

## RI, ROSLIN INSTITUTE BSL2/3 LABORATORIES

(UK)

<b>Research topics:</b>	<p>The Roslin Institute is internationally renowned for its research on farm animal genetics and health [<a href="http://www.roslin.ed.ac.uk/">http://www.roslin.ed.ac.uk/</a>]. It is affiliated with the Royal (Dick) School of Veterinary Studies at the University of Edinburgh, which was the top-rated veterinary school in the United Kingdom by research power in the latest assessment. The Institute has approximately 500 staff and students, including around 75 Principal Investigators organized in four divisions (Infection &amp; Immunity, Genetics &amp; Genomics, Developmental Biology and Neurobiology). In relation to infectious diseases, a wealth of expertise, models and resources exist on farm animal and zoonotic diseases. Emphasis is placed on: 1. The genetic basis of host resistance and resilience (involving both quantitative genetic analysis of populations, genome editing, transgenesis, <i>in vitro</i> genome-scale mutagenesis and use of 'omics technologies); 2. The molecular basis of virulence of pathogens, their evolution and strategies to detect and treat infections; 3. The basis of natural and vaccine-mediated immunity, supported by an immunological toolbox and animal models to study the nature and consequences of host responses.</p>
<b>Activities and services currently offered by the infrastructure/installation:</b>	<p>The £61M Roslin Institute building opened in 2011 and offers laboratory accommodation up to Containment Level 3 and Specified Animal Pathogens Order level 2. Researchers at the Institute use diverse animal models, including at the nearby Moredun Research Institute (also a partner in VetBioNet). Rodent models are available in the Biological Resource Facility at Roslin and a new Large Animal Research &amp; Imaging Facility will open in late 2018 with capacity for work in farm animals at up to Containment Level 2 with GMOs. However, the unit of transnational access offered at this stage is a day per researcher in the Roslin Institute laboratories and use of animal facilities will be</p>

	<p>charged at additional cost. Excellent facilities exist for flow cytometry, imaging, pathology and genomics, although charges for such services will apply. The Roslin Institute can supply poultry at conventional or specified pathogen-free status, including of unique transgenic lines and inbred lines differing in resistance to bacterial, viral and parasitic diseases [<a href="http://www.narf.ac.uk/">http://www.narf.ac.uk/</a>]. It can supply conventionally-reared cattle, sheep and pigs (e.g. for cell-based and explant work in laboratories) and has MHC-typed cattle, Europe's only sheep flock with endemic scrapie and capacity for genome editing in pigs.</p>
<p><b>Description of the access to be provided under VetBioNet TNA call:</b></p>	<p>The unit of transnational access is 1 day per researcher in the Roslin Institute laboratories. Research involving infection of animals can be conducted in animal facilities at Roslin (mice) or farm animals (at the Moredun Research Institute within 1km), but is not covered by the unit of TNA and costs for accommodation, maintenance and disposal of infected animals would be subject to charging at prevailing full economic cost.</p>
<p><b>Animal species/pathogens that can be worked on in this infrastructure/installation:</b></p>	<p>Diverse bacterial, viral, parasitic and prion diseases are studied at The Roslin Institute. The list below is not exhaustive and potential applicants can contact the Research Director (Professor Mark Stevens; <a href="mailto:Mark.Stevens@roslin.ed.ac.uk">Mark.Stevens@roslin.ed.ac.uk</a>) to discuss.</p> <p>Bacterial pathogens:  <i>Escherichia coli</i> pathotypes (especially APEC, ETEC &amp; STEC)  <i>Salmonella enterica</i> serovars (typhoidal and non-typhoidal)  <i>Campylobacter</i> spp.  <i>Staphylococcus</i> spp.  <i>Streptococcus</i> spp.  <i>Mycobacterium</i> spp. (esp. <i>M. tuberculosis</i>, <i>M. bovis</i>, <i>M. avium</i>)  <i>Rhodococcus equi</i>  <i>Listeria monocytogenes</i>  <i>Lawsonia intracellularis</i>  <i>Cryptosporidium</i> species</p>

	<p>Viral pathogens:  Influenza A virus (IAV)  Infectious Bronchitis virus (IBV)  Porcine reproductive &amp; respiratory syndrome virus (PRRSV)  Porcine diarrheal viruses  Animal &amp; human herpesviruses (including ILTV, MDV, OvHV, HCMV)</p> <p>Parasites:  <i>Theileria</i> spp.  <i>Eimeria</i> spp.  <i>Histomonas</i> spp.  African Trypanosomes</p> <p>Prions:  Roslin incorporated the Neuropathogenesis Unit of the Institute for Animal Health and has expertise on a range of Transmissible Spongiform Encephalopathies, including scrapie, bovine spongiform encephalopathy, variant Creutzfeld-Jacob disease and Chronic Wasting Disease. Transgenic mouse models for studying zoonotic risk and strain typing exist.</p>
<b>Travel and subsistence costs:</b>	
<b>Infrastructure/installation ethical rules:</b>	<p>Animal research conducted at The Roslin Institute must comply with the Animals (Scientific Procedures) Act 1986 and associated Home Office regulations. Specifically the purpose and nature of such work must be covered by a local Project License (PPL) and individuals performing licensed procedures must hold a UK-accredited Personal License (PIL, or equivalent) for the species and activity proposed. Competency of individuals conducting licensed procedures must be certified and documented. All experiments will be reviewed by a local Ethical Review Committee. Research involving pathogens must comply with Contained Use regulations with consent from the Health &amp; Safety Executive (HSE). This will include notification to HSE of the biological agent to be used, notification of any proposed genetic modifications of the agent(s) and full risk assessments for both the agent and genetic</p>

modifications to the satisfaction of the local Genetic Modification & biological Safety Committee. Under no circumstances would visitors be allowed to commence work with pathogens or animals at The Roslin Institute for which consent is lacking and the Institute does not undertake to produce risk assessments on behalf of visitors. Preference for requests for transnational access is likely to be given to activities that align with the interests of current investigators at the Institute, for which consent and risk assessments are already in place.