The Max-Planck-Institute of Molecular Plant Physiology in Potsdam invites applications for a

**PhD Studentship**

(code 11/17)

to study the role of mitochondrial sHSPs whose expression parallels that of HSP21 during the thermomemory phase, for thermopriming and thermomemory in Arabidopsis. The successful applicant will generate transgenic lines with enhanced or suppressed expression of mitochondrial sHSPs and characterise their thermomemory behaviour. Additionally, we aim to assess their chaperone activity and identify their targets *in vivo* upon a priming treatment. We also aim to identify their upstream transcriptional regulators, assuming those to be early regulators of priming and memory. The research involves cutting-edge molecular biological and genomics methods.

Experimental evidence indicates the existence of a molecular ‘memory’ that enables plants to withstand severe/lethal stress better if previously confronted with moderate stress (Hilker et al., 2015, *Biol. Rev. Camb. Philos. Soc*). However, the mechanistic basis for this memory is not well defined. Recently we demonstrated that the plastid metalloprotease FtsH6 and small heat shock protein HSP21 jointly regulate thermomemory in the model plant *Arabidopsis thaliana* (Sedaghatmehr et al., 2016, *Nat. Commun, in press*). HSP21, a plastidial small heat shock protein, plays a crucial role for extended thermomemory in Arabidopsis. The ability to maintain high levels of HSP21 protein after priming determines the duration of memory in genetically modified plants as well as in natural accessions of Arabidopsis with contrasting thermomemory capacity. The abundance of HSP21 during the memory phase is negatively regulated by heat-induced plastid-localized metalloprotease FtsH6.

The successful candidate will conduct experimental work in a stimulating and international research environment. The candidate must hold a MSc degree (or equivalent) in Biology, Biochemistry, Molecular Biology, or similar. Research experience in plant response to abiotic stress, transcription factors and heat shock proteins is required. We are looking for a highly motivated new team member with excellent academic record, strong motivation for research in plant biology, very good English skills in speaking and writing, and a strong commitment to cooperate. The research will be performed within the frame of the Cooperative Research Center (CRC) 973 – Priming and Memory of Organismic Responses to Stress (http://www.sfb973.de/).

Applicants should submit a letter of motivation, a resume with publication list, and names and email addresses of three references as a single PDF-document by e-mail to

**Max-Planck-Institut für Molekulare Pflanzenphysiologie**  
**Personalverwaltung**  
**Wissenschaftspark Golm, Am Mühlenberg 1, 14476 Potsdam**

or by email to Dr Salma Balazadeh balazadeh@mpimp-golm.mpg.de