A Post Doc Position (f/m/d) is to be filled immediately in the Institute of **Synthetic Biology (Prof. Dr. Matias Zurbriggen)** at the CEPLAS-Cluster of Excellence on Plant Science and the Heinrich-Heine-University Düsseldorf, Germany, in the framework of a Human Frontiers Science Programm (HFSP) - in collaboration with researchers of the ENS-Lyon, FR; John Innes Centre, Norwich, UK; and the UC Davis, US. The post-doc to be hired will work on the model moss *Physcomitrium patens* to explore the fundamental question of how phyllotaxis emerges from biochemical and physical signals at single cell-resolution, using approaches in developmental genetics, optical live imaging, synthetic biology, and optogenetics.

We are looking for a highly motivated and self-driven applicant holding a PhD in Biology, Biochemistry, Biotechnology, or related fields, and a strong background in plant cell culture, molecular plant sciences, biochemistry, quantitative biology, synthetic biology, or a related discipline, with laboratory experience and skills for teamwork. The Zurbriggen lab focuses on developing and implementing synthetic biology tools and approaches for the quantitative understanding of metabolic and signaling pathways at high spatiotemporal resolution. This includes the engineering of optogenetic systems to control cellular processes and the design of reconstruction strategies using orthogonal cellular systems.

For further details please visit: http://synthetic-biology.hhu.de/en.html

Research project

Synthetic biology strategies provide alternative theoretical-experimental resources that revolutionize the way we can study biological systems, overcoming current limitations and yielding quantitative assets. However, their implementation in plant biology lags behind. In this project, we will implement a synthetic biology approach to obtain a quantitative understanding of mechanistic and regulatory principles involved in how phyllotaxis in plants emerges from biochemical and physical signals at single cell-resolution. For this, we will use the model organism *Physcomitrium patens* and implement approaches of developmental genetics, optical live imaging, synthetic biology, and optogenetics. The implementation of numerous synthetic biology tools, optogenetics, and advanced microscopy techniques available in the lab will yield quantitative data which will be used to obtain a structural and functional description of the networks.

We are looking for a highly motivated and self-driven applicants holding a Phd in Biology, Biochemistry, Biotechnology or related fields, and a strong background in developmental biology, molecular plant sciences, biochemistry, quantitative biology, synthetic biology or a related discipline, with laboratory experience and skills for teamwork. Proven advanced English skills are required.

The candidate will be working in a creative and international environment embedded in an experienced transdisciplinary synthetic biology team working on microorganisms, plant and animal systems. The Institute has all required infrastructure and equipment, within the new biology building complex, and in close interaction with the Center of Advanced Imaging, Structural Biology and Metabolomics. The candidate will deeply integrate into a joint curriculum within the host institute and participate in seminars, scientific discussions, teaching activities and infrastructure-related tasks. Preference will be given to handicapped applicants with equal qualification. The 3-year positions will be based on salary grade E 13 (100%) according to the Collective Agreement for the Civil Service (TVöD). The position is available immediately, the starting date is negotiable.

If you are interested, please send your application including a CV, names and email addresses of two references, and a one-page motivation letter as a single pdf document (<5 MB) to Prof. Dr. Matias Zurbriggen (synbio@hhu.de).