

IOWA STATE UNIVERSITY

OF SCIENCE AND TECHNOLOGY

Post-doctoral position in autophagy regulation in Arabidopsis

An NSF-funded postdoctoral position is available in the labs of Diane Bassham and Justin Walley at Iowa State University to study the role of protein kinase cascades and transcription factors in the regulation of autophagy in Arabidopsis in response to environmental stress.

Autophagy is a critical molecular recycling process that allows organisms to survive during times of stress. When autophagy is activated, cell components are degraded, recycled, and reused by the cell to maintain cellular viability. This provides nutrients for survival of periods of starvation, and removes damaged molecules that otherwise might be toxic. Activation of autophagy is controlled post-translationally via protein kinases that act in stress signaling pathways, and also transcriptionally by a suite of transcription factors that upregulate the expression of autophagy genes. The role of the successful post-doctoral candidate will be to assess the mechanisms by which protein kinases regulate autophagy under different conditions and to determine the function of transcription factors that control autophagy. This will be accomplished by genetic approaches to assess function in autophagy and epistasis among factors under different stress conditions, mutation of potential phosphorylation sites, phosphoproteomic analysis, and finally the construction of regulatory networks that integrate both phosphorylation and transcriptional activation events.

A PhD in a biological science or related discipline is required. The ideal candidate will have experience in plant molecular or cell biology, experience with proteomics and bioinformatics, an excellent publication record in international journals, and no more than 3 years of prior postdoctoral experience. The initial appointment is for 1 year, with the possibility of extension for an additional 2 years by mutual agreement. To apply, submit a Curriculum Vitae, cover letter, and contact information for three references at the following site:

https://isu.wd1.myworkdayjobs.com/IowaStateJobs/job/Ames-IA/Post-Doc-Research-Associate--Plant-Biology_R3871