

Department of Veterinary Medicine

Available PhD Project:

Supervisor: Professor Julian Parkhill

Supervisor profile page: [Professor Julian Parkhill FRS FMedSci | Department of Veterinary Medicine \(cam.ac.uk\)](#)

Project Title: Expanding phylogenetic reconstruction in bacteria

Description:

Bacterial phylogenies are generally built using single nucleotide polymorphisms (SNPs), as their behaviour is well-studied, and they usually produce robust phylogenetic trees. However, many other forms of genetic variation affect bacterial genomes, including small insertions/deletions, rearrangements, recombination, and gene acquisition/loss. Including these in phylogenetic reconstruction could improve the resolution of these trees, and provide clearer understanding of the contribution of these processes to bacterial evolution. The project will involve large-scale phylogenetic reconstruction and modelling of the rates of these changes in different bacterial lineages over time, in order to incorporate them into phylogenetic reconstruction methods. For further information about the project, please contact Prof Julian Parkhill: jp369@cam.ac.uk

Funding: Not funded - applicants are invited to apply before the Cambridge University Postgraduate Funding competition deadline in order to be nominated for suitable scholarships.

How to apply: Contact the Supervisor to discuss the project before submitting an official application.

More details on the application process here:

[How to apply — Department of Veterinary Medicine \(cam.ac.uk\)](#)