UNIVERSITY OF CAMBRIDGE
Department of Veterinary Medicine

Department of Veterinary Medicine: PhD project

Project Title: Expanding phylogenetic reconstruction in bacteria

Supervisor: Professor Julian Parkhill

Supervisor profile page: https://www.vet.cam.ac.uk/staff/professor-julian-parkhill-frs-fmedsci

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 Professor Julian Parkhill

Funding: Funding for this project covers project costs only. Funding for fees and maintenance are not included. Students that are self-funded or intending to apply for the University of Cambridge Postgraduate Funding competition are encouraged to apply.

How to apply:

Contact the Supervisor (jp369@cam.ac.uk) to discuss the project before submitting an official application.

More here on application process here: PhD in Biological Sciences at the Department of Veterinary Medicine | Postgraduate Admissions (cam.ac.uk)