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Doctoral Candidate (DC10) – Resilience of ecosystems to chemical stressors and climate change scenarios

About QTOX

Chemical risk assessment typically involves extrapolation of effects observed *in-vitro* and *in-vivo* under laboratory conditions to predictions of effects at the ecosystem level. This is a very challenging task and current extrapolation models have limitations, notably due to a number of ecological processes that are disregarded by the models and the paucity of data for parameterisation and validation. QTOX (www.qtox.eu) will develop mechanistic knowledge and data-efficient modelling tools to bridge the gap between standard toxicity data (typically acute effects of single chemicals) and ecologically relevant endpoints arising from chronic, time variable exposures to chemical mixtures. The results will be achieved through an interdisciplinary and intersectoral research and training program in which 10 doctoral candidates will characterise the mechanistic processes describing the successive events from exposure to ecosystem-level effects and develop models for extrapolation of adverse effects across levels of biological organization under environmentally realistic conditions. Notably, the effects of chemical mixtures, dynamic exposure conditions, and their interaction with climate change scenarios will be characterised in a series of mesocosm experiments at three sites in central and southern Europe. The mesocosm work will serve as a uniting training element and a rich source of data for testing and validating the modelling framework. QTOX will produce an open access toolbox for quantitative extrapolations in ecotoxicology and a cohort of researchers equipped with the knowledge and skills necessary to implement and develop rigorous approaches for predicting adverse effects of chemicals.

University of Valencia

The University of Valencia is a leading academic organisation, which ranks among the top 300 in the world, top 147 in Europe and top 5 in Spain as per the ARWU “Shanghai” Ranking. It takes part in 62 research projects under the European framework programmes and in 26 projects under several European Programmes other than framework ones, which makes up a total of 88 ongoing community actions. Recently, the University of Valencia obtained the HR Excellence Research Award and signed its III Equality Plan which, which contains 64 actions to be implemented to guarantee real and effective gender equality in the institution. The University of Valencia is formed by more than 3000 researchers integrated into 84 departments, 21 research institutes and 5 research units. Among them, the Cavanilles Institute of Biodiversity and Evolutionary Biology stands out by its mission to produce excellent research in the fields of ecology, ecotoxicology, and the assessment of global change impacts on aquatic and terrestrial biodiversity.

Tasks description

This DC position will be hosted by the Cavanilles Institute of Biodiversity and Evolutionary Biology of the University of Valencia (Dr Andreu Rico and Dr Antonio Camacho).

In this position, you will:

- Perform several outdoor mesocosm experiments to assess the impacts of chemical pollution and chemical-related stressors on aquatic ecosystems under Mediterranean conditions.
- Use empirical data to build and validate multispecies models.
- Test the concepts of climate-induced toxicant sensitivity (CITS) and toxicant-induced climate susceptibility (TICS) at the population and community levels using Dynamic Energy Budget (DEB) approaches and food web modelling.
- Write project reports for your local and network supervisors on a regular basis
- Enrol in the Doctoral School on Pollution, Toxicology and Human Health of the University of Valencia, and comply with the doctoral training requirements.
- Participate actively in the QTOX training, dissemination, communication, and valorization program.
- Prepare a doctoral thesis, and publish scientific articles related to the research project.

Furthermore, the selected candidate will take part in the following planned secondments:

- Academic secondments: University of Gent (Belgium) and Wageningen University (the Netherlands)
- Industrial secondment: Ibacon GmbH (Germany)

Profile & requirements

- Applicants must hold a master’s degree or equivalent in the fields of Biology, Environmental Sciences, Mathematics or Computer Science.
- Applicants must have a solid knowledge of aquatic ecology, ecotoxicology and/or ecological modelling.
- Transcripts of the master’s degree must be available by the date of the recruitment.
- Applicants should have obtained outstanding academic results.



- Applicants must have an ability to understand and express themselves in both written and spoken English to a level that is sufficiently high for them to derive the full benefit from the network training.
- Applicants must be eligible to enrol on the aforementioned PhD programme at the host institution.
- Applicants must have the necessary academic skills and background to make the success of a doctoral degree.
- Applicants can be of any nationality but must comply with the Horizon Europe MSCA eligibility criteria:
 - **HORIZON MSCA Mobility Rule:** researchers must not have resided or carried out their main activity (work, studies, etc.) in the country of the host organisation for more than 12 months in the 3 years immediately before the recruitment date. Compulsory national service, short stays such as holidays and time spent by the researcher as part of a procedure for obtaining refugee status under the Geneva Convention are not taken into account.
 - **HORIZON MSCA eligibility criteria:** supported researchers must be doctoral candidates, i.e. not already in possession of a doctoral degree at the date of the recruitment. Researchers who have successfully defended their doctoral thesis but who have not yet formally been awarded the doctoral degree will not be considered eligible.

Benefits

- The selected candidate will be employed by the host organisation for **36 months**.
- **The start date will be as of February 1st, 2023**
- Doctoral candidates are offered a competitive remuneration based on the MSCA allowances in line with the [MSCA WP 2021-2022](#). The University of Valencia has received an EU grant to recruit a Doctoral Candidate (DC), consisting of a monthly *Living Allowance* of € 3104.2; monthly *Mobility Allowance* of € 600; and monthly *Family Allowance* € 660 (only if applicable). Please note that all compulsory national labour taxes (social security, etc.) to be borne by the employer and employee shall be deducted from the abovementioned amounts. Furthermore, funding managed by the supervisor will be available for technical and personal skills training and participation in conferences.
- The opportunity to be part of an MSCA Doctoral Network: the selected candidate will benefit from the designed training programme offered by the host organisation and the QTOX consortium.
- The selected candidate will participate in international secondments to other organisations within the QTOX network.

Please, find additional information in the [Horizon Europe Work Programme MSCA](#) from p.75 onwards.

Application

- Interested candidates are invited to apply for this position by submitting the application form: <https://www.uantwerpen.be/en/projects/quantitative-extrapolation-ecotoxicology/job-openings/application/>
- The closing date for applications is **November 13th, 2022**.
- The selection committee will review all the applications upon the application deadline.
- The recruitment process of QTOX is in line with the principles set out in the [European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers](#).
- Ukrainian researchers are eligible to benefit from the Science4Refugees initiative without the need of holding the refugee status.

Additional information

For additional information about the research project and this individual position, please contact:

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