

## Postdoctoral Fellow Contract (2 years) on Environmental Epigenetics and Ecotoxicology

### The role

We are seeking a post-doctorate to work in the area of Environmental Epigenetics and Ecotoxicology. One of the goals of our current research is to study the effects of pollutants in aquatic organisms at different molecular levels using Systems Biology approaches. Gene-environment interactions, environmental epigenetics, and regulation of gene expression is a complex matter that requires novel integrative break-through approaches to overcome actual challenges. Therefore, our team combines ground-breaking methodologies (transcriptomics with spatial resolution, transgenic fluorescent zebrafish lines, single-cell multi-omics) with more standardized methodologies (whole genome bisulfite sequencing and RNA-sequencing, etc) with the final aim to better understand the mode of action of pollutants and assess environmental stress and risks.

The successful candidate will join an international research team working with cutting-edge technologies to study the interplay between the epigenome and the transcriptome in response to exposure to environmental pollutants. The researcher will develop an independent research project focussed on the discovery of epigenetic makers of exposure to pollutants by incorporating integrative multi-omics assays using the zebrafish model. The position will be funded by EPIBOOST, an EU project that aims to elucidate the epigenetic responses of aquatic organisms to pollution. This project is a collaborative effort between the University of Ghent (Belgium), the University of Aveiro (Portugal) and two research institutes from the Spanish National Research Council CSIC (Spain), the Institute of Environmental Assessment and Water Research (IDAEA-CSIC) and the Institute of Marine Sciences (ICM-CSIC). Additionally, the researcher will collaborate in other ongoing research projects related to the study of Endocrine Disruptors using single-cell multi-omics and spatially resolved transcriptomics.

### What do we look for?

- **Qualifications**

PhD in Biology, Environmental Sciences, Marine Sciences, Bioinformatics or similar

- **Professional experience**

Experience in high-throughput sequencing analyses

Knowledge working with Linux environments

Experience in zebrafish husbandry or fish experimentation is desired, but not required

- **Competences**

Technical skills:

- Strong programming skills in R and scripting language
- DNA methylation analysis skills are required. Additional skills for Hi-C, Chip-seq, motif enrichment or similar will be considered
- Data analysis and machine learning methods are welcome
- Wet-lab related skills (zebrafish husbandry, nucleic acid extractions, library preparation, etc...) will be an asset.

Interpersonal skills:

- High motivation, initiative and independence
- Capable to work in collaboration with the team members
- Perform work in a positive attitude
- Scientific communication skills, excellent written skills, effective public speaking and social skills

Language skills:

- High level of English

## Working conditions

- **Contract duration: Full-time contract** (37.5 hours/week) **will be covered for a minimum of 2 years**. The candidate will be expected to apply for grants before/during the duration of the contract.
- Target start date: 1 October 2022 (desirable but negotiable)

## The group

The project will be carried out under the mentoring of Dr. Laia Navarro-Martín from the **Environmental Toxicology group at IDAEA**. Her group aims to elucidate the modes of action of pollutants and the discovery of biomarkers of exposure for a better risk assessment in environmental health. In the present, her group is performing multi-omic (epigenomics, transcriptomics, lipidomics and metabolomics) and single-cell approaches to study the effect of pollutants in fish. She provides a highly stimulating working environment with state-of-art infrastructures within IDAEA and access to external services. During the postdoctoral stay attendance to specific training courses will be provided. She is committed to a work-life balance and reconciliation of work and family life providing flexible working hours.

## The institute

The **Institute of Environmental Assessment and Water Research (IDAEA)** is an environmental science institute devoted to the study of the human footprint on the biosphere. Much of the research work at this institute is centred on two of the great environmental challenges of our time: cleanliness and availability of water and quality of air.

Founded in 2008 as a member of the **Spanish National Research Council (CSIC)**, the Institute brings together a wide range of expertise in environmental science. It is organized under two Departments (Environmental Chemistry and Geosciences), established with a strong record of publication in top scientific journals, leading international projects, membership on international committees, and adopting a high-profile contribution to the identification and remediation of environmental problems.

IDAEA has demonstrated strengths in the analysis of organic pollutants and their impact on ecosystems, the study and management of water resources, the development of multivariate resolution algorithms in chemometrics, and in the study of inhalable particulate matter and toxic gases.

IDAEA has been recently awarded with the distinctive **Centre of Excellence “Severo Ochoa”** (2020-2023), distinction that indicates the high-quality scientific leadership and global impact of the work developed at the centre.

We offer a diverse and inclusive environment where no discrimination against disability, gender, nationality, religion or sexual orientation will occur during the selection process.

## How to apply?

Those interested may email their **CV** and **motivation letter** to **Laia Navarro-Martín** at [laia.navarro@idaea.csic](mailto:laia.navarro@idaea.csic), adding “Postdoc in Epigenetics” to the email subject.

**Deadline: 15<sup>th</sup> August** (but open until position is filled)