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

Doctoral candidate 9:

Exposomics and metabolomics in zebrafish embryos for complex exposure scenarios

Host Institution	University of Antwerp, Belgium
PhD enrolment	University of Antwerp, Belgium
Lead Supervisor	Prof. Dr. Adrian Covaci, Toxicological Centre
Subject area	Exposomics, Metabolomics, Chemical Exposure, Analytical Chemistry

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 University of Antwerp (UA) is a dynamic, forward-thinking, European university. We offer an innovative academic education to more than 20,000 students, conduct pioneering scientific research and play an important service-providing role in society. We are one of the largest, most international, and most innovative employers in the region. With more than 6,000 employees from 100 different countries, we are helping to build tomorrow's world every day. Through top scientific research, we push back boundaries and set a course for the future – a future that you can help to shape.

This DC position will be hosted by the **Toxicological Centre** (TC, UA), within the Faculty of Pharmaceutical, Biomedical and Veterinary Sciences. The main competences of the TC relate to various aspects of the **exposomics**, such as human and environmental exposure risk assessment and monitoring, and **metabolomics**, where particular attention is given to the development and optimization of (bio)analytical comprehensive workflows for polar metabolites and lipids. We use MS-based metabolomics to elucidate toxicity mechanisms and pathways by identifying changes in cellular/tissue metabolites after exposure to toxicants and stress factors and providing essential input in the characterization of toxicity and exposure pathways of humans and other organisms to chemicals.

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The research project

The key **objectives** of this project are to develop comprehensive analytical strategies for the characterization of the chemical exposome and metabolome of zebrafish in environmentally and human relevant complex scenarios and to apply these strategies to two case studies involving exposure to complex mixtures.

Unified analytical workflows and strategies based on **suspect and non-target screening and high resolution mass spectrometry** will be developed for the simultaneous characterisation of the chemical exposome and metabolome of zebrafish embryos. Alterations in the metabolome will be linked to the chemical exposome in zebrafish exposed to mixtures relevant for environmental and human exposure.

Your tasks

You will

- Enrol in the Antwerp Doctoral School and comply with the doctoral training requirements
- 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
- **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 exposomics and metabolomics

Secondments

The following research stays are planned:

- Intersectoral secondment: Michael Rodamer, 2 weeks: Newest developments on HRMS instruments at Agilent Technologies, Germany
- Interdisciplinary secondment: Pim Leonards, 2 months: Collaboration on zebrafish metabolomics at Vrije Universiteit Amsterdam, The Netherlands
- Interdisciplinary secondment: David Du Pasquier, 1 month: Exposure of amphibian and cell-based models to study mixtures of chemicals at Watchfrog, France

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What we offer

- The selected candidate will be employed full-time by the University of Antwerp on the MSCA-Doctoral Network project for a period of **36 months**. In line with the University of Antwerp regulations and following a positive evaluation by the doctoral committee, **UAntwerpen may provide additional funding for a maximum of 12 months to complete the doctoral degree**
- Doctoral candidates are offered a direct contract with equivalent benefits to 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 UAntwerpen 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 1st October 2025. Last-year master students expected to graduate by this time are encouraged to already apply
- Read more about working at the University of Antwerp here

Specific requirements

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

- have an academic Master recognized by the EU in one of the following disciplines: analytical chemistry, (bio)chemistry, pharmaceutical sciences, bioengineering, environmental sciences, or related fields, or you will have obtained it by the time you start work
- can demonstrate excellent study results
- have knowledge in **analytical chemistry**, in particular in separation sciences and mass spectrometry, statistics, bioinformatics. Hands-on experience in mass spectrometry is an asset
- your research qualities are in line with the faculty and university research policies
- act with attention to quality, integrity, creativity and cooperation
- are highly committed
- are flexible and possess team spirit in an international research environment
- have excellent oral and written English communication skills

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Application procedure

Applications must be submitted 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 please check the frequently asked questions or send an email to jobs@uantwerpen.be. If you have any questions about the job itself, please contact Prof. Adrian Covaci, adrian.covaci@uantwerpen.be.

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