); Michael Rosenberg, Director of Genomics Software Life Science Group at leading systems biology technology provider Agilent Technologies; Melvin Andersen, Associate Director of the Hamner Institute for Chemical Safety Sciences; Kim Boekelheide, Professor of Medical Sciences at Brown University; and Albert J. Fornace, Jr., Molecular Cancer Research Chair at Lombardi Comprehensive Cancer Center, Georgetown University Medical Center. As a first step to mapping the Human Toxome we have proposed comprehensively mapping the pathways of endocrine disruption, a perturbation of the hormonal system that can cause tumors, birth defects, and developmental disorders. The team will develop a common, community-accessible framework that will enable the toxicology community at large to comprehensively and cooperatively map the human toxome using integrated testing strategies that combine various “omics” data with computational models. The consortium will also begin the process of creating a public database of PoTs, enabling full access to researchers around the world.