

Can moss read nonsense? Exploring gene regulation by nonsense-mediated decay in *Physcomitrella*

James Lloyd^{1*}, Yasuko Kamisugi¹, Michael Deeks¹, Luis Arciga-Reyes¹, Andrew Cuming¹ and Brendan Davies¹

¹University of Leeds, Leeds, UK

*bsjpb1@leeds.ac.uk

Organisms control gene expression in a number of diverse ways to coordinate growth and response to environmental stimuli. In eukaryotes nonsense-mediated mRNA decay (NMD) is a quality control mechanism degrading mRNAs that could produce truncated proteins, however, it also plays a role in regulating gene expression of functional transcripts. Mutants in *Arabidopsis* show developmental defects and are more resistant to the bacterial pathogen *Pseudomonas syringae*. Here work on establishing the moss *Physcomitrella patens* as a model to study NMD in plants is presented. Identification of putative NMD effectors in the moss genome will be discussed. Characterisation of a knock out strain for the exon-junction complex component Mago nashi, which in other organisms is important to NMD and mRNA transport will be presented.