



Postdoctoral Researcher in metabolomics to characterize the chemical Exposome

French School of Public Health of Rennes (France)

Contract: short term contract (18 months)

Closing date: 15 February 2017

The French School of Public Health, a member of the University Sorbonne-Paris Cité (<http://www.sorbonne-paris-cite.fr/>), seeks highly qualified candidates for a postdoctoral research position to work in the field of human Exposome. The Exposome represents all environmental exposures from conception onwards and includes broad categories of exposure, e.g. pollutants, gut microflora, diet, lifestyle factors, and encompasses the wider social, economic and psychological influences. This new concept has recently emerged to study the increasing prevalence of human non communicable diseases (e.g. cancer, metabolic disorders, obesity, reproductive disorders), major causes of mortality worldwide. The Chemical Exposome represents a key fraction of the whole Exposome and includes components of both external (e.g. environmental pollutants and drugs) and internal (e.g. endogenous metabolites) exposures. Untargeted profiling analytical methods based on liquid chromatography high resolution mass spectrometry (LC-HRMS) combined with chemometric pattern recognition offer exciting perspective to characterize the chemical Exposome. These untargeted techniques allow the identification without *a priori* of contaminant mixtures accumulating in humans and simultaneously investigate for any associated disruption of endogenous metabolite profiles. However, most of the current metabolite profiling methods are not sensitive enough to detect trace levels of contaminants, endocrine or other signaling compounds present in tissues or plasma extracts. The main objective of the postdoc will be to develop highly sensitive and robust untargeted analytical methods based on innovative sample preparation and UHPLC-ESI-TOFMS methods to profile many biological matrices (e.g., placenta and fetal tissues, blood plasma, urine).

We seek a highly motivated and enthusiastic candidate with a PhD in the area of metabolomics, environmental chemistry, or analytical chemistry with experience and demonstrated success of working independently and as part of a team in analytical or academic research facility. The successful applicant will work at the Laboratory for Research and Study in Environment and Health (LERES), a major analytical platform fully integrated within IRSET-Inserm U1085. Essential skills for this job include experience in biological sample preparation techniques, strong practical expertise in liquid chromatographic methods, LC-HRMS based metabolomics and experience in metabolite deconvolution software and Mass Spectral Database.

The successful applicant will also have to develop and implement a data processing pipeline including experimental design, pre-processing (bioinformatics), and statistical analysis of large scale LC-MS based metabolomics studies. Experience with computer programming (e.g., R, Matlab) and multivariate statistics (e.g., SIMCA) would be highly advantageous. The position will include collaborations with epidemiologists, toxicologists and developmental biologist within the Research Institute for Environmental and Occupational Health (Irset-Inserm UMR 1085). Evidence of peer-reviewed publications as well as effective communication skills, both oral and written is required.

The successful candidate is expected to start in the second term of 2017. The closing date for applications is 15 February 2017. Applicants are invited to email their CV including the list of publications, an application letter with a summary of previous research to Dr Arthur David (arthur.david@ehesp.fr). Interested applicants can email Dr Arthur David for further information.