Post-doctoral positions offer

3 Postdoctoral Researcher positions in HRMS-based exposomics are offered at:

- LERES, EHESP, Rennes, France (https://leres.ehesp.fr/)
- LABERCA, Oniris, INRAE, Nantes, France (www.laberca.org)
- TOXALIM, INRAE, Toulouse, France (www6.toulouse.inrae.fr/toxalim)

Contract duration: 18 months
Contract start: expected 1st March 2021
Closing date for applications: 15th January 2021

Description of the positions:

Three French leading laboratories with strong historical background and internationally recognized expertise in the exposomics research area (performing cutting edge research in analytical chemistry, statistics, exposure science, epidemiology, toxicology and risk assessment) gather their skills in an ambitious research program (Screenpest) focused on the development and implementation of a new large-scale suspect and non-targeted screening approach for extensive characterization of human exposure to pesticides.

Three equivalent post-doctoral positions are opened in the frame of the Screenpest program that will be based in Nantes, Rennes and Toulouse respectively, through complementary but integrated workplans. The three facilities are fully equipped with complementary cutting-edge mass spectrometry instruments (MS/MS and HRMS) to assess human exposure to organic mixtures.

The Screenpest project aims to (i) propose a methodology for the large-scale characterization of human internal exposure to pesticides, based on an innovative approach of “suspect screening” by high-resolution mass spectrometry and (ii) generate new exposure data and test possible associations between the exposure levels and certain health parameters from cohort studies.

With regard to the first objective, i.e., to cover the widest part possible of the chemical exposome, this will imply on one hand the development, improvement and harmonization of sample preparation methods for human urine, complementary HRMS-based methods with GC and LC in both HILIC and C18 modes, and on the other hand the elaboration of bioinfomatic tools for the treatment of the generated data with use of a dedicated spectral database efficient annotation.

The second objective will be to document the relevance of this holistic approach through two cohort studies allowing (i) to test the method developed on human biological samples, (ii) to generate new exposure data, and (iii) to test associations between the exposure levels observed and certain health parameters available in the studies concerned.

In this context, the selected candidates will work in close collaboration between each other in the three laboratories for the implementation of harmonized state-of-the-art analytical workflows and bio-informatics methods, as well as the application of these strategies to selected cohort studies.

Required profiles:

Three positions are open with equivalent profiles.
We seek highly motivated candidates with a strong background (PhD) and expertise in analytical chemistry, HRMS-based analytical approaches, exposomics, or metabolomics. This includes demonstrated experience in biological sample preparation, strong practical expertise in chromatographic methods, LC-HRMS based metabolomics as well as knowledge of metabolomics software (e.g., XCMS, MS-DIAL). Demonstrated skills in bioinformatics tools development for high-resolution mass spectrometric data treatment and marker annotation will be highly appreciated.

The position will include close collaborations between three laboratories, and successful candidate is expected to closely interact with partner laboratories and the network task force constituted within the consortium of the project.

Contact and application:

Dr Laurent Debrauwer (laurent.debrauwer@inrae.fr).
Send your CV (including list of publications), contact information for 3 professional references, and a cover letter describing your motivations for the position.