

BBSRC and Defra invest in zoonotic livestock disease research

BBSRC and Defra have announced a £4 million investment into 10 innovative projects focused on international animal health research.

The £4 million joint investment by the Biotechnology and Biological Sciences Research Council (BBSRC) and Department for Environment, Food and Rural Affairs (Defra) will fund 10 transnational projects that:

- support cross-cutting research and innovation to better understand zoonoses focusing on the animal, human and environmental interface
- develop novel vaccine and diagnostics technology platforms to improve animal health and welfare

UK researchers will partner in nine of the 10 projects.

International collaboration

The International Coordination of Research on infectious Animal Diseases (ICRAD) is funded by Horizon 2020. It brings together 21 partners from 17 countries to perform research to address infectious animal disease challenges.

Joint investment from European partners for this funding opportunity totals approximately €12.5 million.

With an overarching aim of improving global animal and human health, this latest investment will increase preparedness and improve our ability to respond to diseases such as:

- avian influenza
- bovine tuberculosis (TB)
- coronavirus

Essential research

The 10 projects receiving funding will:

- increase preparedness to (re)-emerging zoonotic diseases
- improve our ability to respond to zoonotic threats, thereby contributing towards improved animal and human health
- build our understanding of the (re)-emergence of pathogens with zoonotic potential focusing on causes and factors that lead to spill-over and maintenance of pathogens
- build our understanding of animal host-pathogen interactions and the immune response
- develop novel or improved detection and prevention platforms

Responding to real threats

BBSRC Executive Chair, Professor Melanie Welham, said:

The COVID-19 pandemic demonstrated the devastating impacts zoonotic diseases can have.

It is, therefore, vital that we work hand in hand with our international partners to build our understanding of, and develop bio-based solutions in response to, these global threats.

This latest funding with our partners at Defra moves us ever closer to achieving our goal of tackling infectious zoonotic diseases.

Deepening our understanding

Dr Christine Middlemiss, the UK's Chief Veterinary Officer, said:

This research forms an important part of our efforts to control some of the most difficult animal health diseases the world faces, including avian influenza and bovine tuberculosis. These grants deepen our understanding of how diseases are passed between wildlife and livestock, and form part of the UK's commitment to a One Health approach that reduces the risk of threat to human, animal, plant and environmental health.

Addressing serious animal health challenges

Defra Chief Scientific Advisor Professor Gideon Henderson, said:

This collaboration brings together a wealth of expertise from research institutions across the UK and Europe to address some of our most serious animal health challenges, including developing new vaccine and diagnostic technologies.

The UK is committed to working with our international partners in a coordinated scientific effort to overcome infectious animal disease.

The ICRAD network has launched a pre-announcement for its third transnational funding opportunity.

This funding opportunity will fund research focusing on the impact of helminth infections and climate change on livestock health, together with the development of control strategies such as novel vaccine and diagnostic technologies.

Project pre-proposals are welcomed from 3 April to 1 June 2023.

[Find out more about the funding opportunity via ICRAD's website](#)

Further information

Funded UK projects

Identification of factors driving the emergence and spread of avian influenza viruses with zoonotic potential

UK principal investigator: Professor Paul Digard, The Roslin Institute

Improving the diagnosis of tuberculosis in domestic ruminants through the use of new antigens and test platforms

UK principal investigator: Dr Gareth Jones, Animal and Plant Health Agency (APHA)

Defining the molecular determinants of mycobacterial adaptation and host or pathogen interaction to inform bovine TB control

UK principal investigator: Dr Sharon Kendall, The Royal Veterinary College (RVC)

Protein nanoparticle vaccine platform for rapid response against zoonotic viruses in poultry and swine

UK principal investigator: Professor Dr Linda King, Oxford Brookes University

Improved molecular surveillance and assessment of host adaptation and virulence of *Coxiella burnetii* in Europe

UK principal investigator: Dr Tom McNeilly, Moredun Research Institute

Classical scrapie in genetically resistant goats: questioning current concepts and policies

UK principal investigator: Dr John Spiropoulos, APHA

Classical scrapie in Iceland, a model for prion diseases worldwide

UK principal investigator: Dr John Spiropoulos, APHA

Emerging porcine influenza and coronaviruses

UK principal investigator: Dr Elma Tchilian, APHA

Comparative host and species-specific immune responses of macrophages infected with zoonotic *Leptospira interrogans*

UK principal investigator: Professor Dr Dirk Werling, RVC