PhD Position in Plant–Pathogen Herbarium Genomics

We are looking for a PhD student to explore phylogeographic patterns and (co-)evolutionary dynamics in plant pathosystems by means of herbarium genomics and population genetic analyses. This 4-year position starts in January 2021 and is funded by the University Research Priority Program (URPP) “Evolution in Action: From Genomes to Ecosystems” of the University of Zurich (UZH), Switzerland.

Plant pathogens have had a strong impact on human societies since historical times. Together with their hosts, plant pathogens also offer a great opportunity to study coevolution. In this project, you will generate and analyse next-generation sequencing data for an economically important plant pathosystem with host and pathogen reference genomes available. Combining modern DNA with historical DNA isolated from herbarium specimens, you will compare patterns of past and present genetic diversity and infer evolutionary processes from these patterns. This project provides the unique opportunity of jointly analysing host and pathogen genomes to identify signatures of concerted evolution at individual genes and across the genome. The project also offers room for theory development. During your PhD, you will contribute to teaching at the Bachelor and Master level.

What we offer

- Cutting-edge clean-room laboratory specialised on historical/ancient DNA (aDNA)
- In-house sequencing facility (Functional Genomics Center Zurich, www.fgcz.ch)
- Co-supervision by experts in aDNA processing and population genomic analyses of NGS data (Prof. Dr. Dr. Verena Schünemann, Dr. Simon Aeschbacher)
- Access to a network of herbarium curators across Switzerland
- Training and networking opportunities, collaborative and integrative research environment, social events (www.evolution.uzh.ch)
- Enrolment in Life Science Zurich Graduate School (www.lifescience-graduateschool.uzh.ch)
- Working place at UZH Irchel Campus with outstanding research infrastructure, sports and catering facilities, recreational areas, and excellent links to public transport and Zurich Airport
- Full-time employment with PhD salary according to the guidelines of UZH, an equal opportunity employer
- The vibrant city of Zurich with a wide range of cultural and educational institutions, located at Lake Zurich and at the foot of the Swiss Alps

What we expect

We are looking for a candidate with a background in ancient DNA research and a MSc degree in a relevant discipline. Candidates for this position must bring:

- Prior experience with ancient DNA processing for next-generation sequencing (NGS) technologies (tissue sampling, extraction, clean-room laboratory procedures, library preparation)
- Willingness to travel internationally, visit numerous herbaria, and organise these trips independently
- Good skills in spoken and written English
- Good team working and communication skills

Basic bioinformatics skills (read processing, read alignment, variant calling) and experience in NGS data analyses (e.g. phylogenetic or demographic inference) are highly desirable, but not a must.
How to apply

To apply, please send a single PDF containing a letter of motivation written in English, a CV, two letters of recommendation, and a transcript of your latest academic degree (if applicable) to Ursina Tobler (ursina.tobler@ieu.uzh.ch). We will start reviewing applications on 31 August 2020 and continue until the position is filled. If you have questions, please contact Verena Schünemann (verena.schuenemann@iem.uzh.ch) or Simon Aeschbacher (simon.aeschbacher@ieu.uzh.ch).

Contact Addresses

Assistant Prof. Dr. Dr. Verena Schünemann
Head Paleogenetics Group
Institute of Evolutionary Medicine
University of Zurich
Phone +41 44 635 05 60
E-mail: verena.schuenemann@iem.uzh.ch
https://www.iem.uzh.ch/en/research/paleogenetics_group_schuenemann

Dr. Simon Aeschbacher
Independent Group Leader
Department of Evolutionary Biology and Environmental Studies
University of Zurich
Phone +41 44 635 49 72
E-mail: simon.aeschbacher@ieu.uzh.ch
https://www.ieu.uzh.ch/en/staff/member/aeschbacher_simon