UNIVERSITY OF BIRMINGHAM

School of Biosciences

Daniel J. Gibbs
College of Life and Environmental Sciences.

Direct Tel: +44(0)121 414 5309

Email: d.gibbs@bham.ac.uk

3 year BBSRC-funded postdoctoral position

"N-terminal acetylation as a signal for protein degradation controlling plant growth and stress responses"

The N-end rule pathway of targeted proteolysis is an ancient and conserved component of the ubiquitin proteasome system that degrades proteins based on the nature of their N-terminus (Gibbs et al., 2014. *Trends in Cell Biology*). This pathway has emerged as a critical regulator of development and environmental responses in eukaryotes, and in plants is important for oxygen and nitric oxide sensing (Gibbs et al., 2011. *Nature*; Gibbs et al., 2014 *Molecular Cell*). Recent studies in yeast and mammals have identified a novel branch of the pathway that specifically degrades Nt-acetylated proteins - the Ac/N-end rule pathway. This pathway regulates protein-complex homeostasis, peptide quality control and signal transduction (Hwang et al., 2010 *Science*, Shemorry et al 2013 *Molecular Cell*; Park et al., 2015. *Science*). The aim of this research project is to investigate the presence and function of this novel pathway for proteolysis in *Arabidopsis*, with a key focus on characterising its enzymatic components and physiological targets using genetic, molecular and proteomic approaches.

References:

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Shemorry et al (2013) Control of protein quality and stoichiometries by N-terminal acetylation and the N-end rule pathway. Molecular Cell. 50(4):540-51

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