12.12.2019

IUF
LEIBNIZ-INSTITUT FÜR UMWELT-MEDIZINISCHE FORSCHUNG

The IUF – Leibniz Research Institute for Environmental Medicine investigates the molecular mechanisms through which particles, radiation and environmental chemicals harm human health. The main working areas are environmentally induced aging of the pulmonary system and the skin as well as disturbances of the nervous and immune system. Through development of novel model systems the IUF contributes to the improvement of risk assessment and the identification of novel strategies for the prevention / therapy of environmentally induced health damage. The working group "Modern risk assessment and sphere biology" at the IUF - Leibniz Research Institute for Environmental Medicine in Düsseldorf is offering a

Post-Doc position as a bioinformatician (f/m/d).

The position is to be filled at IUF as soon as possible.

Clear evidence supports associations between endocrine disrupting chemical (EDC) exposure and impaired neurodevelopment. However, the current hazard assessment of EDCs does not address developmental neurotoxicity (DNT) endpoints. The EU-funded ENDpoiNTs project will combine state-of-the-art *in silico*, *in vitro, in vivo* and human omics tools with advanced biostatistics on human epidemiological and biomonitoring data to develop novel testing and screening tools to address ED-induced DNT. Thereby, ENDpoiNTs will develop predictive *in silico* tools using machine learning and develop and validate *in vitro* tools for chemical screening and regulatory testing to improved hazard and risk assessment of EDCs. In order to manage such high content data from multiple assays with multiple endpoints, structured data resources are an inevitable necessity. In collaboration with the bioinformatics department of the Ruhr University, Bochum (Prof. Axel Mosig) a database will be generated to organize and process the analysis endpoints, essential metadata and the raw data values with a corresponding data model. The bioinformatics processing will also involve epigenomic, transcriptomic and metabolomics data generated within the ENDpoiNTs project, which will be analyzed and integrated across experimental models, exposures, and endpoints to identify: a) signatures that can be used as "fingerprints" for exposures with a specific endocrine mode of action; b) signatures that can predict certain key events (KE) and adverse outcomes (AO) with relevance for DNT; c) panels of epigenomic, transcriptomic and metabolomic markers which can be used to predict EDC-induced DNT both *in vitro* and *in vivo*. Different established and novel methods to integrate high-dimensional data obtained within a species as well as between species will be used.

The successful applicant (f/m/d) holds a PhD degree in informatics, bioinformatics or a closely related field and should have a strong background in bioinformatics. On the technical side, profound knowledge of database systems and experience in managing large data sets is a must as well as proficiency in programming languages such as *R*, *Python* or *Java*. Experience with handling of *in vitro* datasets and knowledge in toxicity testing is a plus. You are a goal-oriented team player with excellent organizational and communication skills, including written and oral English.

We offer a very friendly and inspiring working atmosphere in an international team consisting of toxicologists, cell biologists, bioinformaticians, biostatisticians and physicians. The successful candidate (f/m/d) will be invited to join the institute's postdoc program, which, besides the scientific training, will impart multiple skills necessary for the development of an independent research career.

The position is limited until December 31, 2023. The weekly working time totals 39 hours and 50 minutes. Remuneration is given in accordance with the provisions of the collective agreement for the employees of the states (TV-L). Salary will be according to TV-L (E13).

Females are especially encouraged to apply, and in the case of equal qualification, handicapped persons will be given preference. The IUF is committed to family-friendly working conditions and equal gender policy.

Please submit your application by e-mail as one pdf-file combining relevant documents (letter of motivation, CV, university certificates, and contact of two referees) to: bewerbung@iuf-duesseldorf.de

Prof. Dr. Ellen Fritsche
IUF – Leibniz-Institut für umweltmedizinische Forschung gGmbH
Auf'm Hennekamp 50
40225 Düsseldorf

Application documents submitted by post are not returned. Documents for applicants not considered are destroyed appropriately once the procedure is complete.