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UNIVERSITET

## PhD student in Population genomics

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**Uppsala University is a comprehensive research-intensive university with a strong international standing. Our ultimate goal is to conduct education and research of the highest quality and relevance to make a long-term difference in society. Our most important assets are all the individuals whose curiosity and dedication make Uppsala University one of Sweden's most exciting workplaces. Uppsala University has over 54,000 students, more than 7,500 employees and a turnover of around SEK 8 billion.**

A PhD student position in Population genomics is available at the Department of Ecology and Genetics, Program in Plant Ecology and Evolution.

The Department of Ecology and Genetics is an international environment with staff and students from all over the world. Our research spans from evolutionary ecology and genetics to studies of ecosystems. For more information, see [www.ieg.uu.se](http://www.ieg.uu.se). The [Evolutionary Biology Centre](#) to which the Department belongs is one of the world's leading research institutions in evolutionary biology. It is part of Uppsala University, which has been ranked very high among all European Universities in the subject of evolutionary biology. Our lab is part of the Program of Plant Ecology and Evolution that excels in many aspects of genetics and evolution and offers an inspiring international atmosphere. There are ample opportunities for interaction with PhD-students, PostDocs and researchers working on related topics. We are tightly linked to [the Science for Life Laboratory](#) and have access to advanced laboratory infrastructure, high performance computing resources and bioinformatics support.

[Read more about our benefits and what it is like to work at Uppsala University](#)

**Project description:** Climate change puts our forests at risk, and current forest biomass production is neither secure, sustainable nor sufficient to meet the future demands of the energy and process industry sector, nor well-placed to meet additional societal goals for forest biodiversity, recreation, and aesthetics.

'TREES FOR ME' is a centre of excellence on fast growing broadleaves, i.e. poplar, aspen, hybrid aspen and birch, for sustainable forests, materials and energy. Fifty partner organizations representing academic and research institutes, and the enterprise and public sectors will collaborate in TREES FOR ME, working together to find solutions to meet these future demands, and mitigate projected risks to forest health. The centre's goal is to develop science-based, innovative solutions for, and build future competence in, a new forest biomass supply system for the delivery of high-value sustainable materials and energy products.

In total, 13 PhD students will be recruited to the centre and will collaborate with stakeholders representing the whole forest-based value chain, to build research excellence and knowledge for the Swedish energy and forest sectors, and society in general. Within this general framework, Uppsala University, in close collaboration with the the Forestry Research Institute of Sweden, will be more specifically responsible for developing genomics tools related to the establishment of genomic selection in birch breeding. This will require a fine-scale understanding of the genetic structure and the pattern of local adaptation in birch across Scandinavia.

The project will be based on genome resequencing of extensive collection of birch trees along latitudinal gradients. The project will also benefit from the availability of range-wide collection of birch material and from previous resequencing efforts in birch. In addition to contribute to the establishment of genomic selection these data can also be used to address evolutionary questions.

**Duties:** The PhD student will be in charge of DNA extraction and associated lab work as well as all bioinformatic and population genetics analyses from the resulting data. DNA sequencing will be carried out by a dedicated sequencing center. The PhD student will also responsible for drafting scientific articles and participate to the scientific activities (seminars, journal clubs) and teaching at the Department. The PhD education includes both research, courses and literature studies.

**Qualifications required:** To be eligible for a PhD-student position the applicant must hold a master degree (or equivalent) in evolutionary genomics, computational biology, bioinformatics, or related fields. A strong background in population or quantitative genomics and a solid background bioinformatics are a prerequisite. We attach great importance to personal qualities such as ability to work independently, interact and communicate with others and resilience. Candidates must be able to express themselves fluently in spoken as well as written English.

The PhD candidate will need to be familiar with programming in Python.

**Qualifications desired:** The PhD candidate will ideally be familiar with experience of workflow development (e.g. Snakemake). Knowledge of working in R is also a plus. No prior knowledge of forest tree biology is required, just an enthusiasm for genomics, evolution and its applications and a curiosity to learn.

**About the employment:** Temporary position according to the Higher Education Ordinance chapter 5 § 7. The graduate program covers four years of full-time study. The position can be combined with teaching or other duties at the department (maximum 20%), which prolongs the employment with the corresponding time. The salary will be set according to local agreements. Rules governing PhD students are set out in the Higher Education Ordinance chapter 5, §§ 1-7 and in [Uppsala University's rules and guidelines](#). [More information about postgraduate studies at Uppsala University](#).

**Placement:** Uppsala

**Starting date:** 2022-07-01 or as agreed.

**For further information about the position please contact:** Professor Martin Lascoux, [Martin.Lascoux@ebc.uu.se](mailto:Martin.Lascoux@ebc.uu.se), +46 18 471 64 16.

**Application:** The application should include 1) a letter of intent describing yourself, your research interests and motivation of why you want to do a PhD, and why you are suitable for the position, 2) your CV, 3) a short description of your education, 4) a copy of your master degree, your course grades and a copy of your master thesis, 5) the names and contact information to at least two reference persons (e-mail address

and phone no.), and 6) publications produced. The application should be written in English.

**Please submit your application by 1 June 2022, UFV-PA 2022/1141.**

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Please do not send offers of recruitment or advertising services.

**Submit your application through Uppsala University's recruitment system.**

**Placement:** Department of Ecology and Genetics

**Type of employment:** Full time , Temporary position longer than 6 months

**Pay:** Fixed salary

**Number of positions:** 1

**Working hours:** 100 %

**Town:** Uppsala

**County:** Uppsala län

**Country:** Sweden

**Union representative:** ST/TCO [tco@fackorg.uu.se](mailto:tco@fackorg.uu.se)

Seko Universitetsklubben [seko@uadm.uu.se](mailto:seko@uadm.uu.se)

Saco-rådet [saco@uadm.uu.se](mailto:saco@uadm.uu.se)

**Number of reference:** UFV-PA 2022/1141

**Last application date:** 2022-06-01

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