

Hosting offer for Marie Skłodowska-Curie Postdoctoral Fellowships (PF) 2022 at University of Antwerp / Centre of Excellence Microbial Systems Technology

[MSCA Postdoctoral Fellowships](#) are individual research grants offering excellent postdoctoral researchers the chance to develop their skills by means of international mobility. Through the implementation of an original and personalised research project, MSCA Postdoctoral Fellowships aim to foster excellence through training and mobility and to equip researchers with new skills and competences in order to identify solutions to current and future challenges.

University of Antwerp/ Centre of Excellence Microbial Systems Technology invites motivated postdoctoral researchers to jointly prepare an application for the [MSCA-PF-2022 call Marie Skłodowska-Curie Postdoctoral Fellowships](#) call ([MSCA-PF-2022](#)) with them as host organisation.

Description of Hosting organisation/group

Microbial Systems Technology (MST) is the University's Centre of Excellence in microbial research and biotechnology for a biobased economy and a sustainable society. MST consolidates expertise in microbiology, biotechnology, and data science to better understand microbial activity and microbial ecology.

The Centre's ambition is to become a driver in the development of bio-based solutions. Our research activities exploit the enormous versatility in biochemical and physiological properties of microbes to create solutions for bio-electronics, agriculture, the food & feed industry, and healthcare.

MST has expertise in molecular biology, phenotypic characterization, process technology, and bioinformatics. Systems biology, omics technologies, and next-generation sequencing play a central role to better understand microbes and their environment. By joining forces, new and exciting developments can be quickly integrated into research & development, thus catalyzing novel microbial products and processes.

Microbial processes have been used in industrial applications from the earliest times for baking, brewing, and food preservation. Today, progression in microbial biotechnology is creating insights that allow using microorganisms for many more applications. We aspire to a central role for microbial processes in the development of 21st-century technology, poised to become sustainable, biobased, and CO₂ neutral. We envision bio-based solutions to mitigate global challenges such as climate change, sustainable development in the global economic context, and the One Health concept.

Learn more about our Centre by visiting our homepage: <http://uantwerpen.be/mst>

Topics/expertise

On the following page you will learn about the research themes of the MST teams. For a detailed view on our activities you can visit the webpage: <https://www.uantwerpen.be/en/research-groups/microbial-systems-technology/teams/>. We welcome enthusiastic and creative young scientists to work in any of our six research teams that are part of MST. Interested in more? You will find our e-mail contacts on the last page of this document.

Meysman lab	This team studies biogeochemical cycling, and the large-scale interactions between biology, chemistry and geology. Projects focus on how marine ecosystems can be used to extract CO ₂ from the atmosphere via enhanced weathering. In a second research pillar, we investigate the intriguing and exciting phenomenon of microbial electricity in the ocean floor. We have identified microbial structures with future application in bio-electronics.
Lebeer lab	The focus of this team is the beneficial microbiome of humans, animals, and plants. Lactobacilli isolated from different habitats are of particular interest. We study their genetics, ecological behavior, and interaction with the host. Applying molecular, physiological, immunological, and computational techniques, we develop novel biotechnological solutions for human, animal, and crop health. There is also a bacterial culture collection for further exploration.
Verbruggen lab	In this lab, we study the microbial ecology of soils and plants. An overarching line is how soils and plants interact through microbial communities in terms of nutrient flows, plant community composition and biodiversity, and soil integrity. Land use, nutrient inputs, and drought may change these processes. We have a particular interest in mycorrhizal fungi, which are in symbiosis with plants. These fungi influence many plants' nutrient uptake and act as a gateway of plant sugars to the soil, influencing soil and its microbiome.
Laukens lab	Data science is the central theme for this group. The team's core activities are introducing and applying innovative pattern mining and machine learning techniques to next-generation sequencing data, heterogeneous omics data, and clinical information. Using these techniques, computational and network models for biological systems and diseases are created. We develop innovative visualizations of complex life science data and pattern mining results.
Vlaeminck lab	Cleantech and resource-efficient microbial technology for nutrient management is the team's focus. Work includes the production of single-cell protein with purple bacteria, aerobic heterotrophic bacteria, and micro-algae. We have expertise in developing innovative bioreactor systems. Examples of successes are bio-fertilizer in horticulture and feed in animal husbandry and aquaculture. We complement biotechnology with sustainability evaluations using life cycle assessments and material flow analysis.
Beemster lab	We investigate the effects of environmental conditions (mainly drought, temperature, and CO ₂) and genetic differences during plant growth. The team uses growth analysis and kinematic approaches. Genome-wide transcriptomics focuses on plant growth zones. Besides, we perform mutation mapping and methylome analysis. The team has expertise in using molecular genetics tools to generate mutant and overexpression lines and promotor fusion lines to study gene function in <i>Arabidopsis thaliana</i> and <i>Zea mays</i> .

Your profile

- You must have a completed PhD in (micro)biology, bio-engineering, environmental sciences, bioinformatics, data science at the time of the call deadline (September 14, 2022). We also welcome candidates with a PhD in other specializations, as long as sufficient experience with key skills can be proven.
- You must have a completed PhD at the time of the call deadline (14 September 2022).
- Candidates must have a maximum of 8 years full-time research experience from the PhD award date until September 14, 2022. Periods of inactivity in research (e.g. unemployment, periods of employment outside research, parental or sick leave) do not count towards the time of research experience.
- For European fellowships, candidates can be of any nationality and must not have resided or carried out their main activity (work, studies, etc.) in Belgium for more than 12 months in the 36 months immediately before September 14, 2022.
- Highly motivated candidate with an excellent research track record appropriate to career stage, as evidenced by academic publications and other scientific output.

What we offer

- Support and guidance for the preparation of your MSCA PF proposal
- A stimulating, interdisciplinary environment for high-level research.

How to apply?

Indicate your interest by contacting the host institution as follows:

Please contact Patrick De Boever patrick.deboever@uantwerpen.be by e-mail with a short CV and motivation to indicate your interest to prepare a MSCA-PF application.

After the supervisor agrees to support you as a MSCA-PF candidate, you can start preparation of MSCA PF project proposal and will be supported further by the supervisor and the Research Support Office of the host university.

For more information on the MSCA PF scheme or the host institution, you can contact the MSCA coordinator of the University of Antwerp: Dr. Liesbet Cockx (Research, Innovation & Valorisation Antwerp, Grants Office): Liesbet.cockx@uantwerpen.be