Network for Cross-disciplinary assessment of Endocrine Disrupting compounds
https://www.nexed.eu

Doctoral candidate 13:

Central integration of peripheral endocrine signals

Host Institution	CNRS, France
PhD enrolment	CNRS, France
Lead Supervisor 1	Prof. Jean-Baptiste FINI, Muséum National d'Histoire Naturelle
Lead Supervisor 2	Dr Sakina MHAOUTY-KODJA, Institut Biologie Paris Seine
Subject area	hypothalamus, cell culture, transcriptomics

About this vacancy

NeXED is a Marie Skłodowska-Curie Actions (MSCA) Doctoral Network, funded by the European Union. NeXED will in total recruit 15 enthusiastic, talented and driven Doctoral Candidates (DCs) who are highly motivated to be part of a new generation of cross-disciplinary toxicologists specialised in using harmonised approaches in a One Health framework to develop and support the implementation of innovations in the field of endocrine disruptor assessment. This vacancy is one of those 15 opportunities. Make sure to also read the general eligibility and selection criteria!

Host institution and research group

The Centre national de la recherche scientifique (CNRS) is a public research organization (Établissement public à caractère scientifique et technologique) under the authority of the French Ministry of Higher Education, Research and Innovation. It produces knowledge and makes it available to society.

With over 33,000 staff and a nationwide presence (1,200 laboratories hosting 114,000 people), mainly in association with its higher education and research establishments, the CNRS is active in all fields of knowledge (biological sciences, chemistry, ecology and the environment, human and social sciences, engineering and systems sciences, mathematical sciences and their interactions, physics, information sciences and their interactions, nuclear and particle physics, sciences of the Universe). In close interaction with the socio-economic world, CNRS has nearly 150 public/private research structures (openlab, joint laboratories, etc.)

This DC position will be mainly hosted by the Mixed Unit of Research UMR 8263 [Development, Adaptation & Aging] (https://www.ibps.sorbonne-universite.fr/fr/Recherche/umr-developpement-adaptation-et-vieillissement), which is part of the Institut de Biologie Paris-Seine (IBPS). In particular, the DC will perform his/her PhD in the team "Neuroplasticity of Reproductive Behaviors" (https://www.ibps.sorbonne-universite.fr/en/research/development-adaptations-and-aging/neuroplasticity-of-reproductive-behaviors).

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This DC will also be hosted for aquatic experiments at the UMR 7221 (50 meters from the IBPS) at the Museum of National of Natural research (https://phyma.mnhn.fr/en/directory/jean-baptiste-fini-6836)

The two laboratories are located in the heart of Paris (Quai St-Bernard) along the Seine.

The research project

The endocrine system is extremely well preserved among vertebrates. Among the most well-preserved elements are the glands (thyroid, gonads, adrenals, etc.) and the integration of signals from most of these glands occurs in the hypothalamus and pituitary. Assessment of EDCs relies mainly on their action and consequences at the peripheral gland level. However, investigation of cellular and molecular modifications at the hypothalamic/pituitary level, and the associated neuroendocrine and behavioural consequences, should be studied in priority. Analysis of the hypothalamus and pituitary at transcriptomic level will allow the identification of key regulators potentially conserved among vertebrates. The obtained data will allow proposing relevant biomarkers for EDC exposure that are common to several endocrine systems, thus potential MIEs of KEs that can be used in AOPs.

The main objective of this project is to determine the cellular and molecular signature at the hypothalamic level for the neuroendocrine and behavioural effects of developmental exposure to Endocrine disrupting Compounds (EDCs) mixture in hypothalamic neurons derived from human iPSCs, and in vivo mouse and aquatic models. The newly identified biomarkers will be compared across species. This translational approach aims to consider the hypothalamus/pituitary, which are still underestimated levels of action, as the integrative centre that connects several neuroendocrine systems and endpoints.

A cross-species comparison will be also performed between species used for human health and the environment. Biomarkers would also be used to refine the existing test guidelines to integrate the hypothalamic/pituitary level in risk assessment.

Your tasks

You will

- Enrol in the doctoral school ED158 ‘Brain, cognition and behaviour’ at Sorbonne Université and comply with the doctoral training requirements. Please visit https://ed3c.sorbonne-universite.fr/en/brain-cognition-behavior-doctoral-school-ed3c
- Write **project reports** on a regular basis, and **publish** high-quality research results related to the research project in international conference proceedings and peer-reviewed scientific journals

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- **Participate actively** in the NeXED training, dissemination, communication and exploitation activities
- Work actively on the preparation and defence of a **doctoral thesis** in the field of Neuroendocrinology and endocrine disruption

Secondments

The following research stays are planned:

- Interdisciplinary secondment: Histopathology and omics analysis with Lisa Baumann (1.5 month) at VU (Netherlands)
- Interdisciplinary secondment: Learn how to build cross-species AOP networks with Dries Knapen (1 month) at Universiteit Antwerpen (Belgium)
- Intersectoral secondment: Learn Human Neurosphere technique (1 month) with Ellen Fritsche at DNTOX (Germany)

What we offer

- The selected candidate will be employed full-time by CNRS on the MSCA-DN project for a period of **36 months**
- Doctoral candidates are offered an employment contract including social security coverage, with a **competitive remuneration** based on the MSCA allowances in line with the MSCA WP 2023-2025
- The gross monthly amount at CNRS corresponds to the amount for doctoral scholarship holders
- Funding is available for technical and personal skills training and participation in international research events
- The **expected start date** is around October 1st 2025. Last-year master students expected to graduate by this time are encouraged to already apply
- Read more about working at CNRS, IBPS, MNHN

Specific requirements

In addition to the general eligibility and selection criteria of the NeXED Doctoral Network,

All applications must be sent to sakina.mhaouty-kodja@upmc.fr; fini@mnhn.fr

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Application procedure

For your application to be valid, it must both be submitted through https://emploi.cnrs.fr/Offres.aspx, and through the NeXED job application platform (https://www.uantwerpen.be/en/projects/nexed/job-openings/apply/).

Deadline for applications: April 21, 2025, 23:59 CET. More information about the application procedure for NeXED PhD positions can be found here.

Contact

For additional information about this vacancy, please contact sakina.mhaouty-kodja@upmc.fr; fini@mnhn.fr.

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