



Landscape Breeding – PhD student in forest remote sensing

Ref SLU.ua.2022.2.5.1-4857

Department of Forest Resource Management

The Department of Forest Resource Management conducts education and research in the areas of forest planning, forest remote sensing, forest inventory and sampling, forest mathematical statistics and landscape studies. The department is also responsible for the implementation of the ongoing environmental monitoring programs the National Forest Inventory, National Inventory of the Landscape in Sweden, Terrestrial Habitat Monitoring and the Butterfly and Bumblebee Inventory. In total, we are about 100 employees. More information can be found at www.slu.se/srh.

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Landscape breeding: A new paradigm in forest tree management

Description:

In order to strengthen innovation in biological production systems, the Foundation for Strategic Research (SSF) within the call for proposals "Biotechnology and breeding" has financed the seeding project "Landscape processing: A new paradigm in forest management/tree processing" (<https://strategiska.se/en/research/ongoing-research/food-feed-and-forest-2020/project/11358/>) between 2022 and 2026. The goal of the research project is to develop a digitized forest tree breeding strategy that overcomes limitations found in traditional forest tree breeding. By utilizing commercial and natural forest stand and taking climate and environmental variables into account in analyzes and models, the project wants to accelerate the breeding of forest trees.

Within the project, we are looking for three PhD students to develop various aspects of a digitized forest tree breeding strategy based on population genetic analyzes and remote sensing technology. Population genetic analyzes and remote sensing phenotyping will be performed at the landscape level to develop predictive models to improve forest resilience, biomass production and biodiversity.

The doctoral studies will be conducted as part of a large research project and a high degree of collaboration is expected between doctoral students and postdocs in complementary disciplines. The three different doctoral students will work at three strong research environments at the Swedish University of Agricultural Sciences.

This PhD position in forest remote sensing will focus on using remote sensing to identify, measure and predict forest damage in combination with molecular and genetic analyses. The position is located at the department of forest resource management at SLU in Umeå. Important areas of research are how remote sensing data can be used to analyze phenology and reduced vitality of trees, how the information can be linked to modeling of tree and plant diseases in the field, and to tree genetics and physiology.

Qualifications:

Highly motivated and collaborative candidate with an interest in remote sensing and conifer genetics and physiology are encouraged to apply. The candidate must have a master's degree (or equivalent) in a subject relevant to the position, such as forestry, biology, engineering, remote sensing and/or statistics. Good ability to communicate in spoken and written English is required. The ability can be demonstrated through scholarly works written in English by the candidate (eg an MSc thesis or any other published or informal material). Knowledge in remote sensing, plant or forest pathology, quantitative and population genetics and/or programming is advantageous. Technical skills, e.g. Geographical Information Systems (GIS), the R statistical programming environment, and/or other computational software are also desirable. The candidate should also be happy to prove previous experience of or skills in collecting field data.

Place of work:

Umeå, Swedish University of Agriculture Sciences (SLU)

Forms for funding or employment:

Employment as a doctoral student 4 years of education.

Starting date:

March 2023 or as soon as possible after this date.

Application:

Click the “Apply” button to submit your application. The deadline is 2023-01-15.

To qualify for third-cycle (Doctoral) courses and study programmes, you must have a second-cycle (Master’s) qualification. Alternatively, you must have conducted a minimum of four years of full-time study, of which a minimum of one year at second-cycle level.

Applicants will be selected based on their written application and CV, degree project, copies of their degree certificate and transcript of records from previous first and second-cycle studies at a university or higher education institution, two personal references, and knowledge of English. More information about the English language requirements can be found here: www.slu.se/en/education/programmes-courses/doctoral-studies/new-doctoral-students/english-language-requirements/

Please note that applicants invited to interview must submit attested copies of their degree certificate, a transcript of records from previous first and second-cycle studies at a university or higher education institution. Applicants who are not Swedish citizens need to submit an attested copy of their passport’s information page containing their photograph and personal details.

Read about the PhD education at SLU at www.slu.se/en/education/programmes-courses/doctoral-studies/

Academic union representatives:

<https://internt.slu.se/en/my-employment/employee-associations/kontaktpersoner-vid-rekrytering/>

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SLU has just over 3,000 employees, 5,000 students and a turnover of SEK 3 billion. The university has invested heavily in a modern, attractive environment on its campuses.

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