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MAXIMILIANS-
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MÜNCHEN



Open position for the LSM call of applications

Institute: LMU Munich, Faculty of Biology, Genetics

Subject areas/Research fields:

Protein Biochemistry/ Structural Biology/ Molecular Biology/ Molecular Plant Sciences, Microbiology,
Microbiology, Cell Biology, Developmental Biology, Evo-Devo, Genetics

Keywords:

Development, Evolution, Symbiosis, Plant-Microbe interaction, transcriptional regulation,
transcriptional networks

Name of supervisor: Prof. Dr. Martin Parniske and Dr. Chloé Cathebras

Funding:

LSM-CSC/DAAD-GSSP (LSM), Application for funding by the DFG is in progress

Project title:

**Evolution of transcriptional networks shaping the legume root symbiosis with nitrogen-fixing
rhizobia**

Project description:

Crop production worldwide is sustained through nitrogen fertilizer produced via the energy-demanding Haber-Bosch process. Legumes evolved to become independent of nitrogen from the soil by engaging in symbiosis with bacteria, collectively called rhizobia, that convert atmospheric nitrogen to plant-usable ammonium. The project builds on the underlying idea that the nitrogen-fixing root nodule symbiosis of legumes experienced modifications and improvements by dynamically evolving transcriptional networks. By focusing on transcription factors and *cis*-regulatory elements on cognate promoters, the early career scientist will investigate and compare the connections between different signaling pathways involved in the evolution of the nitrogen-fixing symbiosis of legumes.

The project will require a strong knowledge base and ideally practical experience in protein biochemistry, analysis of protein-protein and protein-DNA interaction *in vitro* and transcriptome analysis *in silico*.

References:

<https://scholar.google.com/citations?user=1g3whIEAAAAJ&hl=en>

For further information, please contact:

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Research group website:

<https://www.genetik.biologie.uni-muenchen.de/research/parniske/parniske/index.html>

Apply: Please send your application through the [online portal](#) of the Graduate School Life Science Munich (LSM)