



ROLE PROFILE

Job Title: Research Associate/Fellow

School/Department: School of Veterinary Medicine and Science

Job Family and Level: Research & Teaching Level 4, Training Grade 4.

Contract Status: This post will be offered on a fixed-term contract until 31 October 2021

Hours of Work: Full-time (36.25 hours per week)

Location: Sutton Bonington Campus

Reporting to: Dr Sharon Egan

Project: *Disease intervention targets for porcine Streptococcus suis infections in Vietnam*

	Main Responsibilities	% time per year
1.	To undertake research at the highest level in accordance with the aims and objectives of the project, in particular to characterise a range of bacterial genes/proteins using both molecular and bioinformatic analysis techniques. In addition, to generate and evaluate a range of reagents such as recombinant bacterial proteins and antiserum for the identification of potential vaccine and diagnostic targets. Where necessary, to develop alternative techniques and protocols for identification and generation of individual knockout bacterial mutants for gene analysis studies.	70%
2.	To prepare and present progress reports, assist with preparation of scientific publications, assist with the planning and training for workshop/outreach activities including sessions with collaborators in Vietnam and the funding body in Canada and to attend/present research at National, European and International conference meetings where appropriate.	10%
3.	To contribute to research supervision and training of undergraduates and postgraduates and to contribute to the laboratory management of the research group in terms of protocol development, laboratory maintenance/stocking and associated training/safety paperwork.	10%
4.	To operate as an effective team player within the group, contribute to group meetings and contribute to any other collaborative research work suitable to the grade.	5%
5.	To update professional skills as appropriate and relevant in support of research excellence.	5%

Knowledge, Skills, Qualifications & Experience

	Essential	Desirable
Qualifications/ Education	<ul style="list-style-type: none"> A first or upper-second class honours degree. PhD awarded (or close to completion) with experience in molecular biology, microbiology or bioinformatics related disciplines. 	
Skills/Training	<ul style="list-style-type: none"> Standard molecular, bioinformatics and microbiology techniques. Excellent command of the English language, spoken and written and good communication skills. Ability to work independently and as part of a team. 	<ul style="list-style-type: none"> Cell culture experience. Bioinformatic analysis of next-generation sequencing outputs. General microbiology experience.

	<ul style="list-style-type: none"> • Excellent IT, organisational and record keeping skills. • Ability to build relationships and effectively communicate and aims of the project to academic collaborators, non-scientific audiences or academics from other scientific disciplines. 	
Experience and Personal Attributes	<ul style="list-style-type: none"> • Must have experience in general molecular biology techniques such as PCR, Western blotting, DNA manipulation and base-level bioinformatic analysis of gene variation. • Ability to work to deadlines, prioritise tasks and maintain focus. 	<ul style="list-style-type: none"> • Relevant publications in high impact peer-reviewed journals. • Experience of working with bacteria. • Evidence of participation in collaborative projects.
Statutory/Legal	<ul style="list-style-type: none"> • Satisfactory basis disclosure obtained from the Disclosure and Barring Service. • Ability to travel. 	<ul style="list-style-type: none"> •

Additional Information

This post is funded by the International Development Research Centre and involves the development of *Streptococcus suis* recombinant vaccines for control of disease in pigs.

Streptococcus suis (*S. suis*) is responsible for significant mortality and morbidity in pig production worldwide, affecting economics, food security and animal welfare within commercial and small scale farming. It is also an emerging zoonotic pathogen, responsible for 40% of human bacterial meningitis cases in Vietnam. The OIE has identified *S. suis* as a priority disease and the development of effective vaccines could significantly reduce the use of antimicrobials in animals and decrease pressure on generation of antimicrobial resistance. There is currently no commercial vaccine available for *S. suis* and one of the major barriers to commercialisation is the lack of protection induced by experimental vaccines against more than one bacterial serotype.

This position will involve development and screening of *S. suis* bacterial mutant libraries using our transposon insertion sequencing strategy called PIMMS (Pragmatic Insertional Mutagenesis Mapping System), to identify bacterial genes and proteins required for survival and proliferation during colonisation and disease. This will involve simultaneous sequencing of the insertion position of a disruptive transposon within the bacterial genomes of a library of bacterial mutants before and after exposure to conditions relevant to the disease. In this case, growth or survival in whole blood can be used as a condition to identify bacterial proteins essential for infection in the host, given *S. suis* produces a bacteraemia in pigs as part of its pathogenesis.

Identified genes and proteins will be investigated as potential vaccine candidates through the comparison of knock-out bacterial mutants and growth inhibition assays, with our collaborators at the National Institute of Veterinary Research in Vietnam. The post will involve a combination of both laboratory based microbiology and molecular biology based analysis, alongside genome bioinformatics analysis. In addition, the successful applicant will also be involved in developing and delivering training and workshop programs within the UK and Vietnam and as such excellent presentation and communication skills are essential.

The School of Veterinary Medicine and Science

Nottingham Vet School was the first brand new, purpose-built veterinary school in the UK for over 50 years and our intent to make significant leading contributions to both veterinary research and teaching within the context of valid relevance and application to the wider veterinary profession. Research is central to the activities of the School, both in terms of maintaining ourselves at the forefront of national and international efforts in veterinary medicine but also as an integral part of the training and education for undergraduate and postgraduate students.

Further information about the School of Veterinary Medicine and Science is available at <http://www.nottingham.ac.uk/vet/index.aspx>

Because of the nature of the work for which you are applying, this post is exempted from the provisions of Section 4 (2) of the Rehabilitation of Offenders Act 1974 by virtue of the Rehabilitation of Offenders Act 1974 (Exceptions) Order 1975.

Candidates are therefore, not entitled to withhold information about convictions, which for other purposes are “spent” under the provisions of the Act, and in the event of employment any failure to disclose such convictions could result in dismissal or disciplinary action by the University. Any information given will be strictly confidential and will be considered only in relation to an application for positions to which the Order applies.



The University of Nottingham strongly endorses Athena SWAN principles, with commitment from all levels of the organisation in furthering women's careers. It is our mission to ensure equal opportunity, best working practices and fair policies for all.