

6th Meeting of the Large Animal Research Network (LARN)

Afternoon series - online

11th, 18th and 25th May 2021

Programme and Speaker Biographies

Tuesday 11th May - Poultry in biomedical research

14:00 - Poultry in animal experiments at SRUC
Dr Vicky Sandilands, SRUC

Vicky is a poultry behaviour and welfare scientist at SRUC, with over 20 years' experience. Her work focusses on how to improve bird welfare by focussing on housing and management techniques. In addition, she chairs SRUC's AWERB (for all species) and runs the Scottish PIL course in poultry.

14:50 - Innovations in control of avian diseases for sustainable healthy poultry production
Professor Venugopal Nair OBE, The Pirbright Institute

Professor Venugopal Nair (<https://www.pirbright.ac.uk/users/prof-venugopal-nair-obe>) heads the Viral Oncogenesis group at Pirbright. He has nearly 30 years research experience in avian diseases and uses innovative approaches in studying virus pathogenesis and in developing state of the art vaccines and diagnostics for controlling avian diseases. Prof. Nair also a Visiting Professor in the Department of Zoology at Oxford University (<https://www.zoo.ox.ac.uk/people/professor-venugopal-nair>), and a Jenner Investigator (<https://www.jenner.ac.uk/team/venugopal-nair>). He has extensive international collaborations through Global Alliance for Research on Avian Diseases (www.garad.org) and UK-China Centre of Excellence for Research on Avian Diseases (<http://www.uk-china-cerad.org/>).

15:45 - Questions and close.

Tuesday 18th May - How to engage with laboratory swine and learn more about their emotional state

14:00 - A senior technician's experience with pigs engaged in research: Husbandry, training, habituation, enrichment, 3Rs and welfare
Marianne Farish, SRUC

Marianne has been a SRUC research technician for over 20 years specialising in pigs but also worked extensively with sheep, cattle, poultry, goats and horses. She has been fortunate enough to work in many different environments, including 2 summers with outdoor farrowing sows in the Grampians, 6 months on a massive 50,000 sow piggery in Australia, several trips to conduct research in Denmark, as well as extensive UK and Spanish pig transport and slaughterhouse projects most recently working on humane slaughter, assessing LAPS and CO2. Marianne has spent many years working on development of free farrowing environments and piglet survival. She is a certified thermographer and has lots of experience of various data collection. Marianne coordinates the research projects at

EHPU, trains new staff in HO procedures and has tried and tested all manner of pig training and habituation techniques for almost every conceivable maze, test arena and cognitive training methodology as well as similar for other species.

14:35 - Can PLF technology identify indicators of pig emotional state?
Dr Emma Baxter, SRUC

Emma Baxter is an animal welfare and behaviour scientist at SRUC with over 18 years of research experience. She specialises in pigs with projects covering challenges throughout the pig's life cycle from optimising piglet survival and designing high welfare farrowing systems to investigating alternatives to CO₂ stunning at slaughterhouses. Other research programmes include collaborations with Danish colleagues on the effects of hyper-prolific breeding programmes, finding solutions to sow hunger and investigating links with gastric ulceration. She is also involved in precision livestock farming projects looking at automated detection of imminent tail-biting outbreaks, individual recognition and detection of affective states using facial biometrics and facial expression. She is an active member of several national and international committees including the EU sub-group for pig welfare and the RSPCA's Scientific and Technical Advisory Group for pig standards. She works on commercial farms with all sectors of the supply chain, providing consultancy and specialising in outreach to translate research into practice. She publishes regularly in peer-reviewed journals, books, popular and industry press, develops websites, as well as teaches and supervises veterinary and animal science students at graduate and post-graduate level.

15:30 - Questions and close.

Tuesday 25th May - Refining sheep models and learning more about influenza in pigs

14:00 - *Facial expression in sheep: potential to be more than just a welfare assessment tool*
Dr Krista McLennan, University of Chester

Krista is currently a senior lecturer and the deputy head of department at the University of Chester, Biological Sciences. She lectures across a range of courses within the department, specialising in farm animal welfare, and animal physiology. Her research interests focus on how we can use animal behaviour to identify and assess affective states such as pain, as well as how current management systems on farms effect the behaviour and welfare of the animals involved. Krista's passion for farm animals stems from her PhD work studying social bonds in dairy cattle and assessing how dynamic group systems can affect their welfare and productivity. Alongside her PhD she was able to gain valuable teaching experience and it was here she developed a deep passion for teaching about animal welfare and behaviour.

Before joining the University of Chester, Krista completed a post-doctoral position at the Department of Veterinary Medicine, University of Cambridge working on an EU funded project (Animal Welfare Indicators, AWIN) looking at the relationship between disease, behaviour and welfare of sheep. She developed the Sheep Pain Facial Expression Scale which can be used by farmers and veterinarians to help them recognise and assess pain in sheep, leading to an improvement in animal welfare. Krista is continuing this work and collaborating with Cambridge University to develop an automated system of pain detection, as well as a potential early indicator system for disease prevention and parturition.

14:35 - Development of an improved welfare sheep scab mite transmission model for the evaluation of prophylactic interventions
Dr Kathryn Bartley, Moredun Research Institute

Dr Kathryn Bartley has had a 15-year research career in ectoparasitology, with an interest in developing diagnostics and interventions for poultry red mite (PRM) and sheep scab, diseases that

both impact on welfare and production of the host species. To improve the welfare of experimental animals and the validity of vaccine efficacy testing, Kathryn has developed/refined PRM hen and sheep scab models utilising the 3Rs principals. Her early work on developing *in vitro* and on-hen *in vivo* PRM feeding devices was successfully continued in an NC3Rs-funded project (with Dr Francesca Nunn and Dr Alasdair Nisbet) and has led to the uptake of the optimised *in vivo* feeding device by several international research groups. More recently Kathryn has focussed on the development of a sheep scab mite transmission model for us in vaccine efficacy studies as part of the Scottish Government RESAS programme.

15:25 - Investigating influenza in pigs
Dr Elma Tchilian, The Pirbright Institute

Elma obtained her PhD at the Imperial Cancer Research Fund, London, before working as a postdoctoral fellow in Birmingham, Senior Research Scientist at the Edward Jenner Institute and Principal Investigator in Oxford. Elma identified the leucocyte common antigen (CD45) as a cause of severe combined immunodeficiency in man. She demonstrated the importance of local immunity in vaccine-induced protection against tuberculosis and influenza.

Elma joined The Pirbright Institute in 2014 and is now Head of Mucosal Immunology. She has established a powerful pig influenza model to study immune responses to and transmission of influenza viruses and to test efficacy of vaccines and monoclonal antibodies (mAbs). Elma's group identified porcine tissue resident memory cells and generated the first pig influenza mAbs, showing that they recognise the same epitopes as humans. These data demonstrated the utility of the pig as a biomedical model for human disease.

16:15 - Questions and close.

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