

**MRI, MOREDUN RESEARCH INSTITUTE AND FACILITIES WITHIN THE
PENTLANDS SCIENCE PARK**

(UK)

Research topics:	<p>The main research areas dealt with by the infrastructure/installation are:</p> <ul style="list-style-type: none">• Development of novel and improved vaccines for livestock species, focusing of endemic parasitic, viral and bacterial diseases• Development of new diagnostics tests• Development of novel disease control methods• Development of novel immunological tools in support of livestock infectious disease research• Underpinned by expertise in livestock immunology, immunogenetics, virology, parasitology, diagnostics and bacteriology <p>Selected references:</p> <p>Nisbet AJ, McNeilly TN, Wildblood LA, Morrison AA, Bartley DJ, Bartley Y, Longhi C, McKendrick IJ, Palarea-Albaladejo J, Matthews JB (2013). Successful immunization against a parasitic nematode by vaccination with recombinant proteins. <i>Vaccine</i> 37: 4017-4023.</p> <p>Burgess ST, Nunn F, Nath M, Frew D, Wells B, Marr EJ, Huntley JF, McNeilly TN, Nisbet AJ (2016). A recombinant subunit vaccine for the control of ovine psoroptic mange (sheep scab). <i>Vet Res</i> 47: 26.</p> <p>Bryant JM, Thibault VC, Smith DGE, McLuckie J, Heron I, Sevilla, IA, Biet F, Harris S, Maskell D, Bentley SD, Parkhill J, Stevenson K (2016). Phylogenomic exploration of the relationships between strains of <i>Mycobacterium avium</i></p>
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subspecies paratuberculosis. BMC Genomics 17:79.

Corbishley A, Connelley TK, Wolfson EB, Ballingall K, E Beckett EA, Gally DL, McNeilly TN (2016) Identification of epitopes recognized by mucosal CD4+ T-cell populations from cattle experimentally colonized with Escherichia coli O157:H7 Vet Res 47: 90.

Bartley PM, Katzer F, Rocchi MS, Maley SW, Benavides SJ, Nath M, Pang Y, Canton G, Thomson J, Chianini F, Innes EA. Development of maternal and foetal immune responses in cattle following experimental challenge with Neospora caninum at day 210 of gestation. Veterinary Research (2013) 44: 91.

Ballingall KT, Steele P, Lantier I, Cotelli M, Todd H, Lopez G, Martin E, Lantier F (2015) An ancient inter-locus recombination increases class II MHC DQA diversity in sheep and other bovidae. Animal Genetics 46: 333-336.

Zadoks RN, Tassi R, Martin M, Holopainen J, McCallum S, Gibbons J, Ballingall KT (2014) Comparison of Bacteriological Culture and PCR for Detection of Bacteria in Ovine Milk – Sheep are Not Small Cows J. Dairy Sci 97: 1-8.

Entrican G, Lunney JK, Rutten VP, Baldwin CL (2009). A current perspective on availability of tools, resources and networks for veterinary immunology. Vet Immunol Immunopathol 128: 24-29.

Ngo TPH, Bartie K, Thompson KD, Verner-Jeffreys DW, Hoare R, Adams A (2017). Genetic and serological diversity of Flavobacterium psychrophilum isolates from salmonids in United Kingdom. Veterinary Microbiology 201:216-224.

Wheelhouse N, Wattegedera S, Stanton J, Maley S, Watson D, Jepson C, Deane D, Buxton D, Longbottom D, Baszler T, Entrican G (2009) Ovine

	<p>trophoblast is a primary source of TNFalpha during Chlamydomphila abortus infection. J Reprod Immunol 80:49-56.</p> <p>Martineau HM, Cousens C, Imlach S, Dagleish MP, Griffiths DJ (2011). Jaagsiekte sheep retrovirus infects multiple cell types in the ovine lung. J.Virol 85: 3341-55.</p>
<p>Activities and services currently offered by the infrastructure/installation:</p>	<ul style="list-style-type: none"> • Expertise in livestock Immunology and Immunogenetics • Expertise in livestock protozoan and helminth parasitology • Expertise in endemic livestock viral and bacterial pathogens of sheep, cattle, swine, poultry and aquatic farmed species • Supported by purpose-built large and small animal facilities with associated infrastructure and modern well-equipped laboratory facilities
<p>Description of the access to be provided under VetBioNet TNA call:</p>	<ul style="list-style-type: none"> • Access to purpose-built, large and small animal care, handling and laboratory facilities including large animal BSL2 and 3 laboratory infrastructures on the Pentlands Science Park Site. • Linked laboratory facilities specializing in molecular biology, immunology, parasitology, bacteriology and virology. • Expertise and support from senior research scientists and support staff with associated bioinformatics, computing and library facilities. • Technical support and consumables will also be provided per unit of access. <p>Details on the access offered by the infrastructure/installation under VetBioNet TNA calls:</p> <p>One access period of one month per year for five years.</p>

Animal species/pathogens that can be worked on in this infrastructure/installation:	Many of the common endemic viral, bacterial and parasitic diseases of most farmed livestock species in the UK (except for live cultures of <i>Mycobacterium bovis</i>).
Travel and subsistence costs:	Travel and accommodation costs may be reimbursed on arrival on submission of receipts. A per diem will be provided to cover daily travel, meals and other expenses.
Infrastructure/installation ethical rules:	All experimentation involving animals is strictly controlled by UK government Home Office regulations. This includes the requirement for Project and Personal Licenses. Projects are subject to approval by MRI Biological Safety Officers and individual experiments are required to be evaluated and approved by the MRI Animal Welfare and Ethical Review Body (AWERB).