

POSTDOCTORAL POSITION

Pharmaceuticals have been recognised as an emerging class of environmental contaminants and their fate, occurrence and physicochemical behaviour in the aquatic environment have been extensively studied and reviewed. The project DIADeM (Development of an integrated approach to evaluate the Meuse's water quality) funded in the INTERREG FWVL program, aims to evaluate the ecotoxicological consequences of incomplete removal of pharmaceuticals or their metabolites in wastewater treatment plants (WWTP) using predictive biological responses. Today, early-warning and sensitive diagnosis tools with an ecological relevance seem to be promising for the early assessment of the ecosystem degradation resulting from damaging contaminants. Among these responses, called "biomarkers", the most appropriate ones seem to be suborganismal responses revealing the health status of various organisms, and more particularly those related to metabolism. In order to have a holistic view of an organism's health, metabolomics approaches measuring metabolites and then highlights the dynamic nature of the metabolome appears as very promising strategy.

The postdoctoral position proposed in the unit SEBIO aims to develop metabolomic approach on a freshwater mussel, *Dreissena polymorpha* for discovering biomarker profiles of toxicant exposure and disease, and for identifying the metabolic pathways involved in such processes in this species. Therefore, zebra mussel constitutes a valuable bioindicator species, largely used as freshwater biomonitoring tool relative to chemical contamination of water. During *in situ* experiments, in order to avoid the biological noise which could mask the metabolic differences between healthy and stressed animals, as well as the more subtle differences among closely related stressful environmental states (different sites to compare), an active approach based on the transplantation of "standardized" organisms on the different studied sites is proposed.

Qualifications required:

- A PhD on animal's metabolomic
- Working knowledge in NMR
- Competences in statistical analyses (PCA/multivariate analyses, PLS), bioinformatic tools and databases for data analysis/treatment/standardization
- Experience in writing publications

This is a full-time position, starting september-october 2017 (or as soon as possible thereafter). The position cannot be split and is available for 18 months. The salary is 1845€ net monthly.

Please send your applications containing 1. Your CV, 2. Contact information for two references, 3. A cover letter explaining interest in the position and career goals, no later than July 21 by e-mail in a single pdf-file to Alain Geffard (alain.geffard@univ-reims.fr) and Jean-Marc Nuzillard (jm.nuzillard@univ-reims.fr).