PhD studentship in Plant Science/Developmental Biology

PhD studentship available to work in Anthony Bishopp's lab at the University of Nottingham, UK. This is a newly established laboratory focused on understanding the genetic regulation of vascular patterning in Arabidopsis roots and transferring this to crop species. As the xylem provides the main mechanism for the long distance transport of water, we reason that manipulating xylem properties will have positive benefits for water use efficiency.

Outline

The embryonic root initially forms as a radially symmetric organ. The specification of xylem cells generates the positional information to create bilateral symmetry. This is coordinated by small differences in the spatial response patterns of two hormones, auxin and cytokinin. Using the model plant Arabidopsis, we have identified a mutually inhibitory interaction that sets vascular pattern. In this mechanism auxin directly promotes the expression of the cytokinin signalling inhibitor AHP6 and (through an unknown mechanism) cytokinin regulates the activity of the PIN class of auxin transporters.

The successful applicant will investigate the mechanism through which cytokinin regulates the activity of one of the PIN proteins, PIN7. The applicant will use a combination of genomic tools alongside a genetic screen to identify novel cytokinin-dependent factors regulating PIN7.

Details

This project will be based at the Centre for Plant Integrative Biology, a world-renowned centre for plant biology with state of the art equipment. We are taking an interdisciplinary approach to investigating root vascular patterning and combine experimental biology with mathematical modelling of vascular patterning. A suitable candidate will have good communication skills and be willing to work in an interdisciplinary team. Applicants are required to have the equivalent of a 2(i) class degree in biology (or related subject) and a desire to research plant development. Experience in some of the following areas would be desirable; plant science, molecular biology, genomics or microscopy. Good proficiency in English is required.

This studentship is available from 1 September 2013 for a period of three years with a postgraduate stipend of £13,726 per year. Due to funding restrictions this project is only available to EU/UK students. Please state to your nationality on the application (to check for eligibility).

Applications by email to anthony.bishopp@nottingham.ac.uk