PhD Position in Plant Genetics and Molecular Biology

The new research group of Growth Control and Cell wall Integrity (Dr. Aurélien Boisson-Dernier) invite applications for a 3-year PhD position in Plant Genetics and Molecular Biology. The position should start on March 1st 2016.

Where:
In cologne, western part of Germany, a dynamic city of 1M inhabitants at the heart of Europe and home of the largest German University with 70,000 students. Academic excellence, internationality and widely varied curricula create a vibrant and inspiring environment for students, scientists and scholars. We work at the Botanical Institute located in the new Biocenter building in the city itself (http://www.botanik.uni-koeln.de/37.html?&L=1).

Research background:
Our main scientific interest is to unravel how plant cells coordinate their growth machinery with the status of their cell wall (CW). Because the CW is constantly challenged by developmental and environmental perturbations requiring quick responses, plant cells have developed complex CW integrity (CWI) sensing mechanisms to avoid growth cessation or integrity loss. These signaling systems must be particularly robust in fast tip-growing cells, such as pollen tubes (PTs) and root hairs (RH), which have to precisely balance CW loosening and deformation locally with the production of new CW material. We and other groups showed previously that the receptor-like kinases (RLKs) of the CrRLK1Ls subfamily ANXUR1/2 (ANX1/2) and FERONIA (FER) control CWI of PTs and RHs, respectively, upstream of NADPH oxidases (Boisson-Dernier et al., Development, 2009; Miyazaki et al., Current Biology, 2009; Duan et al., PNAS, 2010; Boisson-Dernier et al., PloS Biology, 2013). While ANX1 overexpression mildly inhibits PT growth by over-secretion of CW material, pollen tubes of anx1 anx2 double mutants burst spontaneously after germination, similarly as root hairs of fer mutant. Recently, we identified and characterized the receptor-like cytoplasmic kinase MARIS (MRI) as a novel downstream component of the CrRLK1L-dependent signaling cascade that controls CW integrity in tip-growing cells (Boisson-Dernier et al., PNAS; 2015).

The recruited PhD student will help characterizing further the cell wall integrity pathway in pollen tubes and root hairs using both forward and reverse genetic approaches, as well as elucidating the function of the malectin-like domains located in the extracellular region of the CrRLK1Ls (Boisson-Dernier et al., 2011).

What we are looking for:
Applicants are expected to have completed their bachelor's and master's degrees in a life science subject, preferably with a focus on plant genetics, molecular and cell biology. Excellent grades are definitely a plus but not absolutely required. We are looking for strongly motivated enthusiast independent thinking applicants. Fluent spoken and written English language skills are essential.

How to apply:
Applications including a curriculum vitae, a motivation letter, a copy of your Bachelor-degree (or an equivalent university degree), and the names and email addresses of 1-2 referee should be sent as a single PDF to aboisson@uni-koeln.de
For more information, please do not hesitate to contact us by email. Review of applications will start immediately and will continue until the position is filled.