UNDERSTANDING ANIMAL RESEARCH OCEANIA

TECNIPLAST

THE UNIVERSITY OF MELBOURNE

Melbourne and Victoria AEC Members' Forum

Summary report of the workshop held 24 November 2025

About Understanding Animal Research Oceania

www.uaroceania.org

Understanding Animal Research Oceania (UAR Oceania) is an Australian non-profit organisation that explains why animals are used in medical and scientific research. We support greater understanding of how and why animals are used in medical, veterinary, scientific and environmental research in the Oceania region.

UAR Oceania works to help everyone understand how society benefits from the humane use of animals in research, and works with the scientific sector to ensure that when research uses animals, it meets the high standards of ethical conduct expected by the international research community and the public. We support the life-sciences community across Oceania to be open, courageous and credible in the way it approaches and discusses research, drawing together research organisations, industry associations, professional bodies, charities and others.

For further information or to join UAR Oceania please contact ajlear@uaroceania.org.

About the AEC Members' Forum

UAR Oceania, in collaboration with the University of Sydney, created the AEC Members' Forum to provide a platform for AEC members within a specific region to meet face to face and discuss key and current issues that they may encounter or need to take decisions on as part of their AEC role.

While all AEC members undergo training for their position, science does not stand still, and neither do the related policy issues. The Forum provides space for AEC members to meet their counterparts from other committees and institutions, deliberate on topics that are emerging, changing or which can be challenging, and to discuss the roles of the AECs. The sessions are participatory and focused on knowledge building and sharing among AEC members.

This Forum was held in collaboration with the University of Melbourne to strengthen the understanding and networks of AEC members in Victoria and to support the deliberations of their committees. It does not replace AEC member training required by regulatory authorities, including that provided through ANZCCART's ComPass programme.

If you are interested in holding an AEC Members' Forum in your region, please contact policy@uaroceania.org.

Disclaimer

Opinions expressed in this report do not necessarily represent the views of all participants at the event, Understanding Animal Research Oceania, The University of Melbourne, University of Sydney or any other AEC Members' Forum partners.

Production and printing of this report was sponsored by **Tecniplast Australia**.
All web references were accurate in January 2026.

Contents

Executive Summary

This report presents the discussions and findings from a forum focusing on various aspects of animal ethics and research methodologies. The discussions are categorised into four areas: The Regulation of Animal Research; Culture of Care and the AEC; The Hidden Costs of Routine Procedures and The 3Rs (Reduction, Replacement, Refinement);

The day was introduced by Professor Alastair Sloan from The University of Melbourne, who highlighted the importance of openness and the 3Rs in delivering excellent research.

Discussion 1, on the role of Animal Ethics Committees as internal regulators of institutions, was led by Dr Mandy Errington (EthiQualia), whose session considered what it means for AECs to act as regulators and and how committees can use conditions of approval as a practical tool to protect animal welfare while supporting good research. She considered the regulatory tasks undertaken by the AEC, and the tools that they can use to guide and inform their deliberations and the boundaries that shape conditions of approval. These concepts were explored by participants through a fictional example that helped them consider how approvals are and should be applied.

In Discussion 2, Bella Lear (UAR Oceania) spoke about the meaning of culture of care as it is now framed by the laboratory animal science community, with a presentation about the meaning of “care” in a policy and a workplace context, including the dimensions model, which has become increasingly utilised in animal research contexts. Her session included a workshop that focused on the attentiveness and compassion dimensions by inviting participants to consider projects from an empathic point of view.

Carlee Mottley (Monash University) led Discussion 3 on the hidden costs of routine procedures in animal research. Her talk invited participants to Her talk invited participants to better appreciate the technical difficulties of some common procedures. She explored how factors around animal physiology, such as atypical situation of organs, can sometimes lead to errors in the administration of test compounds, which can occasionally be harmful to both animal welfare and the scientific validity of the procedures.

In Discussion 4 Stephen Turnock of the UK’s NC3Rs introduced a session about 3Rs initiatives taking place in Victoria. He presented an overview of 3Rs priorities, focusing on the role of AECs and what they can reasonably request through project applications. This short presentation was accompanied by three additional presentations offering insights into recent and current 3Rs initiatives taking place in Victoria; the 3Rs in a high containment animal facility, application of the 3Rs to a complex poultry respiratory model and the use of experimental design applied to breeding procedures to substantially reduce the numbers of animals used in a rodent facility.

Discussion 1

Regulation

Dr Mandy Errington (EthiQualia) led a highly participatory session on what it means for AECs to act as regulators, and how committees can use conditions of approval as a practical tool to protect animal welfare while supporting good research.

The discussion began by widening the frame as participants identified all those who regulate animal care and use in Victoria, drawing distinctions between:

- Regulation (the activity),
- Regulations (the rules),
- The Regulator (the people or bodies who ensure the rules are followed).

Participants explored the idea that regulation is not only formal and legal, but also includes informal influences such as peers, professional bodies, funders, accreditation schemes, community expectations and the animals themselves, whose behaviours and needs shape day-to-day decisions and standards of care.

Mandy emphasised that AECs sit within a clear legal and ethical authority. In Victoria this includes the POCTA Act, associated regulations, and mandatory codes of practice, with the Australian Code positioning the AEC as the institution's internal mechanism for ethical review and compliance oversight. Understanding the purpose clauses of these instruments helps clarify what the system is trying to achieve, and what it requires.

AECs provide:

- An authorisation environment (approval, competency, guidance, conditions),
- A monitoring environment (post approval monitoring, variations, site visits),
- An assurance environment (reviewing how the system is working and advising on improvement).

Conditions of approval form a key part of the regulatory toolkit, clarifying expectations, strengthening accountability, and enabling proportionate oversight of higher risk work. For these outcomes to be possible, the conditions of approval must be clear, achievable, monitorable, and treated as mandatory. These conditions are not suggestions, not a substitute for a complete application, and should be distinct from general communication with applicants.

Through discussion of an example scenario participants tested how they might vary conditions of approval dependent on an investigator group's prior track record and engagement. A key concept identified by participants was "responsive regulation": committees can legitimately apply different levels of oversight based on evidence of risk and past compliance, without slipping into bias or expectations based solely on trust.

At the time of the session there were opportunities to shape the wider regulatory system through contribution to a public consultation on Victorian reforms and engagement with the NHMRC Code review, alongside a call to contribute to research on how committee culture affects ethical oversight.

Figure 1. Considerations of conditions attached to AEC license approval.

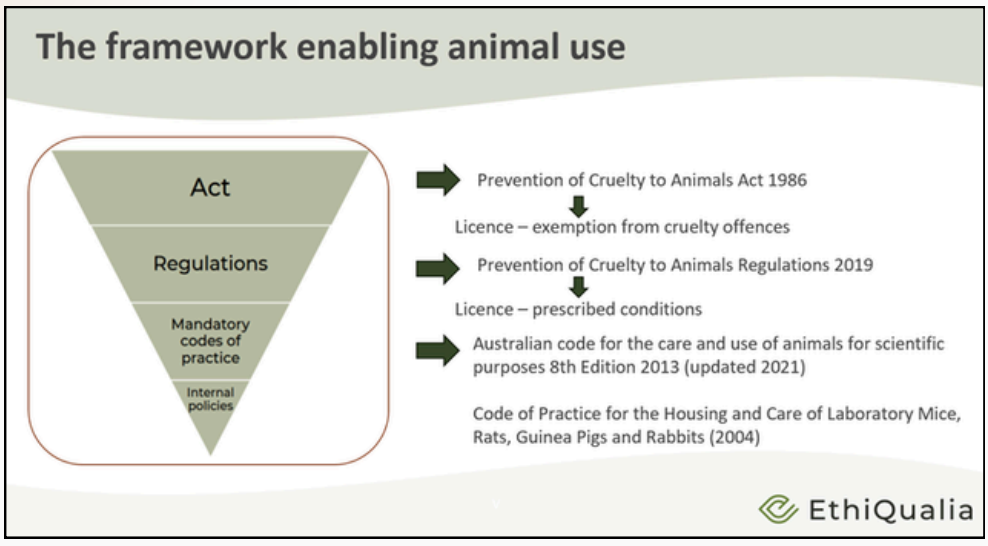


Figure 2. Regulatory framework protecting research animals in Victoria

Discussion 2

Culture of Care

This discussion was led by Bella Lear (UAR Oceania), who framed culture of care as distinct from, but complementary to, welfare and compliance. Drawing on social science and ethics, she outlined a working definition of a caring organisation as one that is attentive, responsible, competent, and compassionate. A key distinction was made between caring for animals (the physical delivery of welfare) and caring about them (the relational and emotional dimension), arguing that good welfare can exist without genuine care, but culture of care cannot.

Bella positioned AECs as critical actors in this space, not only through formal approvals but through the signals they send about what matters, whose voices are heard, and how animal experiences are discussed.

Participant discussion in this session was focused through an animal empathy exercise designed by the UK's RSPCA. This exercise asked participants to consider what animals in the scenario projects experience, how they might feel, and how negative impacts could be reduced.

Novelty and disruption were identified as major sources of stress for the animals in the scenarios. Repeated exposure to new environments, handlers, procedures, and housing arrangements were seen as cumulative burdens. As a result, habituation emerged as one of the most important refinements. Calm, predictable routines and allowing animals time to settle were felt to significantly reduce stress without altering experimental aims.

Discussions noted that mouse experiences could be improved by gentle and competent handling, rotating injection sites, returning highly stressed individuals to the cage and coming back later, careful cage movement to avoid jarring, and using positive reinforcement such as treats where permitted. Groups also highlighted post-procedure comfort measures, including warming after cold water tasks and mitigating isolation stress through divided cages, sensory contact with cage mates, or use of familiar bedding.

For zebrafish, participants found empathy more challenging, reflecting that it is easier to relate to mammals than fish.They argued that such an empathy challenge was a reason to be more deliberate in the care of fish. Examples of enrichment for fish that were discussed included offering hiding opportunities and visual barriers. Non-invasive options such as printed substrates or external visual features were also considered important.. One group shared recognised behavioural indicators of stress in zebrafish.

Participant groups shared that while AECs often consider the cumulative burden, explicit discussions of animals' lived experiences are rarely given adequate time, as they compete for space in full agendas.

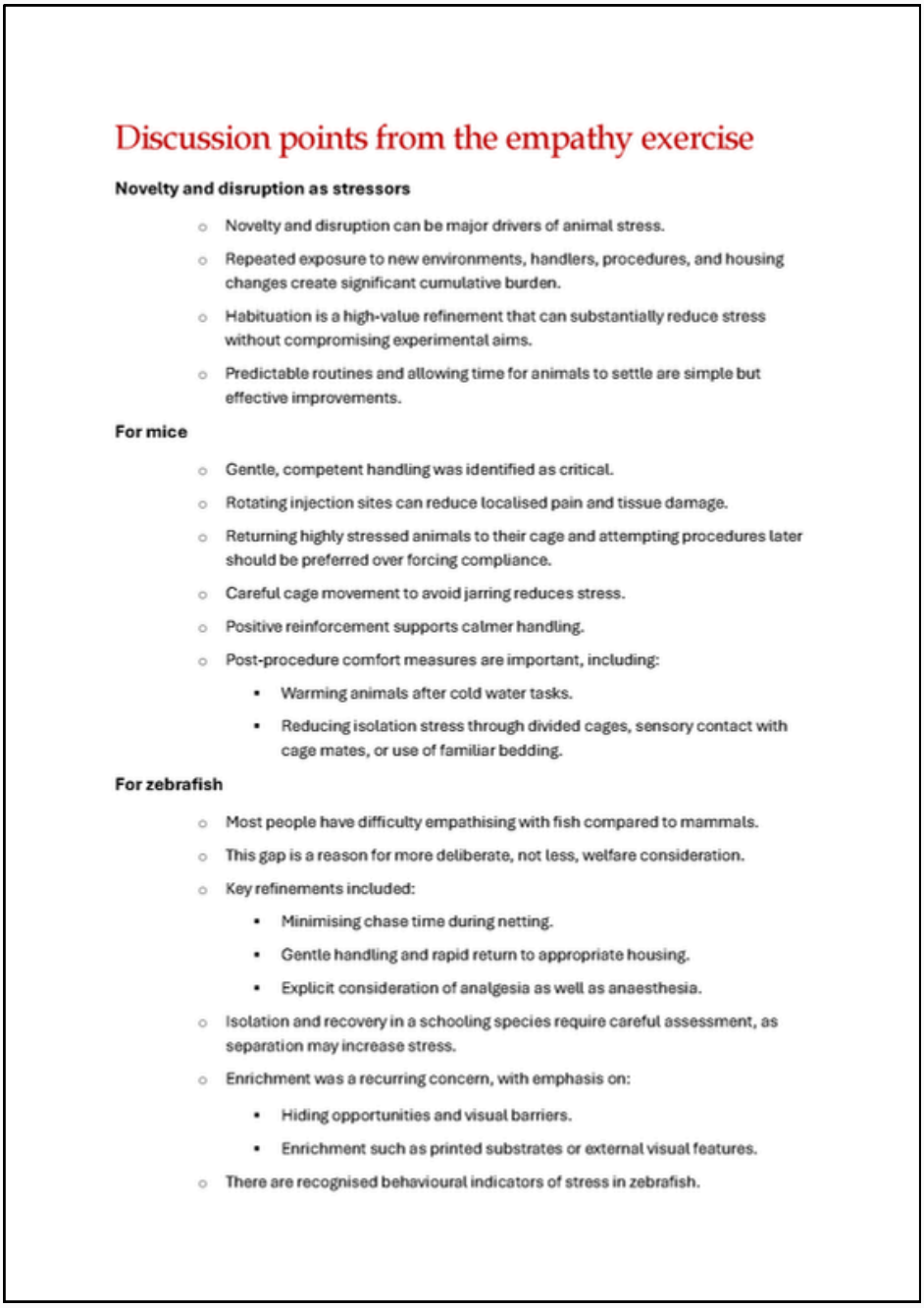


Figure 3. Discussion points compiled following the RSPCA's Animal Empthy excercise

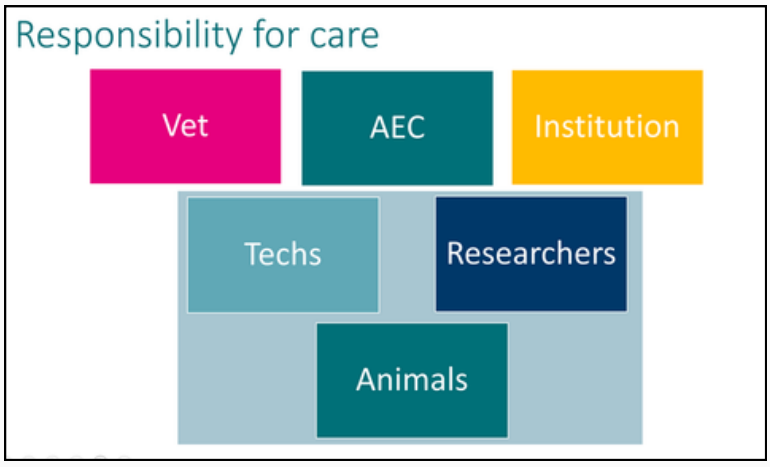


Figure 4. Responsibility for care of research animals

Discussion 3

The Hidden Costs of Routine Procedures

Carlee Mottley (Monash University) led an interactive session examining how routine animal research procedures can sometimes carry significant, often underestimated welfare impacts in a small number of animals, and how Animal Ethics Committee (AEC) scrutiny can expose risks that familiarity tends to obscure.

Using a seemingly simple protocol involving intraperitoneal (IP) injections, participants quickly identified how much critical detail is often missing from applications. Discussion focused on injection frequency and duration, needle length and insertion depth, site selection, and whether alternative routes had been genuinely explored. Participants also challenged assumptions about monitoring, noting that skin penetration alone should prompt enhanced observation.

The session highlighted how high-frequency techniques can slip into "autopilot," particularly when adverse events appear rare. Participants recognised that even low individual risk can translate into substantial cumulative harm across many animals. Case examples showed how necropsy findings sometimes revealed organ injury following IP injections, demonstrating how welfare impacts may remain hidden without systematic review.

Participants discussed competency drift, noting that although experience assists with reducing the incidence of adverse events during and post-procedures, it does not always guarantee good technique, particularly when staff move between institutions with differing welfare standards. Ongoing training and review emerged as essential safeguards.

Post-mortem data comparing retro-orbital bleeding, cheek (submandibular) bleeding, and other sampling methods prompted nuanced discussion. While retro-orbital bleeding can be associated with high rates of ocular trauma and infection, participants acknowledged that it may be necessary for specific scientific purposes when performed by experts. Conversely, cheek bleeding, often viewed as a refinement, can sometimes cause significant hidden harm, including muscle and gland damage, vascular injury, and reduced food intake.

The group also examined oral gavage, where published evidence of aspiration, sinus contamination, and mortality in a small cohort of rats led to closer scrutiny of equipment choice, restraint quality, and voluntary dosing alternatives. Participants agreed that repetitive or prolonged restraint itself can be a potential source of cumulative harm, particularly in older animals.

The session concluded that AECs provide a critical defence against normalised harm and invited participants to ensure the scrutiny of routine procedures like those discussed here, to prevent familiarity from becoming complacency.

Injections - Intraperitoneal

MIS-INJECTION

University of Wollongong

Position Statement on

Intraperitoneal Injections in Rodents

"IP injection should only be used when a strong case can be made that other routes of administration are unsuitable"

1. Publications cited on IP injection in rodents.

Misinjection rate	Species	Reference
14%	Mice	Steward et al (1968) Errors in the technique of intraperitoneal injection in mice. Appl Microbiol 16(9) pp 1418-9
40% to 100%[a]	Mice	Walwoort HC (1991) Assessment of distress through pathological examination. In: Animals in Biomedical Research: Replacement, Reduction and Refinement: Present Possibilities and Future Prospects (Hendriksen CFM, Koeter HBWM, eds). Amsterdam: Elsevier, 265–71. [Cited by Gaines Das and North – see below]
10% to 20%	Not stated	Claassen V (1994) Neglected factors in pharmacology and neuroscience research. In: Techniques in the Behavioral and Neural Sciences. Vol. 12. (Huston JP, ed). Amsterdam: Elsevier. [Cited by Gaines Das and North – see below]
17%	Mice	Gaines Das, R and North, D (2007) Implications of experimental technique for analysis and interpretation of data from animal experiments: outliers and increased variability resulting from failure of intraperitoneal injection procedures. Lab Animals 41: 312–320
6%[b]	Rats	Coria-Avila et al (2007) Cecum location in rats and the implications for intraperitoneal injections. Lab Anim (NY) 36(7):25-30
17%	Rats	Zatroch et al (2017) Refinement of intraperitoneal injection of sodium pentobarbital for euthanasia in laboratory rats. BMC Vet Res 13:60 pp1-7. DOI 10.1186/s12917-017-0982-y
7% to 17%[c]	Mice	Ballard (2009) Intraperitoneal route of administration - how accurate is this technique? An Tech and Welf. 8(1) pp.17-18
13% to 59%[c]	Rats	Ibid.
3% to 10%	Mice	Inoue et al (2009) Comparison of subcutaneous and intraperitoneal injection of D-luciferin for in vivo bioluminescence imaging. Eur J Nucl Med Mol Imaging (2009) 36:771–779. DOI 10.1007/s00259-008-1022-8. Also 3 cited references.
5% to 16%	Mice	Wokke, E (2017) Refinement: Evaluating stress and accuracy of different intraperitoneal injection techniques in mice. Thesis.

[a] n = 25

[b] Misinjection was only assessed by visual examination for injury to abdominal organs.

[c] First figure is injection on right hand side, second figure is injection on left hand side. All injections conducted after death.

Figure 5. This table, which informs the University of Wollongong position statement on IP injections in rodents, shows the reported incidence of misinjection.

Decision Making

SUGGESTIONS

Why did they choose that procedure/technique?

Is it the **most suitable** procedure, or just the most convenient?

Is it being conducted according to **best practise**?

What are the **welfare impacts**?

For **how long** and how **frequently** is the animal restrained?

Will anaesthetic **help** or is it a **confounder**?

How **experienced** is the operator?

Are **adverse events** caused by the model/treatment, or because of **poor procedural technique**?

How frequently does an injection result in a **mis-injection**?

Figure 7. AEC considerations and decisions on the use of routine procedures.

Discussion 4

The 3Rs: An overview and three presentations

This session was led by the Dr Stephen Turnock, of the NC3Rs in the UK, who introduced this year's 3Rs presentations by outlining key global priorities for the 3Rs.

Focusing on advancing the 3Rs through good practice, Stephen examined what Animal Ethics Committees (AECs) can realistically require and enable through project review and impact on institutional culture. He began by outlining the role of the UK's NC3Rs, which was the first national funding body specifically focused on supporting the 3Rs. Wellknown throughout the world, the NC3Rs provides training, experimental design, and implementation support across academia, industry, CROs, and government. Its focus is on scientific rigour, animal welfare, and research value.

Rather than treating the 3Rs as a single concept, replacement, reduction, and refinement were considered separately to highlight the distinct barriers and challenges associated with each.

For replacement, specific challenges lie in confidence and knowledge gaps. While animal studies often address whole-body physiology and off-target effects that remain difficult to model fully *in vitro*, Stephen argued that replacement should be treated as a continuum, not an all-or-nothing decision. He encouraged AECs to expect applicants to show the pathway that led them to animal use, including prior *in vitro*, *in silico*, and toxicology work, and to demonstrate how non-animal methods are being developed alongside animal studies. He cautioned against approving long-standing projects that remain unchanged despite rapid advances such as organ- and body-on-a-chip systems. Tissue and data sharing emerged as underused but powerful tools to support replacement across the wider research ecosystem.

A key challenge for reduction is in overcoming the idea that using fewer animals is always the most ethical option, as both under- and over-powered studies waste animals. AECs should require clear sample size justification, attention to experimental units, and measures that improve internal and external validity, supported by established design and reporting tools.

The main challenges in developing and implementing refinements are cultural resistance, cost concerns, and uncertainty about the benefits. These can be best-resolved when refinements are evaluated, rather than assumed to help. Stephen introduced the "Three Hs" of housing, husbandry, and habituation, as a framework that extends the 3Rs beyond procedures.

Stephen concluded by positioning AECs as enablers of progress: by asking better questions, expecting evidence, and supporting training and evaluation, committees can advance all three Rs without compromising science.

Welfare wins! 3Rs in high biocontainment

Dr Mike Kelly and Natascha Dollak, CSIRO ACDP

Dr Mike Kelly (CSIRO's Australian Centre for Disease Preparedness, ACDP) delivered a presentation written by Natascha Dollak (ACDP Animal Studies Team), which gave a practical overview of ensuring animal welfare practices and advancement of the 3Rs, while dealing with the limitations and challenges of working in a high-containment environment.

ACDP is Australia's national high-biocontainment facility and a jewel of Australian research, providing protection to livestock, aquaculture, and public health from emerging infectious diseases. Its large-animal facility includes 26 PC3 rooms and two PC4 rooms, enabling work with high-consequence pathogens under stringent biosecurity, safety, and decontamination requirements. While the constraints of containment shape how work is done, they do not limit the ambitions of the team to achieve excellent animal welfare, and they often drive higher standards.

Animal welfare and consideration of the 3Rs begin well before animals enter the facility. Teams invest heavily in pre-study planning, including intensive staff training, preparation for adverse and emergency scenarios, and close collaboration with researchers to refine study design. Early engagement ensures right-size cohorts and enables the team to tailor monitoring to the realities of containment, identifying welfare risks early so that interventions are planned rather than reactive.

Reduction and replacement are central to ACDP's procedural training. Staff build competence using anatomy familiarisation and non-live methods that include models, simulators, butcher's meat, and post-study carcasses. This avoids unnecessary live animal use, enables appropriate tissue reuse, and improves technical accuracy when animals are involved

Refinement underpins the entire program. Mike shared the example of a layered enrichment strategy designed for highly controlled environments, including positive reinforcement training to increase choice and reduce restraint. Target training in pigs, which is now also used with cattle, allows animals to voluntarily present for sampling, improving both welfare and staff safety. Environmental enrichment provides rest support, social contact, nutrition, and sensory and cognitive stimulation.

ACDP has a culture of continuous improvement, conducting post-study retrospectives after every project to update training and ensure the adoption of innovations such as acclimation monitoring sheets and crepuscular lighting to better align with species-specific rhythms.

In vitro coinfection modelling: understanding chicken upper respiratory pathogens dynamics with cell monolayers and tracheal organ cultures

Hasitha Himali Disanayaka, The University of Melbourne

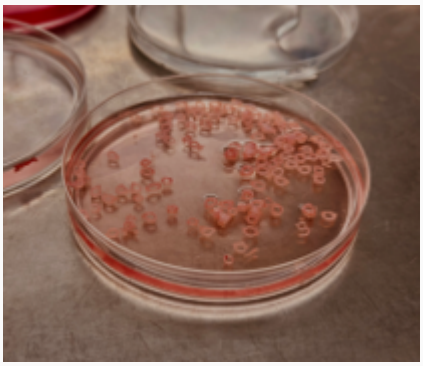
Hasitha Himali Disanayaka (Melbourne Veterinary School, The University of Melbourne) delivered a practical, researcher-led account of how the 3Rs can be embedded into everyday scientific decision-making, drawing on her doctoral research into respiratory coinfections in poultry. Her presentation showed how careful experimental design, tissue sharing, and the strategic use of layered model systems can substantially reduce animal use while still addressing biologically complex and industry-relevant questions.

Himali began by framing the scientific challenge. Upper respiratory tract infections cause significant economic loss in the poultry industry and are frequently driven by coinfections, where multiple pathogens interact within a single host. Understanding these interactions is essential for improving diagnosis and treatment, but different questions sit at different levels of biological complexity, creating both scientific and ethical design challenges.

A central theme was matching the model to the question. At the cellular level, Himali uses cell monolayers, including continuous cell lines and primary cells. Continuous cell lines provide a clear example of replacement, enabling repeated experiments without ongoing animal use while supporting detailed study of pathogen entry and replication. Primary cell cultures, such as chicken embryo lung cells, function as a reduction strategy. Embryos are euthanised before full neural development, and a single embryo can generate multiple cell types — lung, kidney, and fibroblasts — for use across several projects. Within her group, egg use is actively coordinated to maximise tissue sharing and minimise waste.

At an intermediate level, Himali highlighted tracheal organ cultures (TOCs) as a powerful three-dimensional *ex vivo* model. Tracheas are sourced opportunistically from other approved studies, demonstrating tissue sharing in practice. A single trachea can yield around 30 TOCs, preserving tissue architecture and function while allowing assessment of ciliary motion, mucus production, and infection dynamics, including real-time visualisation using fluorescent pathogens.

Himali concluded by stressing that whole-animal studies remain necessary for questions involving systemic immunity, but only after lower-complexity systems have been exhausted. The discussion underscored the value of closer communication between researchers and AECs to ensure this preliminary 3Rs work is clearly visible during ethics review.



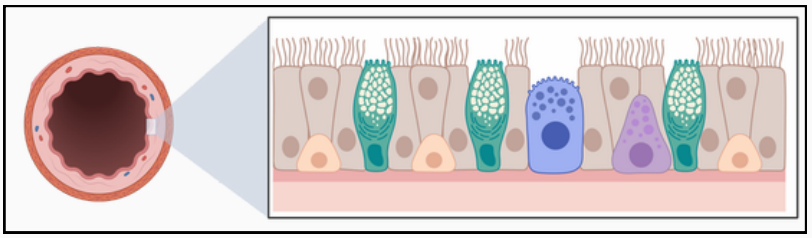


Figure 8. Tracheal organ cultures (TOCs), a simple *ex vivo* system with transverse sections of tracheal rings extracted from embryos or hatched bird. One trachea provides around 30 TOCs.

Responsible breeding and accountability: embedding the 3Rs in animal supply

Brent Fullerton, The Peter Macallum Institute of Cancer Research

Brent Fullerton, Senior Animal Core Manager at The Peter MacCallum Cancer Centre (Peter Mac), delivered a detailed and candid account of how animal breeding itself must be subject to the same ethical scrutiny as experimental use. His presentation focused on a large, AEC-approved breeding project for well-characterised genetically modified mouse strains, developed to address an often overlooked part of animal research: how experimental cohorts are produced.

Brent began by describing the historical problem. Breeding at Peter Mac was governed by multiple SOPs, but no single framework captured an animal's full life course. This fragmented approach obscured cumulative welfare impacts and made it difficult for staff and the AEC to understand true animal numbers. Six years ago, the institution consolidated breeding into a dedicated AEC project. This marked a major cultural shift. It became the largest project the AEC had ever reviewed, with animal numbers far exceeding those seen in experimental protocols. To manage biological variability in litter size and losses, the team based projections on five years of historical usage data reported to Animal Welfare Victoria.

The project established firm boundaries around responsible breeding. Animals cannot be held beyond 12 weeks unless they are entering an approved experiment. Only strains explicitly listed on approved projects may be bred, and a fully funded cryopreservation programme prevents the unnecessary maintenance of live colonies. Each strain requires explicit AEC justification, tightly linking breeding to genuine scientific need.

Accountability and transparency sit at the core of the system. Researchers must justify breeding requests with clear experimental plans, not speculative future use. Mandatory monthly meetings between laboratories and animal staff reinforce shared responsibility, and colonies may be reduced to maintenance levels when plans lapse. Brent highlighted the pivotal role of animal technicians, whose ability to frame decisions in terms of cost savings and avoiding animal deaths has driven real behavioural change.

Robust data collection underpins oversight. Detailed monthly reports track production, exits, phenotypes, and health issues, with trends monitored continuously rather than relying on fixed loss thresholds. A centralised database replaced fragmented records, enabling early intervention.

Brent concluded that breeding is foundational to ethical science. With strong AEC support, transparent data, and empowered animal care staff, Peter Mac has reduced surplus breeding, strengthened welfare oversight, and embedded the 3Rs at the very start of the research pipeline.

Figure. 9 Mouse and cardboard tube
Credit: Understanding Animal Research 2026.
Image use under licence: cc 4.0

Annex I

Agenda

09:30 - 10:00	Arrival and refreshments
10:00 - 10:30	Welcome and introductions
10:30 - 11:30	**Discussion 1: Regulation**
11:30 - 11:40	Comfort break
11:40 - 12:40	**Discussion 2: Culture of Care**
12:40 - 12:45	Morning wrap-up
12:45 - 13:45	Lunch
13:45 - 14:45	**Discussion 3: Procedures**
14:45 - 15:15	Break
15:15 - 16:15	**Discussion 4: The 3Rs**
16:20 - 16:30	Closing comments
16:30 - 18:00	Networking drinks

Annex II

Speakers

Bella Lear

Chief Executive, Understanding Animal Research Oceania
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Bella is a science communicator, and social researcher, who supports positive social change around scientific issues. As Head of Engagement at Understanding Animal Research, Bella created stakeholder and public engagement initiatives to change thinking about animals used in research. She was an instigator of the Concordat on Openness on Animal Research in the UK, which she led for many years, driving open and constructive communication between the research community, policy makers and the public. Now leading Understanding Animal Research Oceania, Bella provides communications support to build better understanding and representation of animal-based research in Australia, New Zealand and the Oceania region.

Dr Mandy Errington

Founder and Principal Consultant, EthiQualia
mandy@ethiqualia.com.au

Mandy has extensive industry and government experience and connections. She is a veterinarian and member of both the Animal Welfare and Medicine and Management of Laboratory Animals Chapters of the Australian and New Zealand College of Veterinary Scientists. Mandy's combination of veterinary qualifications, formal audit training and regulatory and board experience enables both high level and detailed analysis of clients' organisational structure, governance frameworks, compliance management systems, policies and operational practices, to identify key residual risks and provide solutions.

Carlee Mottley

Senior Training Officer, Monash University

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A Senior Training Officer at the Monash University Animal Research Platform, Carlee holds a Bachelor of Animal Science and has over thirteen years of professional experience within the laboratory animal science sector, including roles as researcher, technician, facility manager, consultant, and trainer. Currently a full-time trainer, Carlee delivers instruction to hundreds of animal technicians and researchers regarding procedures such as injections, blood collection, and anaesthesia. Through this role, she promotes the adoption of evidence-based, best-practice methodologies designed to enhance both animal welfare and the integrity of research outcomes.

Professor Alastair Sloan

Pro Vice-Chancellor (Research Collaborations), the University of Melbourne

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Professor Sloan joined the University of Melbourne in 2020 as the Head of the Dental School. A highly accomplished bioscientist, he holds a BSc in Biomedical Sciences from the University of Wales, and a PhD in Oral Pathology from the University of Birmingham. His research focuses on tissue repair and regeneration, the role of stem cells in oral tissue repair, development of innovative materials for clinical use and 3D organotypic culture systems for tissue repair and engineering. Professor Sloan was appointed Chair of the Australian and New Zealand Council for the Care of Animals in Research and Teaching (ANZCCART) in 2023, and is vice-president of the International Association of Dental Research (IADR) Australia and New Zealand Division.

Dr Stephen Turnock

Programme Manager, NC3Rs

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Stephen is a programme manager at the UK's National Centre for the 3Rs (NC3Rs), where his role focuses on identifying opportunities to optimise animal use to avoid wastage at all stages of the research process and embed best practice in *in vivo* research across the biosciences. Previously, Stephen worked within research institutions to support the embedding of the 3Rs within research programmes, working directly with research staff, and with the ethics committees. He holds a PhD in Cancer Biology, undertaken at the Institute of Cancer Research, and he is a member of the Royal Society of Biology (RSB) Animal Licence Holder Accreditation Board.

Dr Mike Kelly

Facilities Manager, CSIRO ACDP
mike.kelly@csiro.au

Dr Michael L Kelly is a Facilities Manager at CSIRO's Australian Centre for Disease Preparedness (ACDP) in Geelong, Victoria. For the past three years, he has provided operational oversight of the site's high-containment, Large Animal Facility (LAF) and its staff, under the Animal Studies Team (AST) umbrella. He manages and delivers animal-based research projects, focused on emerging infectious disease threats. His team's efforts help protect Australia's multi-billion-dollar livestock and aquaculture industries, and the general public, while maintaining and pioneering high standards of animal welfare. Mike holds a PhD in Zoology and has over a decade's experience in scientific research. He has worked at research organisations across the world and has a passion for ethical research with functional applications. He also likes surfing and The Beach Boys.

Hasitha Himali Disanayaka

PhD Student, University of Melbourne Veterinary School
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Hasitha Himali Disanayaka is a PhD student at the Asia-Pacific Centre for Animal Health (APCAH), Melbourne Veterinary school, Faculty of Science. Her research focuses on studying the *in vitro* coinfection dynamics of Mycoplasma gallisepticum (MG) and Infectious Laryngotracheitis Virus (ILTV), two respiratory pathogens that cause severe economic losses to the poultry industry. Using *in vitro* coinfection models with both primary and continuous cell lines, along with tracheal organ cultures, Himali's studies look at interactions between these pathogens and their host. Her work aims to reduce reliance on traditional animal models, encouraging more sustainable and responsible methods in animal research.

Brent Fullerton

Senior Animal Core Manager, The Peter MacCallum Cancer Centre
brent.fullerton@petermac.org

Brent is the current Senior Animal Core Manager at the Peter MacCallum Cancer Centre in Melbourne. With a career spanning 35 years, Brent has worked with a vast variety of species ranging from non-human primates to mice. He has a strong passion for advocating for the animals and the animal technicians within the industry. This is evident from his participation in various AEC's and his industry representation as the Co-Secretary of the Australian and New Zealand Laboratory Animal Association, as well having an advisory role on the Animal Care and Management Training Provider Committee.

Annex III

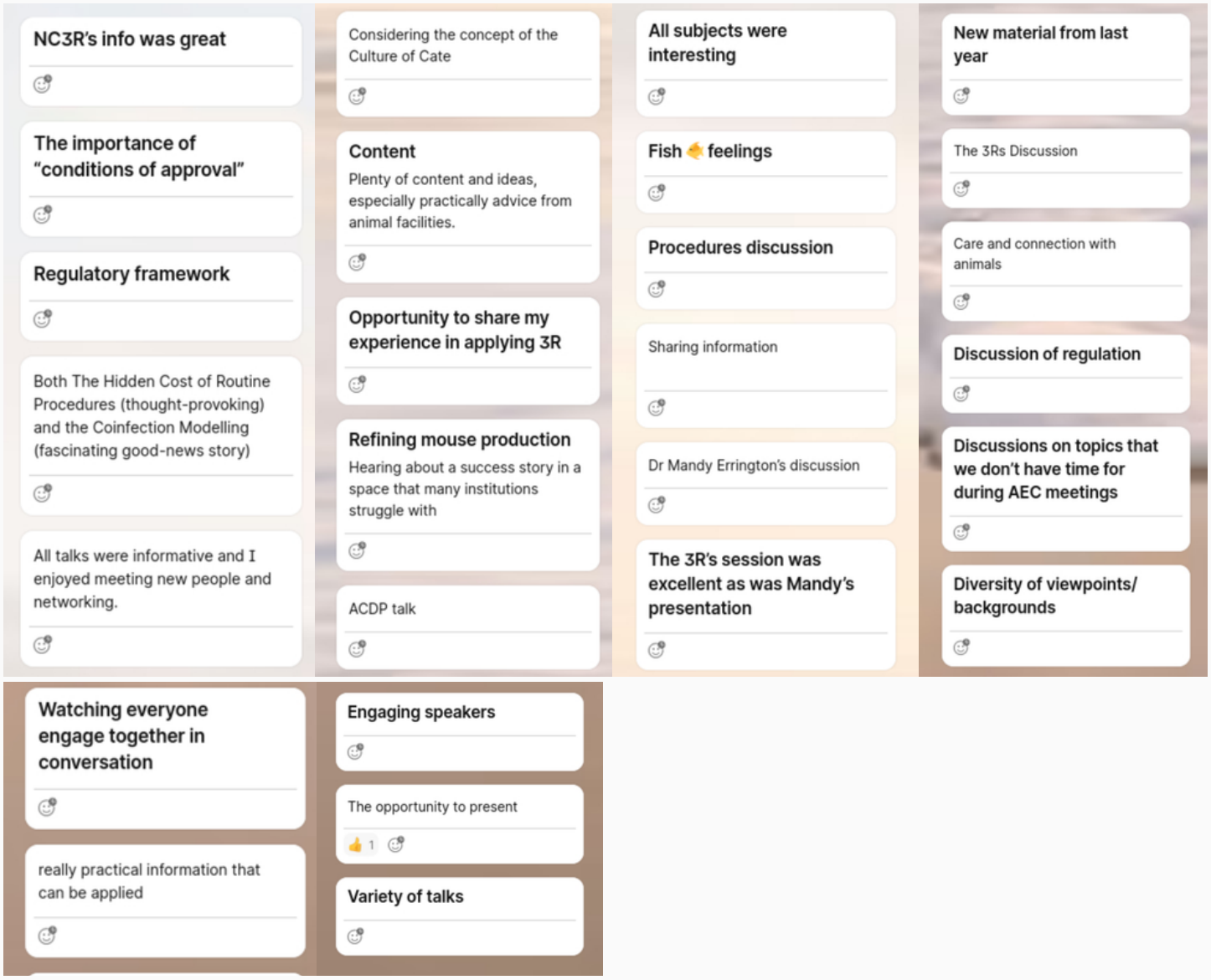
Participating organisations

The University of Melbourne	Understanding Animal Research Oceania
Deakin University	St Vincent's Hospital
Monash University	Alfred Research Alliance
ACDP / CSIRO	RMIT
The Florey Institute	WEHI
La Trobe University	The Murdoch Children's Research Institute
EthiQualia	Victoria University
Victorian Schools Animal Ethics Committee	The Hudson Institute of Medical Research
Monash Institute of Pharmaceutical Sciences	The Peter MacCallum Cancer Institute

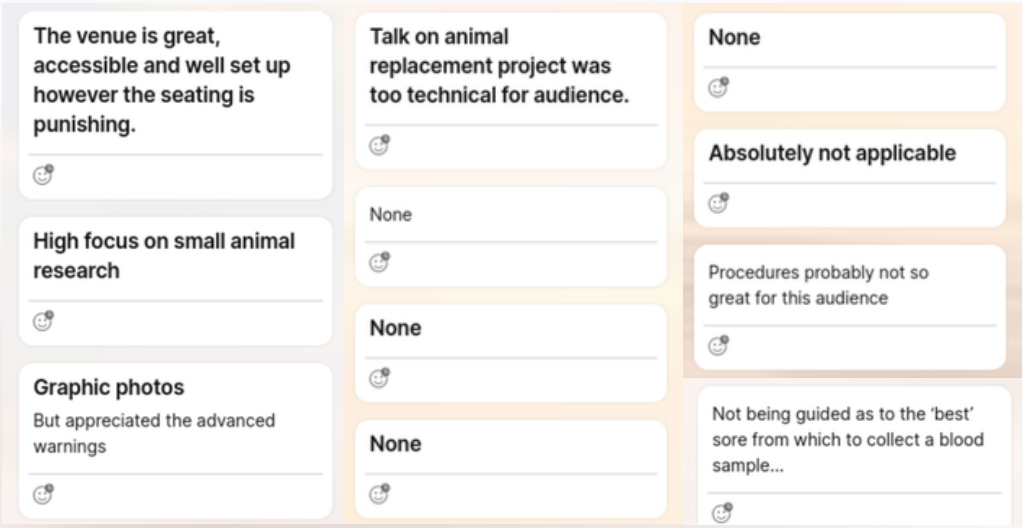
Annex IV

Participant feedback

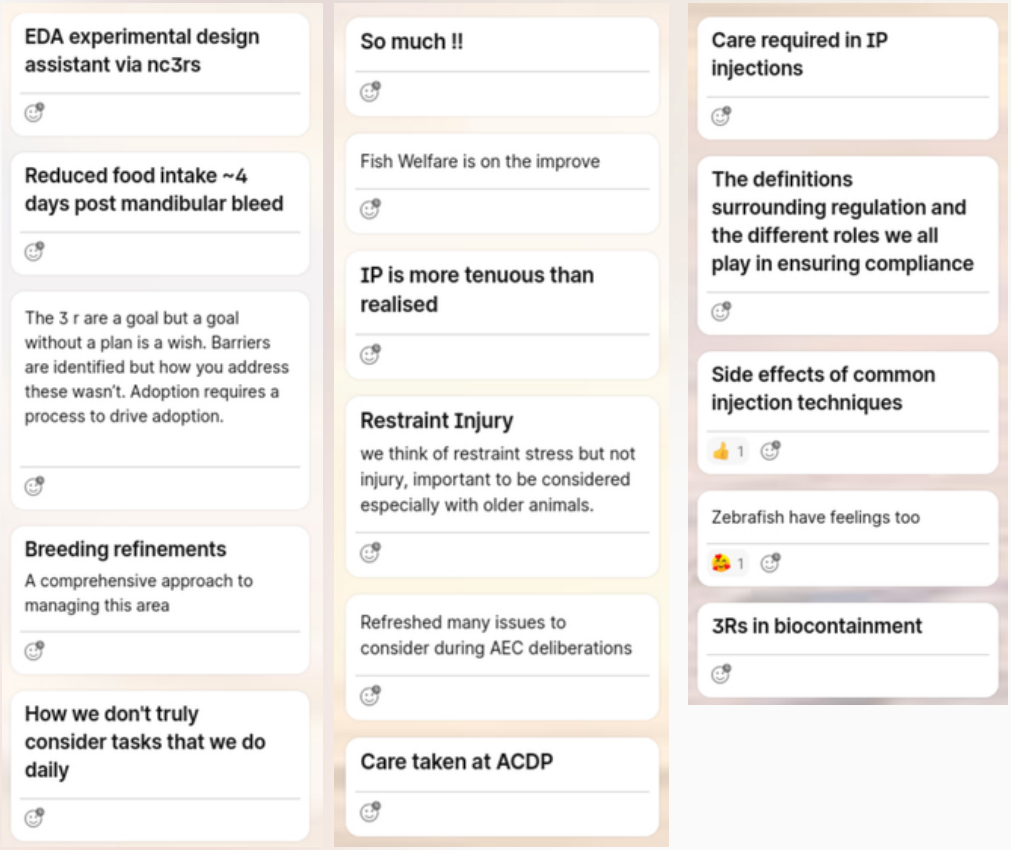
The best bit



The worst bit



Something learned



Something to share

3H's

3H's good to hear about

3R initiatives

Sex biased research

3Hs

Use of both sexes for animal research

NC3Rs tools

Experimental Design Assistant (EDA) and Evaluating Environmental Enrichment (EEE)

Many thanks for opportunity to attend. AEC prof dev very important & greatly neglected.

Retrospective post study by ACDP interesting, more detailed analysis than a general final report

Do IP injections in the afternoon

Annex V

Selected references & resources

Animal research and ethics resources

UAR Oceania
https://www.uaroceania.org

ANZCCART Australian Openness Agreement
https://anzccart.adelaide.edu.au/openness-agreement

EthiQualia
https://ethiqualia.com.au

The AEC as Internal Regulators

Freiberg A. Regulation in Australia. Sydney, Australia: The Federation Press, 2017

https://www.nhmrc.gov.au/research-policy/ethics/animal-ethics/review-australian-code-care-and-use-animals-scientific-purposes

https://engage.vic.gov.au/new-animal-welfare-act-victoria

The 3Rs

3RsC is the North American 3Rs Collaborative, with a wide range of free resources https://3rc.org/.

Experimental Design Assistant. eda.nc3rs.org.uk

Hoggatt AF, Hoggatt J, Honerlaw M, Pelus LM. A spoonful of sugar helps the medicine go down: a novel technique to improve oral gavage in mice. J Am Assoc Lab Anim Sci. 2010 May;49(3):329-34. PMID: 20587165; PMCID: PMC2877306.

National Health and Medical Research Council (2013) Australian code for the care and use of animals for scientific purposes, 8th edition. Canberra: National Health and Medical Research Council.

National Health and Medical Research Council (NHMRC) 2017 (Updated July 2018), Best practice methodology in the use of animals for scientific purposes.

https://replacinganimalresearch.org.uk/resources/replacement-checklist

Norcopa website with details of 3Rs centres and events worldwide https://norecopa.no

NC3Rs is the UK 3Rs centre. Their website contains many valuable resources for driving the 3Rs
www.nc3rs.org.uk

Russell, W.M.S. and Burch, R.L. (1959) The principles of humane experimental technique, London: Methuen & Co. Limited.

Selected references & resources

The hidden cost of routine procedures

Arantes-Rodrigues, R., Henriques, A., Pinto-Leite, R. et al. (2012) The effects of repeated oral gavage on the health of male CD-1 mice. Lab Anim 41, 129–134

Assenmacher, C. A., Lanza, M., et. al. (2022). Post Mortem Study on the Effects of Routine Handling and Manipulation of Laboratory Mice. Animals, 12(23), 3234. https://doi.org/10.3390/ani12233234

Eichenbaum G, Damsch S, Looszova A, et. al. (2011) Impact of gavage dosing procedure and gastric content on adverse respiratory effects and mortality in rat toxicity studies. J Appl Toxicol. May;31(4):342-54.

Heimann M, Roth DR, Ledieu D, Pfister R, Classen W. Sublingual and submandibular blood collection in mice: a comparison of effects on body weight, food consumption and tissue damage. Laboratory Animals 44 (4) https://doi.org/10.1258/la.2010.010011.

Štrbenc M. (2025) Inconsistent terminology in rodent anatomy hinders appropriate blood sampling in laboratory animal science: A review of blood sampling techniques on the head of mice. Laboratory Animals.;59(3):332-341.

Zatroch, K.K., Knight, C.G., Reimer, J.N. et al. (2016) Refinement of intraperitoneal injection of sodium pentobarbital for euthanasia in laboratory rats. BMC Vet Res 13, 60.

https://norecopa.no/education-training/

Culture of Care

Klein HJ, Bayne KA. (2007) Establishing a culture of care, conscience, and responsibility: addressing the improvement of scientific discovery and animal welfare through science-based performance standards. ILAR J. 2007;48(1):3-11. doi: 10.1093/ilar.48.1.3. PMID: 17170491.

The International Culture of Care Network: collected resources on Culture of Care: https://norecopa.no/more-resources/culture-of-care

The RSPCA's empathy with animals resources: https://norecopa.no/more-resources/culture-of-care/resources/empathy-with-animals

Williams, A., 2021. Caring for those who care: towards a more expansive understanding of 'cultures of care' in laboratory animal facilities. Social & Cultural Geography, pp.1-18.

Robinson S, Sparrow S, Williams B, Decelle T, Bertelsen T, Reid K, Chlebus M. The European Federation of the Pharmaceutical Industry and Associations' Research and Animal Welfare Group: Assessing and benchmarking 'Culture of Care' in the context of using animals for scientific purpose. Lab Anim. 2019 Nov 19;54(5):23677219887998. doi: 10.1177/0023677219887998. Epub ahead of print. PMID: 31744380; PMCID: PMC7564339.

Roe, E. and Greenhough, B., 2021. A good life? A good death? Reconciling care and harm in animal research. Social & Cultural Geography, pp.1-19.

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