

Department of Veterinary Medicine: MPhil Project

Project Title: Development of novel diagnostic assays using plasmon resonance imaging

Supervisor: Dr Tim Williams

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Project details: Blood analysis provides clinicians with invaluable information during diagnostic investigation and biomarkers frequently illuminate the path that should be followed to reach definitive diagnosis. Point-of-care analysers facilitate prompt patient workup and intervention without the delays encountered with shipment of samples to remote laboratories. The development of point-of-care biomarker assays in the field of veterinary medicine, therefore, is of considerable advantage to clinicians and patients alike. Particular benefit can be realised using multiplex assays that quantify the concentrations of multiple diagnostic biomarkers simultaneously.

Surface plasmon resonance is a phenomenon in which refraction of light by a transparent structure is influenced by the presence of molecules anchored to its surface. This can be used as a mode of detection and quantification of large molecular analytes and is an established technology in biomolecular analysis.

The project is designed to create novel multiplex biomolecular assays for clinical investigation of animal species that can be validated by comparison of analytical results generated by reference laboratories. Initial work will utilise residual blood samples of canine patients undergoing clinical investigation in the Queen's Veterinary School Hospital at Cambridge. The project is supported by an industrial partner and the successful candidate will receive training in the use of a novel surface plasmon resonance analyser that has been developed for clinical use.

Funding: This is a funded project of one year duration, covering stipend and fees at the home rate. Applications are open to all students eligible for home fees with preference given to graduates of veterinary medicine or biomedical sciences.

How to apply: Contact can be made with the Supervisor (tlw27@cam.ac.uk) for additional information about the project before submitting an official application. Further information about post graduate study at Cambridge can be found online [MPhil in Veterinary Science | Postgraduate Study \(cam.ac.uk\)](#).