



# Lay Members' Forum 2019

## 20<sup>th</sup> Anniversary Meeting

Wednesday 11th December  
The Royal Society, London





# RSPCA Lay Members' Forum

Wednesday 11<sup>th</sup> December 2019

<b>10.15 Arrival and registration, with tea, coffee and biscuits</b>		
<b>10:55</b>	<b>Welcome and introduction</b>	<b>Barney Reed</b> RSPCA
<b>11:00</b>	<b>How effective is your AWERB?</b> 20 years after the first Lay Members' Forum, how can we be sure our AWERBs are making a real difference, what approaches can we use to assess this, and how can lay members contribute?	<b>Katherine Knight</b> Animals in Science Regulation Unit
<b>11:30</b>	<b>Key take-home messages from the AWERB-UK meeting</b>	<b>Penny Hawkins</b> RSPCA
<b>11.40</b>	<b>Discussion on assessing effectiveness and achieving more establishment-wide support for the AWERB</b>	<b>All</b>
<b>Looking forward to the next 20 years</b>		
<b>12:20</b>	<b>Sentience and the precautionary principle</b> Which animals are sentient, and how they should be 'protected', is a hot topic with implications for AWERBs.	<b>Jonathan Birch</b> London School of Economics
<b>12.40 Lunch</b>		
<b>1:30</b>	<b>Genetic modification in the mouse: precision genetic engineering vs genomic hooliganism</b>	<b>Ian Rosewell</b> Francis Crick Institute
<b>1:50</b>	<b>Understanding the causes and consequences of obesity and metabolic disease</b>	<b>Tony Coll</b> University of Cambridge
<b>2:10</b>	<b>Examining benefits in animal research</b> Benefits may not be immediate, or may be controversial. This can be challenging if you are not a scientist. This short talk will set the scene for a discussion session.	<b>Jane Smith</b> Independent ethics consultant
<b>2:30</b>	<b>Discussion and case studies – How to challenge effectively</b>	<b>All</b>
<b>3:20</b>	<b>Concluding remarks</b>	
<b>3:30 Close</b>		

## How effective is your AWERB?

*Katherine Knight, Animals in Science Regulation Unit (ASRU), Home Office*

The AWERB should sit at the heart of the establishment, asking 'should this scientific research be done now, and at this establishment?' It is however not just as a mechanism to review project licences, but to ensure that all aspects of governance regarding animal use is actively debated and ensure that issues, risks and compliance are highlighted along with opportunities to replace, reduce or refine animal experiments.

Effective AWERBs should complete their five minimum and seven additional tasks, and through this exert influence both internally and externally on the governance of an establishment. But what does 'effective' look like and how can this be assessed and reviewed?

The aim of this presentation is to guide lay members in identifying the effectiveness of their AWERB and what best practice looks like:

- What are your establishment's ethics and values?
- Does the AWERB have a strategy or forward direction, and how does this fit with the establishment mission and vision?
- How does the AWERB manage itself and any committees? Does your AWERB engage externally?
- Does your AWERB set policies and standards?
- What is your AWERB's communication strategy? How open and transparent is it?
- Does your AWERB impact on roles, staffing, training and management?
- How accountable is your AWERB?
- How can you as a lay member influence the AWERB?

### Reference:

Guidance on the operation of the Animals (Scientific Procedures) Act 1986 (March 2014)

## Key take-home messages from the AWERB-UK meeting

*Penny Hawkins, RSPCA*

The third RSPCA/LASA/LAVA/IAT AWERB-UK meeting was held in June 2019. The meeting was convened because, although the AWERB is now well established, there is still of room for improvement with respect to a number of issues. These include communications both from and to AWERBs, levels of support and resource for AWERBs, and liaison with other relevant bodies within establishments, such as Research Governance and User Groups.

The meeting discussed what the AWERB, and its members, need to feel supported, respected, incentivised and fully integrated into the establishment, enabling them to have a genuine impact. It also considered which key bodies and persons (within and outside the establishment) need to be convinced of the AWERB's importance, and how to influence these.

This presentation will outline some positive points and concerns from the 60 participants at AWERB-UK, who were drawn from all types of AWERB member within industry and academia including scientists, chairs, vets, animal technologists and named persons.

For a summary of the meeting and presentations, see [tinyurl.com/AWERB-UK2019](https://tinyurl.com/AWERB-UK2019)

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## Sentience and the precautionary principle

*Jonathan Birch, London School of Economics*

To be sentient is to be capable of having feelings with a positive or negative quality, such as feelings of pain, pleasure, comfort, discomfort, boredom, contentment, excitement, anxiety and joy. Feeling is notoriously difficult to study scientifically due to its inherently subjective nature, and we are still in a state of severe uncertainty about the distribution of sentience in the natural world. Contested cases include fish, fish larvae, cephalopod molluscs, insects, spiders, and decapod crustaceans. In these cases, there is not just fierce disagreement about the presence or absence of sentience, but also fierce disagreement about how to settle the question scientifically.

Against a background of ongoing controversy, what we really need are tools for making sensible decisions in the face of uncertainty. Precautionary reasoning is a particularly important tool. In the past, I've written about how precautionary reasoning can help policy-makers design better laws around animal sentience and welfare. In this talk, I reflect on how AWERBs can also use precautionary reasoning to make sensible decisions.

# Genetic modification in the mouse: precision genetic engineering vs. genomic hooliganism

*Ian Rosewell, Francis Crick Institute*

From 2013 CRISPR (clustered regularly interspaced short palindromic repeat) and Cas9 (CRISPR-associated) endonucleases have come to represent a hugely significant development in genetic engineering and while some gene therapy trials are already showing promise, the dangers in the unethical application of this technology have also been demonstrated.

An overview of the system will show how the components, which protect bacteria and archaea against invading viruses, have been modified and applied to genetic modification, so that Cas9 can generate double strand breaks at sites across the genome. My talk will emphasise the utility of Crispr Cas and associated technologies for genetic modification, with a focus on the mouse, from the context of the provision of a service which aims to create mouse models for research at the Francis Crick Institute.

A starting point for any project is to ask if a strain bearing the mutation is available, to seek justification for making a mammalian model, which will stem from all the background literature and all previous laboratory work on the target. Then to ask for an outline of the model's later use. In this way the final animal model can be a unique and powerful means to address questions on function and mutation, in an entire mammalian organism, questions that can't be addressed by other means, despite the other exciting developments in cell biology and organoids, for example.

While providing an alternative to the cumbersome and time-consuming traditional embryonic stem cell-based methods, so called 'gene targeting', the implementation of 'gene editing' technology isn't always straightforward and the numbers of mice involved in a production step aren't fully predictable. What's true for one target, might not hold for another. We seek to make our work more efficient and make gains toward refinement and reduction. When should the current strategies be dropped in favour of something that promises further improvement? When does the ease of producing a strain make cryopreservation unviable?

If Cas9 remains the most well-known and utilised enzyme, there is a growing number of ways in which Cas9 can be used and a growing range of similar enzymes and systems now identified that will ensure a rapid pace of development for the coming years. So called 'Prime Editing', is a case in point, detailed in a recent publication, it promises a combination of greater precision and greater efficiency.

The promise of this technology has to be a means for 'precision engineering' of the genome, whereby no other changes occur in the genome and we can be confident that the single change, the effect of which is being compared to mice lacking that change, is not lost in the background of other changes we have made, intentionally or unknowingly, elsewhere in the genome. Coverage of Prime Editing identified the use of double stranded breaks as 'genomic hooliganism', and we have to be mindful in our current approach, in screening for new models that, as far as possible, methods are robust to ensure the final model is valid.

# Understanding the causes and consequences of obesity and metabolic disease

*Tony Coll, University of Cambridge*

Obesity and related metabolic disorders like Type 2 Diabetes Mellitus are major public health disorders. In the 2017 The Health Survey for England found that 28.7% of adults in England were obese and a further 35.6% were overweight, making a total of 64.3% who were either overweight or obese ([researchbriefings.files.parliament.uk › documents](https://researchbriefings.files.parliament.uk/documents)).

Dramatic societal and environmental changes over the last five decades have undoubtedly contributed to the rise in these disorders. In particular, the cost and availability of calorie-dense foods and changes in typical working patterns and activity levels continue to be highlighted.

The last 25 years have also been remarkable in that there has been huge progress in understanding the biological mechanisms that are crucial in the day-to-day control of when we eat, what we eat, how we metabolise or store the energy that we consume in our food and how these innate signalling pathways interact with the environment in which a person lives. Many of these key insights have been derived from work involving model organisms.

Despite this body of work, there remains in some quarters a prevailing opinion that metabolic disorders are nothing more than lifestyle choices gone wrong and that the continued pursuance of genetic and biological causes for obesity detracts from measures to culture personal responsibility for health.

However, rather than competing with policy and behavioural change-related approaches to obesity, data generated from animal model systems can work synergistically with evidence derived from human population and genetic studies. Brought together, these approaches can lead to a more enlightened understanding of the biological basis for inter-individual variation in body weight and more fully informed, rationale-based interventions.

## Further reading:

O'Rahilly, S. (2016). Harveian Oration 2016: Some observations on the causes and consequences of obesity. *Clinical Medicine (London, England)*, 16 (6), 551-564. [doi.org/10.7861/clinmedicine.16-6-551](https://doi.org/10.7861/clinmedicine.16-6-551)

## Examining benefits in animal research

*Jane Smith, Independent Ethics Consultant*

This short presentation will examine whether harms caused to animals can be more obvious than benefits, and will consider the importance of scientific validity in scientific experiments involving animals.

The next step will be to consider points relating to potential benefits, including how these might be realised in practice. This will be followed up by a look at ASRU's review of benefits<sup>1</sup>, with a particular focus on when the benefits will be realised.

To conclude there will be some selected recommendations from the review of harm-benefit analysis in the use of animals in research<sup>2</sup>.

1. *ASRU is The Animals in Science Regulation Unit*
2. *From the Report of the Animals in Science Committee, chaired by Professor Gail Davies*

### Further reading:

Review of harm-benefit analysis in the use of animals in research:  
[gov.uk/government/publications/harm-benefit-analysis-animals-in-science-committee-review](https://www.gov.uk/government/publications/harm-benefit-analysis-animals-in-science-committee-review)

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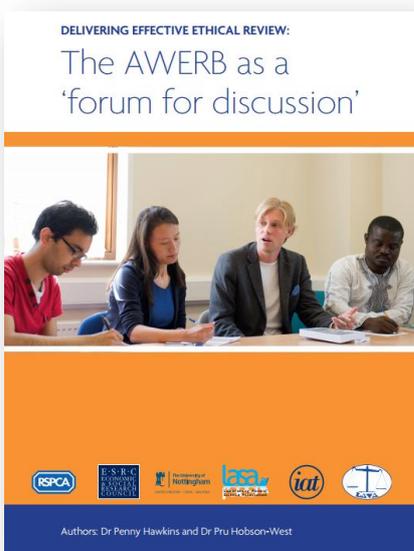
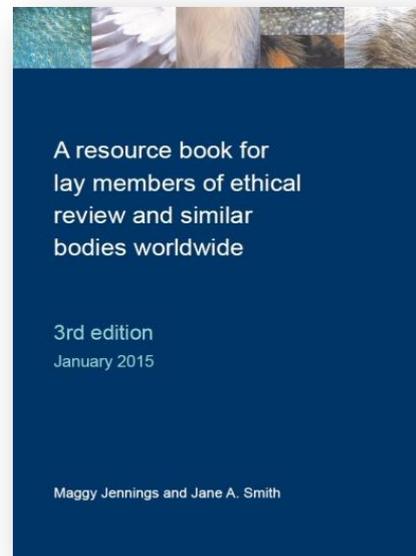


## RESOURCES



The RSPCA/LASA Guiding Principles on Good Practice for Animal Welfare and Ethical Review Bodies, 3<sup>rd</sup> edition provides a brief, clear overview of common AWERB tasks and good practice for meeting these: [tinyurl.com/RSPCA-LASA-GP](http://tinyurl.com/RSPCA-LASA-GP)

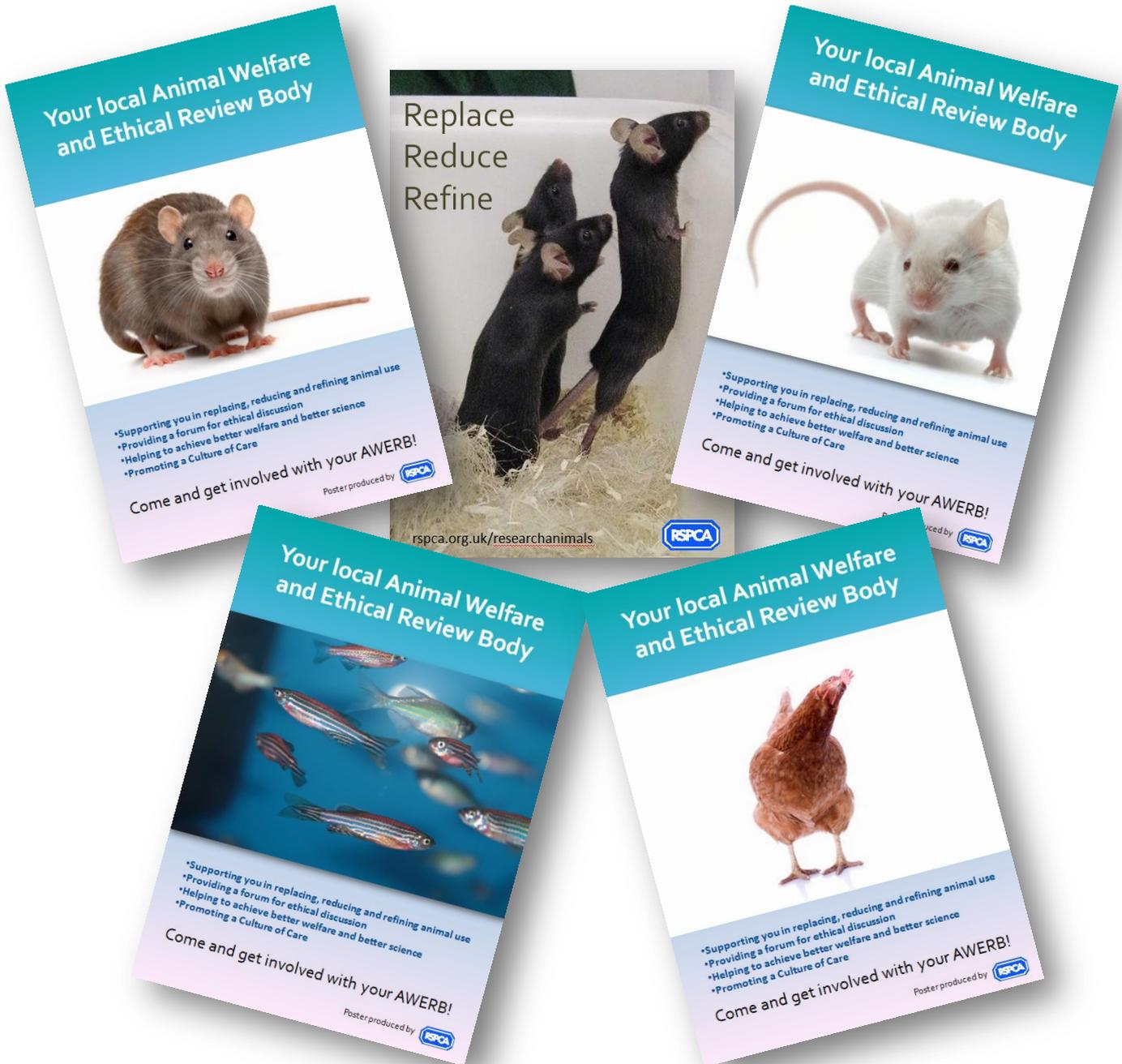
The RSPCA Lay Members' Resource Book, 3<sup>rd</sup> edition provides guidance on how to participate effectively in the AWERB, including making ethical judgements (NB although the title refers to lay members, the content is relevant to all member categories): [tinyurl.com/RSPCALM](http://tinyurl.com/RSPCALM)



This new booklet provides guidance, ideas and examples to help AWERBs fulfil their forum for discussion function. If you would like a hard copy please email: [research.animals@rspca.org.uk](mailto:research.animals@rspca.org.uk) or an online page turner/PDF is available at: [view.pagetiger.com/AWERB/AWERB](http://view.pagetiger.com/AWERB/AWERB)

For a full list of our resources, please visit [science.rspca.org.uk/sciencegroup/researchanimals/reportsandresources](http://science.rspca.org.uk/sciencegroup/researchanimals/reportsandresources)

## AWERB AND THREE RS POSTERS



Please contact [research.animals@rspca.org.uk](mailto:research.animals@rspca.org.uk) if you would like one or more posters, remembering to state which one(s)

### Further Reading

The third AWERB-UK meeting, for all AWERB members - including scientists, animal technologists, lab animal vets, AWERB chairs and lay members - was jointly convened by the RSPCA, IAT, LASA and LAVA and held in June 2019.

The meeting summary is available at: [tinyurl.com/AWERB-UK2019](https://tinyurl.com/AWERB-UK2019)

Please note that opinions expressed by speakers do not necessarily reflect the views of the RSPCA, staff, members or associates

