

Closing Date 4th January : Postdoctoral Researcher position in HRMS-based exposomics at the Research Institute for Environmental and Occupational Health



The Environment and Health Research Laboratory (Leres) is the analytical platform of the French School of Public Health (EHESP, Rennes France). 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, statistics, toxicology, exposure science, epidemiology and risk assessment. The Leres facility is fully equipped with cutting edge mass spectrometry instruments (MS/MS and HRMS) to assess human exposure to inorganic and organic mixtures.

Description of the position

This position is part of a project funded by the French national institute of health and medical research (Inserm) and the Columbia Mailman School of Public Health.

The project aims to improve and harmonize methodologies based on High Resolution Mass Spectrometry (HRMS)-based for exposomics research. The technological advancement of HRMS combined with the development of omics-based data treatment methods has set the stage for the establishment of a modern exposome research paradigm. However, some components of the analytical workflows are still immature, it is therefore essential to break down these methodological bottlenecks. To this aim, international collaborations between laboratories are needed to harmonize the methodologies and provide robust and reliable data for risks assessment.

We are offering an exciting postdoctoral position at the Leres facility, which has already developed analytical methods based on UHPLC-ESI-QTOF to detect a wide range of low levels of chemicals in complex biological matrices, and an in-house automatized pre-annotation workflow to speed-up the annotation of complex HRMS datasets. The selected candidate will work in close collaboration between the Leres and the Columbia Mailman School of Public Health to i) develop complex analytical workflow using different HRMS platforms to extend the coverage of the internal chemical exposome; ii) harmonize analytical pipelines between labs; iii) apply these new strategies to selected cohort and clinical studies. The candidate will then apply state-of-the-art bio-informatics methods and suspect screening in order to annotate the complex HRMS datasets.

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 job include experience in biological sample preparation techniques, strong practical expertise in liquid chromatographic methods, LC-HRMS based metabolomics and experience in metabolomics software (e.g., XCMS, MS-DIAL) for data pre-treatment, statistical analyses and marker annotation.

The position will include close collaborations with US laboratories at the Columbia Mailman School of Public Health (Gary Miller) and Mt Sinai (Douglas Walker).

The successful candidate is expected to start during the first trimester 2021. The closing date for applications is 4th January 2021. Please submit a single PDF containing your current curriculum vitae (including list of publications), contact

information for three professional references, and a cover letter describing your interest in the position and how your qualifications meet the criteria outlined above to Dr Arthur David (arthur.david@ehesp.fr). Interested applicants can email Dr Arthur David for further information.