Postdoctoral Researcher in Systems Biology: Elucidating genome-wide protein-protein interaction networks in early land plants

Nanyang Technological University, School of Biological Sciences, Singapore

Young and research-intensive, Nanyang Technological University (NTU, Singapore) is ranked 11th globally. It is also placed 1st among the world’s best young universities. NTU offers an excellent environment for research and training of scientific skills.

Plant Systems Biology and Evolution group

The Plant Systems Biology and Evolution group, headed by Asst. Prof. Marek Albert Mutwil, studies gene networks to understand how genes work together to produce traits such as organs (e.g., roots, seeds, flowers), secondary metabolites (e.g., morphine, caffeine) and cellulosic biomass (a source of biofuels). The group uses computational and wet-lab approaches to identify and characterize relevant genes, with the ultimate aim to be able to understand, engineer and improve plant traits.

Project description

Despite their importance for human nutrition, medicine and materials, and decades of intensive research, most plant genes have no known function, which prohibits us to engineer plants to our needs. To address this, analysis of large-scale biological data by computational models is used to elucidate gene function. However, large-scale data in the form of protein-protein interaction networks is currently only available for a model Arabidopsis thaliana, which limits our understanding of gene function to only one plant. To remedy this, we combine next-generation sequencing (NGS) approaches with a yeast-two-hybrid assay to rapidly elucidate genome-wide protein-protein interaction networks. The postdoc, together with our international collaborators, will work on applying this innovative method to various plant species, with the aim to dramatically expand our knowledge of gene function in plants.

What do we ask?

We are searching for an excellent, highly motivated candidate with strong working knowledge of the yeast-two-hybrid system and molecular biology. He/she should have a Ph.D. degree in molecular biology (or related field), strong troubleshooting skills and a publication record in peer-reviewed journals. Candidates are expected to communicate efficiently in English in an interdisciplinary team of biochemists, biologists, and computational experts. Knowledge of programming (preferably in Python) is an advantage.

What do we offer?

An attractive remuneration package, holiday pay, end-of-year bonus, and insurance.

Why Singapore?

Singapore is a city-state with one of the highest standards of living in the world seeking to become an international hub for the biomedical and life sciences. Singapore is a vibrant and safe tropical city, with rich Asian heritage and modern style of living, an ideal gateway to explore Asia. With our good base of
life sciences players, highly skilled and educated workforce, excellent communication systems, good industry infrastructure and a stable government, Singapore offers an exceptional professional and personal experience.

**Additional information:**
For more information, please contact Asst. Prof. Marek Mutwil, e-mail: mutwil@mpimp-golm.mpg.de.

**Applying for the job:**
Applications should include a motivation letter, curriculum vitae, and three contacts for reference. Only shortlisted candidates will be contacted.