

## Candidate for PhD grant on behaviour and toxicogenomics

We are seeking a pre-doctoral student to work in the area of behaviour and toxicogenomics. One of the goals of our current research is to study the mechanisms that regulated neuro-behavioral responses and the effects of Endocrine Disrupting Chemicals (EDCs) in the aquatic and model organism *Daphnia magna* at different molecular levels using Systems Biology approaches. About 80% of the molecular targets of toxic chemicals are conserved in humans and *Daphnia* and the former species is not subject to ethical experimental animal regulations. This work will allow us to better understand the mode of action of neuroactive and EDCs, assessing the risks induced in both the environment and human health.

The successful candidate will be involved in ongoing research projects that will develop an array of behavioural, molecular and cell biology tools, including different techniques for gene and protein expression analysis (qPCR, RNA-sequencing, immunohistochemistry and metabolomics). The project is conducted in collaboration with The Robotics and Informatic Institute, Technical Politechnique University (<http://www.iri.upc.edu/index.php>). The student will work with the model crustacean *Daphnia magna* as a main model although other aquatics species such as zebrafish, crayfish and amphipods may be considered. The ultimate goal will be to develop a set of tools that will allow to integrate “omic” analysis at several levels (transcriptomics and metabolomics). This will allow to discover molecular biomarkers that can be used to identify key events within cells and evaluate the effects of the exposure to pollutants on behavioural and other individual level toxicological responses (mortality, reproductive success, growth), focusing on the prediction of phenotypic traits and outcomes.

The project will be carried out at Institute of Environmental Assessment and Water Research (IDAEA) (<http://www.idaea.csic.es/index.php?lang=en>) a reference CSIC institute in Barcelona devoted to study the natural and anthropogenic changes occurring in the ecosystems due to environmental pollution. It offers a nice multidisciplinary environment with students of several nationalities working in different research areas of Physiology, Biochemistry, Cell Biology, Endocrinology and Chemistry in which Biologists, Ecotoxicologists and Chemists team up in the study of pollutant-related issues, and their interaction with wildlife welfare.

**REQUIREMENTS:** Master degree on science (or equivalent) and outstanding academic records (high scores and an a degree compatible with Bologna-EU Universities). A background in molecular and cell biology, systems biology and bioinformatics will be considered (knowledge in Bioconductor/R environment and matlab software will be an asset).

**CONDITIONS:** The candidate will be presented to competitive calls, such as pre-doctoral contracts AGAUR-FI-2019/2020 (ajuts per a la contractació de Personal Investigador Novell, Generalitatde Catalunya), FPI or FPU (Foreign students that are eligible to apply to this call or foreignfunding will also be considered).

**APPLICATIONS:** Applications should include a letter of motivation and interests, complete CV and academic record. Enquiries and applications should be sent to Dr. Carlos Barata ([cbmqam@cid.csic.es](mailto:cbmqam@cid.csic.es)) indicating PRE-DOC in the subject of the email. **DEADLINE: September-October 31th 2019.**