



PhD Studentship

Antibiotic resistance plasmids and their contribution to bacterial fitness and virulence

A joint studentship established between Cardiff University and the Veterinary Laboratories Agency

The injudicious use of antibiotics in both human health and animal production has been cited as one of the major causes of the rapid emergence of antibiotic resistance, the mechanisms for which include dynamic mobilisation of resistance genes and mutation. Over and above resistance, recent studies in our laboratories have demonstrated that certain resistance plasmids contribute to the fitness of the host bacterium and increased virulence of pathogenic bacteria. A key aim of this study is to interrogate the fitness and virulence aspects of a number of selected plasmids persistently associated with pathogenic bacteria in both animal and human hosts. The model systems chosen for study will be specific serotypes of *Escherichia coli* and *Salmonella enterica*. A wide variety of approaches will be used including plasmid sequence analysis, targeted plasmid mutagenesis, proteomic analysis, phenotype array analysis and surrogate virulence models including 3D cell culture and *in vitro* organ culture. The study will be a two centre study at Cardiff University and the Veterinary Laboratories Agency in Surrey.

Interested applicants should forward electronically their CV and the names of at least two academic referees to Prof Tim Walsh and Prof Martin Woodward (walshtr@Cardiff.ac.uk & m.j.woodward@vla.defra.gsi.gov.uk)

The closing date for applications is 17 July 2009.