**JOB DESCRIPTION**

This form summarises the purpose of the job and lists its key tasks

It may be varied from time to time at the discretion of the College in consultation with the postholder

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| **Job Title: Post-doctoral Research Assistant (PDRA)**  | **Job ref no: PPS-0230-23** |
| **Grade: 6** | **Department: PPS** |
| **Accountable to: Prof Dirk Werling/Dr Rob Noad** | **Responsible for: N/A** |

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| **Job summary:**This is a full-time Post-doctoral Research Assistant position, funded through the BBSRC Endemic Disease call for 3 years.*Mycoplasma hyopneumoniae* is the primary cause of enzootic pneumonia, a worldwide respiratory disease of pigs that has a major impact on the growth and welfare of animals. Despite its economic importance, the pathogen itself is hard to culture *in vitro* and difficult to manipulate genetically. This study will build on previous world-leading BBSRC funded research which provided preliminary data identifying genes non-essential for growth of the bacteria *in vitro* but essential *in vivo*. The study will focus on the identification of strains with potential to be the basis of improved vaccines. We will confirm whether attenuated strains are able to colonise the lungs of pigs and, when they are present whether they are able to cause lesions using a modified TraDis approach. This proposal will also develop a toolkit of reagents and methods suitable for the modification of strains of the bacteria isolated from UK pigs to ensure that vaccine strains are a close match for those currently circulating in animals. Major outputs will include identification of genes which result in attenuation of the bacteria in pigs and an assessment of the efficacy and safety of modified M.hyop strains as vaccine candidates, with the ultimate aim of bridging the gap between tool development and practical use in the form of a proof-of-concept challenge study. The study addresses an unmet need in the swine and pharmaceutical industries for improved immunogens for M.hyop and better methods to produce attenuated strains of bacteria suitable for further development.The postholder will report to Professor Dirk Werling and Dr Rob Noad and will be based at the RVC Hawkshead campus. They will be expected to work to develop new bacterial mutants and to analyse mutants from an existing library. There will be some work with pigs as part of the project and the postholder will be involved in the analysis of samples from vaccinated animals. |
| **Competency: Analysis and Research****Key tasks:**• Objective 1: Test whether transposon strains lost during passage through pigs can result in lung lesions.• Objective 2: Establish the targeted deletion of selected genes in M.hyopneumoniae.• Objective 3: Establish a gene knock out toolkit that works with UK field strains of M.hyopneumoniae.• Objective 4: Test if attenuated strains can provide protective immunity in pigs. |
| **Competency: Communication****Key tasks:*** Communicate effectively and enthusiastically with all relevant team members (technicians, PhD students etc)
* Attend regular meetings with the project supervisors and commercial partners
* Participate in College activities such as seminar series, training workshops, lab meetings and journal clubs
* Supervise and train undergraduate/masters students working in the laboratory in techniques relevant to their project work
* Communicate results in oral and written format to a range of audiences with different levels of knowledge
* Take advantage of public engagement opportunities where available
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| **Competency: Knowledge and Experience****Key tasks:** * To undertake personal continuing professional development in order to keep abreast of current best practice in research.
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| **Competency: Liaison and Networking****Key tasks:** * Attend internal research meetings and seminars
* Attend international conferences to network with scientists working in the fields of mycobacterial diseases and porcine diseases
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| **Competency: Work Environment****Key tasks:*** To assist in maintaining a safe working environment by:
	+ Attending basic and specialist health and safety training, as required
	+ Following local procedures for safe working practices and the College’s Health and Safety Policy
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| * **Flexibility:** The post holder may be required to perform non-specified, complementary work in response to the changing needs of the position.
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