

Vacancy for a PhD position (4 years)
Forest & Nature Lab, Ghent University and Meise Botanic Garden
(Belgium)

**FOURCAST: FOrest cold and Urban heat island effects on
Climate Adaptation of biodiversity at different Spatial and Temporal scales**
BELSPO Brain-Be2.0 programme project (https://www.belspo.be/belspo/index_en.stm)

A PhD position focused on biodiversity responses to climate change using herbarium and museum specimens in combination with a large-scale mesocosm experiment is available at Ghent University and Meise Botanic Garden (promotors: Prof. Pieter De Frenne, Dr. Filip Vandeloock), in strong collaboration with the Royal Belgian Institute of Natural Sciences (RBINS), the Royal Meteorological Institute (RMI) and the Research Institute for Nature and Forest (INBO). The PhD is part of the BELSPO project 'FOrest cold and Urban heat island effects on Climate Adaptation of biodiversity at different Spatial and Temporal scales' (FOURCAST).

Project description

Climate change is expected to have profound amplified impacts on densely populated and urbanised regions such as Belgium. Within this PhD research we aim to determine the role of changes in temperature and precipitation on thermophilization, phenology and/or functional trait changes in the Belgian flora and arthropods, while accounting for urban heat island and forest buffering effects. The rich and unique herbarium of Meise BG (plants) and natural history collections at the RBINS (arthropods) will be used to retrieve data on species occurrences and phenology/functional traits that capture these long-term climate change events. Second, to isolate the urban impact on fauna and flora, we will perform an in-depth analysis of climate change and its impacts on biodiversity in the Brussels region. We will assess how the urban heat island (UHI) and urban green affects performance of plants and invertebrates in a mesocosm experiment along UHI gradients in Brussels. The FOURCAST project is coordinated by Meise Botanic Garden, and is in strong collaboration with the Forest & Nature Lab (Ghent University), the Royal Belgian Institute of Natural Sciences (RBINS), the Royal Meteorological Institute (RMI) and the Research Institute for Nature and Forest (INBO).

Your profile

- You have a Masters, or Honours, degree in Bioscience Engineering, Biology, Ecology, Applied Biosciences or an equivalent degree in a related field (also candidates that will obtain their degree soon are invited to apply). Candidates that graduate in June/July 2023 are also encouraged to apply.
- You have excellent study grades.
- You have a strong interest in climate change effects on vegetation and/or arthropod ecology.
- You are highly motivated to perform scientific research that involves field work, quantitative data analyses as well as writing scientific publications.
- You are a team player with good communication skills, you like to write and discuss ideas. An excellent knowledge of the English language is required.
- You are highly motivated to work in a collaborative project with other PhD students, postdocs and technical assistants and PIs.
- You have a driver's license type B

Our offer

- A PhD scholarship for four years, for the first two years funded by Ghent University followed by two years funded by Meise Botanic Garden. The actual work place will be at the two institutes throughout the four years.
- Collaboration in young and dynamic scientific teams.
- The possibility to gain experience in doing high level scientific research, with field, lab and computational work.

- The opportunity to obtain a PhD degree at Ghent University in a topical field of applied environmental sciences and climate change.
- The estimated starting date is (as soon as possible after) 1 February 2023. However, candidates that graduate in June/July 2023 are also encouraged to apply. In such cases the starting date can be adapted.

How to apply?

Please send your application, consisting of an application letter of max. 1 page, plus your CV and transcript of records, by 21 December 2022 the latest by email to filip.vandelook@plantentuinmeise.be and Pieter.DeFrenne@UGent.be (all documents should be merged together into one single PDF file).

Research environment

The successful candidate will be based at the Forest & Nature Lab (www.fornalab.ugent.be) of Ghent University, Belgium and at Meise Botanic Garden (www.plantentuinmeise.be).

ForNaLab consists of *c.* 30 staff members and is headed by Prof. Kris Verheyen. The research group is part of the Department of Environment at the Faculty of Bioscience Engineering, Ghent University (www.ugent.be). ForNaLab's mission is to perform hypothesis-driven research on the interactions between composition and ecosystem function, with a clear pathway to inform ecosystem management. ForNaLab is actively involved in numerous national and international projects and networks, including FLEUR (www.fleur.ugent.be), forestREplot (www.forestreplot.ugent.be), TreeDivNet (www.treedivnet.ugent.be), FORMICA (www.formica.ugent.be), FunDivEUROPE (www.fundiveurope.eu) and smallFOREST (<http://upicardie.fr/smallforest/uk/>).

Meise BG is one of the most important botanical gardens in the world with a history that dates back to 1796. The extensive plant collections form the basis for scientific research and public relations. The herbarium of Meise Botanic Garden (BG) houses 4,000,000 collection items, which is the 15th largest herbarium worldwide. The Belgian herbarium is particularly important as the Belgian flora is actively studied by a large number of scientists, amateurs and students. In recent years, more than 2.5 million objects have been digitised which has opened a treasure of information. Meise BG has a fairly large research department, consisting of about 30 researchers, focusing on taxonomy, evolution and conservation of plants and fungi from Europe and Central Africa. Besides collaborations with nearly all Belgian Universities, researchers at Meise BG are involved in international networks dealing with fundamental and applied plant sciences.

Additional information

For more information, please do not hesitate to contact Dr. Filip Vandelook and/or Prof. Pieter De Frenne, via email at filip.vandelook@plantentuinmeise.be and Pieter.DeFrenne@UGent.be

More information on our work and research group is available at <http://www.fornalab.ugent.be> and www.plantentuinmeise.be