

# Challenging Refinements



## Meeting summary

On 4 April 2019, 70 delegates gathered in Stevenage, UK for an event aiming to share knowledge and ideas, and promote practical approaches to help refine animal 'models' and procedures in areas of research and testing where this can be particularly challenging.

The first main session began with a presentation from Kirsty Bannister (King's College London) who spoke about novel strategies to include analgesia in models of neuropathic pain. This was followed by a talk from Scott McCleary (GSK) detailing how he and colleagues have systematically applied refinement to a rodent model of arthritis. Klas Abelson (University of Copenhagen) then spoke about the work his group has done, in conjunction with colleagues in industry, to reduce the impact of diabetes research on animals. The final talk before lunch was a joint presentation from Daniel Chew and Wesley Dopson (Galvani Bioelectronics) who detailed how they had applied the 3Rs in their neuromodulation research.



The afternoon session began with a presentation on how to mitigate some of the welfare issues associated with working with haemophilia A mice given by Val Piercy (RxCELERATE). Fiona Sewell (NC3Rs) then gave a presentation about the challenges they had working with the OECD to gain acceptance for a refined protocol for inhaled toxicity testing. Alice McNamara (Envigo) followed, detailing how a contract research organisation can apply refinement to toxicology studies. The next presentation of this session was from Jon Lyon (GSK) who gave an overview of how the 3Rs can be applied in mitochondrial toxicity testing. The final talk in this session was from Steven Madden, an AWERB chair (Charles River, Edinburgh), who illustrated how the AWERB can promote refinement of 'challenging' models and procedures.



The day concluded with a discussion session, introduced by Peter Gray (Animals in Science Regulatory Unit, Home Office), on how to improve dissemination of refinement information within and between research establishments.

Delegates agreed the need for improved information exchange and were encouraged to return to their places of work and challenge current culture and practice.

## Key themes/take home messages

A number of key messages came from the presentations and discussions. Firstly, refinement doesn't have to be difficult or complex - simple measures (like providing moistened food in the cage or improving handling methods), coupled with improved monitoring and welfare assessment can make a significant impact for animals. Secondly, challenging current practice is important. For example, assumptions that analgesia will invalidate scientific endpoints may not be true and are worthy of investigation. Thirdly, the scientific community needs to do more to share good practice. Guidelines supporting planning (e.g. PREPARE) and reporting (e.g. ARRIVE) of research are a good starting point but it is important that individual research groups and establishments have a policy to encourage and facilitate sharing of techniques and strategies that improve animal welfare.

We would like to thank staff at GSK, Stevenage for hosting the meeting and for providing the excellent support which enabled its success.