

Two PhD positions in the Department of Ecology and Evolution, University of Lausanne, Switzerland

- 1. Experimental evolution at species range margins**
- 2. Evolution of plant sexual systems**

Two PhD positions are open in John Pannell's lab in the Department of Ecology and Evolution, University of Lausanne, to study (1) the evolution of plant populations at and beyond species range margins or (2) the evolution of plant sexual systems.

Further details about the lab, including recent papers on which this project will build, can be found at: <https://www.unil.ch/dee/pannell-group>, or on writing to john.pannell@unil.ch.

Project 1: Experimental evolution at species range margins

This project will use experimental evolution to test contrasting hypotheses for the effects of migration in either promoting or hindering adaptation in marginal populations. It will thus build on, and build bridges between, two strands in the lab: research on the demography, evolution and genomics of species range expansions and metapopulations; and the use of experimental evolution to address general questions in evolutionary biology. The project will involve establishing experimental populations at a number of sites across Europe and following their evolution over several successive generations, with the aim of building three mutually informative datasets to determine how admixture and selection in marginal populations affect (1) their demography (and population viability), (2) the quantitative genetics of morphological, life-history and physiological traits with an influence on local adaptation in marginal environments, and (3) the genomic architecture of responses to selection in different environments and in the context of different sources of admixture.

Project 2: Evolution of plant sexual systems

The aim of this project is to advance our understanding of sexual-system transitions in plants, with a primary focus on evolutionary transitions between hermaphroditism and dioecy. The scope of the project can be partly tailored to the particular interests of the successful applicant and could involve a range of angles. We are currently particularly interested in using experimental evolution to address questions concerning the quantitative genetics and genomic architecture of sexual-system transitions, including but not only sex chromosomes. The student's project could benefit from involvement in conducting and analysing results from an experimental evolution study that has been running for more than a decade. It could also include field observations and experiments, theoretical modelling and/or genomic analysis. There is scope to choose from a number of different study systems for empirical work.

Research scope and skills sought

The student should have broad interest in evolutionary biology and a foundation in evolutionary biology, ecology and/or quantitative/population genetics, with an interest in quantitative and statistical analysis of large datasets. He/she should also have good written and oral communication skills. The project will involve close collaboration with other lab members and project partners across Europe, and the successful candidate should thus both be self-motivated and have a collaborative

spirit. Although not a requirement (the language of the lab and the research environment of the department is English), some knowledge of French would be an asset.

Host Department and University

The Department of Ecology and Evolution hosts a broad range of research groups, and its members enjoy a lively intellectual and social life. Although the University of Lausanne is francophone, the department is highly international, and all its research activity and seminars are conducted in English. The University has seven faculties and approximately 14,300 students and 3,900 researchers from over 120 countries. It is situated on a beautiful campus on the shore of Lake Geneva, and is close to the Swiss and French Alps.

Starting dates

Both project could start from September 2022, but the starting dates are flexible and could potentially be brought forward or delayed to accommodate the timing of an excellent candidate.

Applications

Informal enquiries should be sent to John Pannell (john.pannell@unil.ch). Formal applications for both positions should be uploaded using the link: <https://bit.ly/3KdR9ok>. Applications should include (1) a cover letter detailing your research interests, experience and motivation for applying, (2) a CV, (3) an example of previous research work (an article, preprint or master thesis chapter, and (4) the names of two referees. All applications received by the 15.05.2022 will receive full consideration.

University equality policy

The University of Lausanne promotes an equitable representation of men and women among its staff and encourages applications from women and minority groups.