

We are looking for a

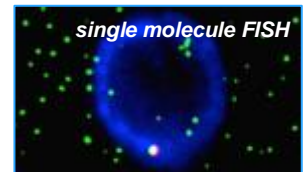
Ph.D. student

Opportunities  
for Talents

## Role of nuclear organization on plant developmental and stress responses

A funded Ph.D. student position is available in the newly established group of Stefanie Nunes Rosa at the Chair of Plant Systems Biology at the Life Sciences campus of the Technische Universität München in Freising-Weihenstephan.

Understanding the molecular mechanisms underlying the response of plants to their environment will be an important factor in providing plant breeders with tools for crop improvement in the future. The goal of our research is to understand the molecular mechanisms underpinning developmental and environmental processes in plants at the level of the higher-order chromatin organization. The amount of condensation needed for a typical genome to be fitted into an interphase nucleus indicates that there are additional levels of chromatin organization. Studies on 3D spatial locations and transcriptional competence of genes in respect to their chromosome territories have provided significant insights on the importance of this level of chromatin organization on regulation of gene expression. The project will use a combination of biochemical, genetic and state-of-the-art imaging techniques to study how different chromatin structures are formed across the nucleus in three dimensions, how they affect gene expression and how the dynamics of DNA breaks is regulated in relation to the surrounding chromatin structure in response to stress.



We are seeking a highly motivated Ph.D. student with a University degree (M.Sc. or equivalent), strong background in cell and molecular biology and good English communication skills. We will offer an excellent training in cell biological techniques as well as molecular biology and physiology approaches. Additionally, we will provide the opportunity to work on a cutting-edge project in a stimulating, diverse and international research environment.

The Chair of Plant Systems Biology has direct access to state of the art technology for cell biological and biochemical analysis, 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 Plant Bioinformatics Institute at the Helmholtz Zentrum München.

Please send a letter of motivation, a CV and contact information for two referees to: [srosa@uni-potsdam.de](mailto:srosa@uni-potsdam.de)

**Starting date: September 2017 or later. The position will remain open until filled.**

### References

Website of the Chair [Link](#)

### Selected publications

Duncan *et al.* (2016) A method for detecting single mRNA molecules in *Arabidopsis thaliana*. **Plant Methods** 12:13. [Link](#)

Rosa *et al.* (2016) Mutually exclusive sense–antisense transcription at FLC facilitates environmentally induced gene repression. **Nat. Commun.** 7: 1303. [Link](#)

Rosa *et al.* (2013) Physical clustering of FLC alleles during Polycomb-mediated epigenetic silencing in vernalization. **Genes & Development** 27, 1845-50. [Link](#)

Rosa and Shaw (2013) Insights into chromatin structure and dynamics in plants. **Biology** 2, 1378-410. [Link](#)