

Fully funded 4-year PhD position at the University of Geneva, Switzerland



The *Microbiota-gut-brain axis and behaviour laboratory* at the Department of Genetics and Evolution, led by Dr. Joanito Liberti, invites applications for a PhD position. We are seeking a creative and collaborative scientist to join our dynamic, interdisciplinary team to explore the interplay between gut symbionts, neurophysiology, and behaviour in bees.

Background: Our research investigates the bi-directional communication between the gut microbiota and animal behaviour, aiming to uncover the proximate mechanisms and evolutionary significance of microbiota-host interactions. We work across different social bee species to understand how microbes influence behavioural complexity in animal societies.

Research focus: The project will be developed in line with the successful candidate's interests and skills. Possible directions include investigating the role of the gut microbiota in regulating bee neurophysiology and behaviour, building on our recent work (see Liberti *et al.* (2022) *Nature Ecology & Evolution*, <https://www.nature.com/articles/s41559-022-01840-w>; Liberti *et al.* (2024) *mBio*, <https://journals.asm.org/doi/10.1128/mbio.01034-24>), or exploring how sociality shapes microbiome dynamics. These studies can be complemented by analyses of the underlying molecular mechanisms (e.g., using microscopy, metagenomics, metabolomics, transcriptomics, proteomics and/or epigenomics).

Start date: between September and December 2025.

Qualifications:

- MSc in evolutionary biology, behavioural ecology, microbiology, molecular biology, or a related field
- Experience in experimental design and behavioural studies
- Knowledge of NGS technologies and associated bioinformatics pipelines
- Familiarity with R, Python and/or Bash, and Linux operating systems
- Skills in statistical data analysis and scientific writing
- Experience working with bees is an advantage but not essential

The University of Geneva (UNIGE) is world-renowned for its research and ranks among the top 1% of universities worldwide. We offer an attractive research environment and salaries according to Swiss standards.

What we offer:

- A friendly and inspiring international research environment
- Access to state-of-the-art technologies: automated behavioural tracking, next-generation sequencing, advanced microscopy, and a fully equipped microbiology and molecular biology laboratory
- Opportunities for collaboration within UNIGE and with international partners
- Access to courses through the PhD Program in Ecology and Evolution (<https://lifesciencesphd.unige.ch/program/ecology-and-evolution>)
- Competitive salary according to university regulations

Application process: informal inquiries about the position are welcome. **To apply**, please send your application package as a **single PDF file** to Dr. Joanito Liberti at: joanito.liberti@unige.ch.

Deadline: the closing date for applications is **May 25th, 2025**. Shortlisted candidates will be contacted for interviews shortly after this date.

The application should include:

- A 1-page cover letter detailing your research interests and relevant experience
- Your curriculum vitae (CV)
- Academic transcripts and certificates
- Names and contact details of two academic referees

By joining our team, you will contribute to cutting-edge research on the proximate and ultimate mechanisms linking gut microbes, brain function, and behaviour in animals. We look forward to receiving your application!