Post-doctoral position in Environmental Chemistry

Distribution and transfers of legacy and emerging contaminants in the environment and food web of the West Gironde mud patch

The West Gironde mud patch is the marine collector of ca. 50% of the Gironde solid discharge. As such, it forms the major receptacle of the Gironde fluvial-estuarine system in the NE Atlantic and constitute a key element of the coupling between the functioning of continental and coastal marine systems, which results in a potential sensitivity to natural (e.g. sedimentary inputs) and anthropogenic (e.g. contaminants) disturbances, and to climatic change (i.e., general trend toward the decrease in river flow and the increase in marine hydrodynamics). In addition, it is a fishing area for several high cost commercial species (e.g. common sole and Dublin Bay prawn) and it is also known as one of the major breeding area of the common sole in the Bay of Biscay.

In this context, the objective of this work is to contribute to the study of the contamination of the West Gironde mud patch by different families of legacy or emerging organic micropollutants. The aim will be to characterize the chemical quality of sediments and its determinants, as well as the transfer of these contaminants towards and within the food web of the common sole *Solea solea*. More specifically, the objectives of this work will be as follows:

- Study of the export dynamics of organic micropollutants associated with suspended solids at the mouth of the Gironde estuary

- Characterization of the spatial distribution of the contamination of surface sediments of the West Gironde mud patch

- Reconstruction of the sediment contamination history (sedimentary archives)

- Estimation of contaminant transfer to and within the common sole food web

This work will be largely based on two oceanographic field campaigns (spring/fall 2020) that will collect sediments, benthos and sole individuals at different stages of their breeding cycle. The postdoctoral fellow will be responsible for participating in field campaigns, organizing the collection and management of biological and sediment samples, carrying out analyses (polycyclic aromatic hydrocarbons and their metabolites, organohalogens including PCB, PBDE and chloroparaffins), and managing the exploitation of the results. This work will be carried out in the LPTC research group of the EPOC laboratory (http://www.epoc.u-bordeaux.fr/index.php?lang=fr&page=eq_lptc1) and analyses will be carried out within the Platine platform of this research unit, using state-of-the-art techniques for trace organic analysis (GC-MS/MS, GC-Q/ToF, LC-MS/MS...). In addition, a collaboration with IFREMER (LBCM) will be implemented (trace metals analysis). This work will be undertaken in an interdisciplinary context at the interface with ecotoxicology, trophic ecology and geochemistry, within the MAGMA project co-funded by LabEx COTE, the New Aquitaine region as well as AFB (https://cote.labex.u-bordeaux.fr/Projet/Volet-Recherche/Projets-bottom-up/MAGMA-i7079.html).

Expected skills:

The candidate should ideally have experience in Analytical Chemistry or Environmental Chemistry. In addition, he or she must demonstrate autonomy but also motivation for teamwork, in the field (sampling campaigns) and in the laboratory (data acquisition and exploitation), and a taste for interdisciplinarity.

Required documents:

- A detailed CV with a list of publications

- A cover letter detailing the candidate's experience relevant to the position and career goals;

- Contact information for three references

Applications must be sent before 20 January 2020 by e-mail (contract start date: 01/03/2020, duration: 2 years).

Contact :   Pierre Labadie, pierre.labadie@u-bordeaux.fr / + 33 (0)5 40 00 87 33

Hélène Budzinski, helene.budzinski@u-bordeaux.fr / + 33 (0)5 40 00 69 98