Postdoctoral position in HRMS-based exposomics and breast cancer in the Department of Environmental Health Sciences (LERES)

Contract: short-term contract (18 months)
Closing date: 1st June 2022

The Environment and Health Research Laboratory (LERES) is the analytical platform of the French School of Public Health (EHESP, Rennes Frances) and part of the Department of Environmental Health Sciences. It is one of the two analytical platforms of the Research Institute for Environmental and Occupational Health (https://www.irset.org/en) (Irset-Inserm UMR 1085), one of Europe's leading exposomics research centres performing cutting edge research in genomics, transcriptomics, analytical chemistry, toxicology, exposure science, epidemiology and risk assessment. The LERES is also a platform of the National Infrastructure France Exposome. The platform is fully equipped with cutting edge mass spectrometry instruments (MS/MS and HRMS) and has extensive experience in non-targeted analysis of biological samples based on high-resolution mass spectrometry (HRMS) and using bioinformatics tools to annotate and interpret chemical exposome data

Description of the position

This position is part of a large project funded by the Cancéropôle Grand Ouest, the Western France cancer center, in collaboration with the LABERCA, the Institut de Cancérologie de l'Ouest (ICO) and the UMR Inserm 1069 (Nutrition, Croissance et Cancer), aiming at mapping the chemical, nutritional and social human exposome and evaluate associations between the exposome (E) and breast cancer (BC) risk and aggressiveness indicators. We will leverage three cohorts of BC: two longitudinal cohorts established by the ICO in Nantes and one retrospective cohort in Tours (CHU Tours). All cohorts have archived biological samples and collected extensive epidemiological and clinical data, and have archived breast tissue samples and/or blood samples.

We are offering an exciting postdoctoral position focused on expanding the characterization of the chemical exposome by identifying novel chemical exposures in adult women with or without BC and provide preliminary data on how these novel exposures affect BC incidence and BC aggressiveness. The candidate will perform sample preparation and non-targeted analysis of adipose tissue and blood samples using LC-HRMS methods in order to capture a wide range of exogenous organic chemicals. The candidate will then apply state-of-the-art bio-informatics methods for the annotation of complex LC-HRMS data, and conduct statistical analysis (i.e. exposome-wide association studies) to explore the relationships between chemical exposures and BC incidence. The candidate will have the opportunity to work in close collaboration with internationally recognized experts in analytical chemistry, exposomics, lipidomics, nutrition and social sciences.

Qualifications

We seek a highly motivated and enthusiastic candidate with a PhD in the area of HRMS-based exposomics, metabolomics, or analytical chemistry with experience and demonstrated success of working independently and as part of a team in analytical or academic research facility. Essential skills

for this position include experience in biological sample preparation techniques, strong practical expertise in liquid chromatography methods, LC-HRMS based metabolomics and experience in metabolomics software (e.g., XCMS, MS-DIAL) for data processing, annotation and statistical analysis.

The successful candidate is expected to start on September 2022. The deadline for applications is 1st June 2022. Please submit a single PDF containing your current curriculum vitae (including list of publications), contact information for three references, and a cover letter describing your interest in the position and how your qualifications meet the criteria outlined above to Dr Vincent Bessonneau (vincent.bessonneau@ehesp.fr). Interested applicants can email Dr Vincent Bessonneau for further information.