A PhD position in plant cell and molecular biology at the Department of Plant Physiology/Umeå Plant Science Centre

The position is at the Department of Plant Physiology which is part of Umeå Plant Science Centre (www.upsc.se). UPSC is a world leading centre in experimental plant biology.

We are looking for a highly motivated PhD student to work on molecular control of lignification at Umeå Plant Science Centre.

Plant xylem tissues consist of vessel elements and fibers which deposit secondary cell walls as a part of their maturation. Lignin is a cell wall component that reinforces the walls and confers a hydrophobic barrier which is crucial for water transport in the xylem vessels. We have recently shown that lignification is a cooperative process in which the lignin monomers are supplied to the lignifying cells by their neighbouring cells (Pesquet et al. 2013, Plant Cell 25:1314-28). We have also identified parts of the molecular machinery that mediate the non-cell autonomous lignification of the xylem vessel elements. The PhD project will build on these results and focus on the role of two new proteins in regulation of lignification with the help of various molecular, genetic and physiological methods. The project includes analysis of these proteins on the DNA, RNA, and protein levels, functional assays in Arabidopsis, protein-protein interactions and transcriptional regulation. Many of the genetic tools are either already available or underway for the project. The results will be finally transferred to our Populus tree model in order to modify lignification in tree stems in a cell-specific manner.

Admission requirements

The general admission requirements for third-cycle study programs are a second-cycle degree and completed courses carrying at least 240 ECTS, at least 60 ECTS of which were awarded in the second-cycle, or substantially equivalent knowledge otherwise acquired in Sweden or abroad.

To be accepted in the graduate programme in plant cell and molecular biology, the successful candidate must have completed 90 ECTS credits in biology or chemistry with relevance to biology. Out of this, at least 15 ECTS credits has to be in a subject closely related to the research topic of the graduate programme as well as an independent project work of at least 15 ECTS credits in an area relevant for the project.

Good social skills, ability to work independently as well as in collaboration with others and good skills in English language are required.

Application

Your application should contain a personal letter of intent, CV, copies of your exams and list of the academic courses included in the exam as well as names and contact information of three reference persons. Evaluations will be based on personal references, interviews, the results of the university courses, quality of the Master's thesis, and the letter of intent.

A PhD program in Sweden takes four years (240 ECTS). 210 ECTS corresponds to the thesis work and 30 ECTS to courses, seminars and conferences. PhD courses are provided within the graduate training of UPSC and the KBC centre of Umeå University (www.kbc.umu.se). The PhD student is expected to participate in teaching (max 20%) which will be compensated by corresponding prolongation of the PhD position.


Information

For more information please contact Associate Professor Hannele Tuominen, Email: hannele.tuominen@umu.se.

We look forward to receiving your application!