

## Ph.D. student position

### Plant cell biology and land plant evolution

A funded Ph.D. student position is available at the Chair of Plant Systems Biology at the Life Sciences campus of the Technical University of Munich in the context of the DFG-funded priority programme 2237 "MadLand - Molecular Adaptation to Land: plant evolution to change."

#### Evolution of AGC1 kinase-mediated polarity modules

##### In early land plant development

We are seeking a highly motivated Ph.D. student to strengthen our very interactive and collaborative team. The specific project examines the biological role and evolution of a family of protein kinases in the liverwort *Marchantia* and the moss *Physcomitrella* that, in higher plants, are essential for the regulation of polar auxin transport and other polarity-requiring developmental processes. The project will integrate molecular biological, genetic (CRISPR/CAS9), developmental and systems biology approaches to understand the molecular determinants of plant growth by the proteins under investigation. The laboratory has expertise in a broad range of molecular, cell biological, biochemical and genetic techniques as exemplified in our previous publications. The Chair of Plant Systems Biology has direct access to modern cell biological and biochemical analyses, next generation sequencing etc. and possesses all techniques and equipment required for state-of-the-art plant research. The laboratory also has strong ties with the LMU Munich, the University of Regensburg and the Helmholtz Zentrum München through the SFB924 and is embedded in the national MadLand consortium.

**Please send a letter of motivation and a CV to:** [claus.schwechheimer@wzw.tum.de](mailto:claus.schwechheimer@wzw.tum.de)

The positions are available immediately and will remain open until filled.

#### Further information

Website of the Chair: <https://sysbiol.wzw.tum.de>

Website of MadLand: <http://madland.science>

#### Selected recent publications

Mergner J, Frejno M, ... Grill E, Schneitz K, Schwechheimer C, Kuster B. (2020) Mass-spectrometry-based draft of the Arabidopsis proteome. *Nature*. 2020 Mar;579(7799):409-414.

Marhava P, Bassukas AEL, Zourelidou M, Kolb M, Moret B, Fastner A, Schulze WX, Cattaneo P, Hammes UZ, Claus Schwechheimer\*, Christian S Hardtke\* (2018) A molecular rheostat adjusts auxin flux to promote root protophloem differentiation. *Nature* 558(7709):297-300. \*Corresponding authors.

Weller B, Zourelidou M, Frank L, Barbosa IC, Fastner A, Richter S, Jürgens G, Hammes UZ, Claus Schwechheimer (2017) Dynamic PIN-FORMED auxin efflux carrier phosphorylation at the plasma membrane controls auxin efflux-dependent growth. *Proc Natl Acad Sci USA* 114(5):E887-E896