



Pecinka lab



**Max Planck Institute for Plant Breeding Research (MPIPZ)
Cologne, Germany**

**Post-doc position: Analysis of two Australian crucifers as
models for comparative -omics**

A 2 year post-doc position is available at the MPIPZ in the group of Genome and Epigenome Evolution (http://pecinka_lab.openwetware.org/).

Exploring diversity of non-model species may allow understanding various phenomena beyond a level possible with the current models. We selected two Australian species showing unique features closely related to the model plant *A. thaliana* as models for comparative adaptomics and epigenomics. The desert species *Stenopetalum nutans* showed a remarkable basal and acquired thermo-tolerance. A preliminary RNA-sequencing analysis indicated a faster response of *S. nutans* to heat stimulus and potentially a more efficient water management. The post-doc will clone the candidate genes and complement and analyze *A. thaliana* mutants. Since *S. nutans* has a mesopolyploid genome, the contribution of individual gene copies towards adaptation to heat stress will be tested. Polyploidization potentially played a role in repeat amplification and epigenetic variation observed in *Ballantiania antipoda* where half of the chromosome arms carry peculiar heterochromatic segments (HSs). The principal component of HSs is a short repeat occupying ~6.5% of the genome in >170,000 copies. This repeat is free of cytosines in the symmetrical context and appears free of DNA methylation by immuno-staining. Nevertheless, it contains the repressive histone mark H3K9me2, challenging the current model of heterochromatin establishment in plants. The post-doc will perform in depth characterization of chromatin at this repeat, its localization with respect to genes and the influence on nearby gene expression. The transfer into the *A. thaliana* genome will allow monitoring its chromatin and the copy number variation in mutants compromised in epigenetic control and genome stability.

We seek a highly motivated candidate with a PhD in Life Sciences and at least one first author publication in a peer-reviewed journal. Bioinformatic experience is an advantage. The expected starting date is early 2013. The Max Planck Society (MPG) is committed to employing more handicapped individuals and encourages them to apply. The MPG seeks to increase the number of women where they are underrepresented and therefore encourages women to apply. The search will continue until a suitable candidate is found.

Please submit your application including a CV and contact details for two referees to: pecinka@mpipz.mpg.de