1 Postdoctoral and 1 PhD Position on Network Structures in Multitrophic Plant-Microbe and Microbe-Microbe Interactions

The Max Planck Institute for Plant Breeding Research (MPIPZ) in Cologne, Germany invites applications for a postdoctoral position and a PhD position in the field of molecular plant-microbe interactions and computational biology. The postdoctoral position is available in the Max Planck Research Group on Fungal Biodiversity headed by Dr Eric Kemen. The PhD position is a shared project between the Max Planck Research Group on Resistance Pathway Dynamics in Plant Immunity headed by Dr Jane Parker and the group of Dr Eric Kemen.

Background / Objectives
Our focus is to unravel mechanisms in plant-microbe and microbe-microbe interactions that shape microbial community networks. For this, we work on the model plant *Arabidopsis thaliana* and have collected samples over several years from field plantings and wild populations. We have accessed a significant number of microbial isolates covering bacteria, fungi and protists. Using various high throughput sequencing techniques, we are characterizing microbial diversity and microbial functions and using statistical approaches to infer community structures. Models built from these data are used to generate hypothesis which are tested using reconstitution biology in gnotobiotic systems to reconstruct microbial networks in the laboratory. These approaches are combined with plant genetics to identify molecular mechanisms relevant for evolving and structuring microbial communities on plants.

The selected candidates will use a combination of molecular biology, microbiology, genetics and computational biology. The candidates will be involved in sampling trips in the field, processing of samples for sequencing and computational data analyses, as well as microbial reconstitution assays. Methods will be adapted and developed according to needs for rigorously testing inferred hypothesis.

Requirements
The ideal applicant will have some background in bioinformatics and molecular biology / microbiology. We seek highly motivated applicants that have extensive experience in at least one of these fields and basic knowledge in the other. Candidates with knowledge of a scripting language, experience in R and statistics background are preferred. A formal requirement for the postdoctoral position is a PhD.

Payment / Position
The post-doctoral position for this project is available from October 01, 2016 for an initial period of one year and renewable depending on performance. The PhD position is available immediately. Salary and benefits are commensurate with public service organization rules (TVöD). The Max Planck Society is an equal opportunity employer. Their goal is to enhance the percentage of women where they are underrepresented. Women, therefore, are especially
encouraged to apply. The Society is committed to employing more handicapped people. Applications of handicapped people are particularly welcome.

**Application**
For questions concerning the PhD project please contact Prof Dr Jane Parker (parker@mpipz.mpg.de) for postdoctoral and / or PhD project please contact Dr Eric Kemen (kemen@mpipz.mpg.de).

Selected candidates will be invited for interview toward the end of September, 2016.

Please email an application letter clearly stating which position you are applying for, including curriculum vitae, list of publications, a statement of research interests, and arrange for minimum two academic letters of recommendation to be sent by email no later than September 16th, 2016 to:

Jutta Weinand
Department of Plant Microbe Interactions
Max Planck Institute for Plant Breeding Research
Carl von Linné Weg 10
50829 Köln
Phone: +49-(0)221-5062-352
Fax: +49-(0)221-5062-353
E-mail: weinand@mpipz.mpg.de