



PhD position: Investigating the interplay between metacommunity structure and the composition of synthetic gut microbial communities

The Laboratory of Microbial Systems Biology is looking for a motivated PhD candidate who is interested in gut microbial ecology. The lab is part of the Molecular Bacteriology unit at the Rega Institute and uses systems biology methods to investigate microbial community structure and dynamics. The PhD will be embedded in a Marie Curie Doctoral Network, HoloGen, which aims to study host-microbiota interactions from the hologenomics perspective.

URL: <http://msysbiology.com>

Project

The human gut microbiome is a complex ecosystem consisting of hundreds of species interacting with one another and with the host. Its composition is not only shaped by species interactions and host characteristics but also by the environment of the host, in particular the host's social network. In this project, we want to study how the interplay between local conditions and the social network shapes host microbiota. For this, we plan to mimic social networks in vitro, to fully control local conditions, migration rates and the structure of the network. We will also work with previously established synthetic gut communities to be better able to represent our observations in a mathematical model. Such a model will enable predictions and the exploration of additional scenarios. To implement this project, the successful candidate will have access to state-of-the-art anaerobic culturing equipment.

Profile

The candidate should have a solid background in microbiology and molecular biology, enjoy wet lab work, be able to work independently and be passionate about microbial ecology. Experience with anaerobic culturing techniques, flow cytometry, 16S rRNA gene sequencing or mathematical modelling are a plus. Applicants should have a master's degree in microbiology, molecular biology, bioscience or (bio)chemical engineering, biotechnology or equivalent with at least a distinction, obtained in September 2024 at the latest. A proof of proficiency in English is a requirement (<https://www.kuleuven.be/english/application/lang>).

Offer

- enrolment at one of the top universities in Europe
- exciting research environment
- competitive salary

Interested?

Please submit a cover letter, a CV including obtained grades, and a list with at least two references (with name, email, and phone number) through the online application tool (<https://www.kuleuven.be/personeel/jobsite/jobs/60342371?lang=en>). You can apply for this position until the 15th of September 2024. The PhD starts end of November/beginning of December 2024. For more information, please contact Prof. Faust: karoline.faust@kuleuven.be