

## Annual Conference 2019

26<sup>th</sup> - 28<sup>th</sup> November  
Birmingham

### PROGRAMME SESSION SUMMARIES

#### Tuesday 26<sup>th</sup> November

##### Home Office Updates

The ASRU Leadership team will provide an update of any recent changes within the Home Office and provide an overview on subject areas such as ASPeL, regulation, themed inspections, consistency, responsiveness and compliance. The afternoon session will include a series of guest presentations covering a variety of topics including Sentience, changing attitudes towards animal welfare in the laboratory animal science sector from 1940s to the current day and an overview of the work of the Animal Welfare Research Network (AWRN). The ASRU session will close with the ever popular “Ask the Home Office Inspector” question and answer session. Delegates are invited to submit their questions (which will be anonymised), in advance to [info@lasa.co.uk](mailto:info@lasa.co.uk).

##### Animal Science - Transgenic Group: Advances in the Age of CRISPR Transgenics

A full day technical forum focusing on the CRISPR approach to making transgenics. Starting with a history of the generation of genetically altered models, the day is organised into 3 sessions, each opening with an expert speaker before a series of short presentations from practitioners on hot topics and refinements in the field. The 3 sessions cover advances in CRISPR design, CRISPR delivery methods and Quirks of Genotyping: allele verification and founder characterisation before closing with a presentation on the ethics & challenges of breeding CRISPR founders. A questionnaire will be sent out in advance looking for contributors to give short 5-10 minute presentations, and the order of the day will be highly interactive with discussion encouraged.

##### Inaugural Keynote speaker

*Professor Elizabeth Fisher - Professor of Neurogenetics at the Institute of Neurology in Queen Square, University College London (UCL) - ‘Humanising’ mouse models to understand neurodegeneration*



Different types of mouse model, including transgenic, gene targeted, chemically-mutagenised, can give insight into human disease mechanisms. Here we consider different types of model and review recent results, including in the use of ‘humanised’ mice in which either DNA or entire cellular systems are derived from humans. Motor neuron disease/amyotrophic lateral sclerosis and other forms of neurodegeneration are discussed, along with some of the difficulties of translating from mouse to human.

Elizabeth Fisher is Professor of Neurogenetics at the Institute of Neurology in Queen Square, University College London (UCL). She has an undergraduate degree from Oxford (1981), and a PhD from Imperial College London (1986), working in the labs of Steve Brown and Mary Lyon (MRC Harwell). After a postdoc with David Page at the Whitehead Institute, MIT she returned to Imperial 1990 and moved to UCL in 2001. Her lab focuses on making and analysing mouse models of neurodegeneration, including a novel humanised model of Down syndrome (trisomy 21) and models of Charcot Marie Tooth disease, dynein dysfunction as well as SOD1, FUS and TDP-43 models of motor neuron disease. She is a Wellcome Trust Senior Investigator (held jointly with Victor Tybulewicz of the Francis Crick Institute), a member of EMBO and a Fellow of the Academy of Medical Sciences.

Wednesday 27<sup>th</sup> November

### **3Rs, sponsored by AS-ET**

The LASA 3Rs section conveners have invited submissions for spoken presentations on any aspect of the 3Rs (Replacement, Reduction and Refinement). This session will provide an opportunity for all research scientists and technicians, including those recently qualified, to present on new advances that are supported by scientific data. LASA is grateful for the continued support from the Animals in Science Education Trust (AS-ET) who sponsor the award for the best 3Rs young presenter.

### **Snippets of science: let's learn more about science**

A series of diverse presentations delivered by experienced specialist researchers covering contemporary issues in biomedical research. The scientists will showcase their initiatives and work across the research landscape which helps us to continue to better understand disease processes and use the most appropriate animal models - including derived materials such as organs, tissues and cellular components - for medical, veterinary and other scientific purposes.

### **Education, Training and Ethics (ETES): From Experimental Design to Behavioural Change: how can we stop ruining a perfectly good idea?**

Arguably, an experiment can be likened to a conversation: the researcher asks a question with the expectation that the animals will provide an answer. Predictably, the clarity of the answer depends on how well the question is formulated. This is where design, and analysis, play a vital role. And unfortunately, this is where the biggest blunders continue to be made in pre-clinical research with demonstrably expensive consequences on results, animal suffering and funding. Clearly a change in behaviour is required. This session will address how we might change people's behaviour in this area as well as more generally, drawing on examples from individuals involved in biomedical sciences, statistics and health psychology.

### **Institute of Animal Technology (IAT) Workshop: Preparation and organisation: a holistic approach to training**

The way in which we train is becoming increasingly more important. Training is not only a legal requirement but provides many benefits to your Establishment and staff. This session will focus on three key areas: Preparation, delivery and assessment. Preparation is key to delivering a successful and targeted session which is then followed by the correct delivery and assessment for your audience. Come and find out more and share your own experiences at an interactive IAT workshop.

Thursday 28<sup>th</sup> November

### **Care and Welfare & RSPCA: Does Care and Welfare matter?**

This session will cover potential conflicts between researchers wanting to "do things the way they've always been done" and the more "enlightened" who want to introduce welfare refinements, and how to resolve these challenges? There will be various presentations on innovative approaches with significant impact on animal welfare, such as experimental refinement, and this will be followed by a round table discussion on challenges for the discovery and implementation of such refinements, that may not be attractive to funders or publishers, yet can make remarkable impact on the animal's wellbeing and therefore the quality of research. Discussion will focus on how staff and scientists can be supported, with special encouragement of initiatives developed by young technicians and researchers; panel members will also explore how the AWERB can assist with this area?

### **All creatures large and not so large!**

If James Herriot was to attend the LASA annual meeting 2019, would he be familiar with the wide range of animal models and species which are being used for biomedical research? This year's annual meeting will include a diverse range of presentations from speakers with a variety of backgrounds and skills relating to large (and not so large) animals.

Topics will include: equine herd management, challenges associated with translational research studying farm animal models and 3Rs considerations involving amphibians.

### **Closing Keynote speaker**

*Professor Michael R F Lee, University of Bristol & Rothamsted Research - Agricultural sustainability metrics based on land required for production of essential human nutrients*



Agricultural land and food security are coming under great pressure from climate change, rapidly increasing human population, urbanisation, demand for biofuels, and demand for animal protein. This situation led us to re-assess the role of ruminant livestock in delivering key nutrients, especially in the broader context of global warming potential and land use change. To date, several studies have examined environmental consequences of different food consumption patterns at the diet level; however, few have addressed nutritional variations of a single commodity attributable to on-farm strategies, leaving limited insight into how agricultural production can be improved to better balance environment and human nutrition.

Professor Michael R F Lee, Ruminant Nutritionist, graduated with first class honours in Animal Science from University of Wales, Aberystwyth in 1997 and gained a PhD in ruminant nutrition from the University of Aberdeen in 2001 followed by Post graduate certificate for teaching in higher education from Aberystwyth University in 2012. He worked for the Institute of Grassland and Environmental Research from 2001-2008, before the merger with Aberystwyth University where he stayed as a Principle Scientist and Senior Lecturer in animal nutrition and rumen biochemistry until moving to the University of Bristol, School of Veterinary Science in 2013 as a Reader in Sustainable Livestock Systems. In 2015 he took a joint appointment between Rothamsted Research and the University of Bristol as Head of Site at North Wyke and was promoted to Chair in Sustainable Livestock Systems later that same year. His Research focuses on the sustainability of livestock as a part of food security globally. He has published over 200 research articles and papers including recent articles in Nature and Science. He was awarded the Sir John Hammond Memorial Prize in 2015 for services to Animal Science and has represented the British Society of Animal Science on Presidents Council 2011-2016. In August 2016, he was elected as Vice President of the European Federation of Animal Science Livestock Farming Systems Commission and in April 2018 he was elected as Vice President of the British Society of Animal Science.

### **Laboratory Animal Veterinary Association (LAVA): Assessing the welfare of research animals**

LAVA promotes the advancement of veterinary knowledge and skills in subjects connected with the breeding, maintenance of health, welfare and use of laboratory animals. In this session LAVA is exploring new ways of assessing the welfare of research animals, for example through the use of thermography or behavioural analysis as well as positive enforcement training. The focus in this session is on less common used species, such as pigs and poultry.