

Evolution of Host Specificity in *Albugo candida* - Brassicaceae Pathosystem

Lead Supervisor: Dr Volkan Cevik, Department of Biology & Biochemistry

Project description:

A multi-level evolutionary arms race determines the outcome of an interaction between a host plant and an invading pathogen. Successful pathogens evolved strategies to suppress plant immunity enabling host colonisation. However, it is yet to be fully understood how diverse plant pathogens evolved distinct strategies to impose immune suppression on specific hosts to cause disease. To provide novel insights, we will study the evolution of host specificity in *Albugo candida* that causes white rust disease in Brassicaceae. *A. candida* is a biotrophic parasite with many physiological races specializing on distinct host species, and imposes an extremely immuno-compromised state of the host plant. This project will determine molecular mechanisms leading to host immuno-suppression mediated by this pathogen by exploring chromatin profiles of host plant genes mainly involved in immunity via chromatin immunoprecipitation. In addition, transcriptomic and bioinformatic analyses will be carried out to determine the transcriptional changes occurred simultaneously in the host plant and the pathogen. The gene expression data will then be used for novel gene regulatory network analyses to determine how changes in gene expression in the pathogen affect gene expression/pathways in the host plant leading to host immune-suppression.

Candidate:

Applicants should hold, or expect to receive, a First Class or high Upper Second Class UK Honours degree (or the equivalent qualification gained outside the UK) in a relevant subject. A master's level qualification would also be advantageous.

Applications:

Informal enquiries should be directed to Dr Volkan Cevik, vc357@bath.ac.uk.

Formal applications should be made via the University of Bath's [online application form](#).

On the application form, please ensure that you quote 'Evolution Education Trust' in the Finance section and the supervisor's name and project title in the 'Your research interests' section. Should you wish to be considered for more than project, quote the projects in order of preference and upload a separate personal statement relevant to each one.

Please see our Doctoral College website for [more information on how to apply](#) for a PhD at Bath.

Application deadline: 30 April 2019.

Interviews will take place in Bath on 14 June 2019.

Anticipated start date: 30 September 2019.