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## 2012 ANZCCART Conference

*Sheryl DeLacey and Geoff Dandie*

This year's conference was held in Perth WA from 24th to 26th July and, thanks to the efforts of the local organizing committee, was a great success. The magnitude of that success was measured in two key areas. The first and most obvious was the outstanding calibre of the speakers and their presentations in all sessions and the second measure was the number of local people who were able to come along to either their first ANZCCART conference or their first for a long time. Both meant that the efforts of the local organizing committee (Deirdre Bourke, Julie Bellamy, Kim Gifkins, Sarah Wickham, Joanne Davis and Chair Erich von Dietze) were greatly appreciated and universally praised by conference delegates as well as the staff and Board of ANZCCART.

This year we tried something a little bit different and started the conference with a series of informal meetings over coffee by AEC member category group. Most delegates felt that this was a good start to the conference albeit needing a bit more organization in some areas, so we will take that feedback on board and refine the idea for next year. Once the formal presentations began, it

quickly became apparent that we were in for a spectacular range of speakers that started with the Chief Scientist of Western Australia, Lyn Beazley and then progressed to a Nobel Laureate with Barry Marshall speaking about some of his work with both animal models and human guinea pigs. These early presentations set a cracking pace for the conference which carried delegates through the lunch break and into the afternoon session.

The first session after the lunch break started with a presentation exploring some of the practical and ethical issues associated with the study of dementia – both in patients and in animal models and went on to look at measures taken to protect populations of native animals like the koala on the fringes of our cities. This session wound up with a presentation from John Schofield, who in his usual erudite fashion, both educated and challenged the audience with a presentation that covered the importance of researcher training, establishing humane endpoints, experimental design and perhaps most important of all – ensuring that there are mechanisms in place that allow everyone to respond to unexpected events.

The next session started with a couple of presentations that focussed on issues of animal husbandry. The first discussed the important issue of minimising the over-breeding of animals which can be a real problem for animal facilities and the second presentation raised awareness of problems that can result in trying to cut corners during the establishment of a new facility.

The final presentation of the day really challenged a lot of delegates at the conference and tested the boundaries of the Code and potentially even legislation as it considered the use of animals or animal-derived materials in artistic (rather than scientific) research. The presenters made it clear that in spite of the Code's title (The Australian Code of Practice for the Care and Use of Animals for Scientific Purposes), the remit of an AEC should be considered more broadly to include relevant artistic (and other relevant) endeavours and went on to challenge the perceptions of AEC members with respect to the boundaries of research and their potential role. Not surprisingly, this presentation proved to be a hot topic of conversation during the informal session that followed.

Like day one, the second day of the conference started with a very high-profile speaker with scientist, clinician and former Australian of the Year, Fiona Wood addressing the conference. This amazing presentation outlined her journey in developing and patenting spray-on skin cells for treating a range of patients. Fiona's presentation highlighted the extent to which research involving animals is traditional and underpins the expectations of reviewers for both research grants and publications. In Fiona's case expectations of animal work also underpinned the expectations of regulatory bodies such as the Therapeutic Goods Administration (TGA) and also emphasised the importance of an interface between animal research and clinical practice. This was followed by an equally impressive presentation of discoveries made using sheep models to help ensure the effective survival of pre-term infants.

The important role animal models currently play in Alzheimer's disease and cancer research was considered at both a professional and occasionally a personal level. A message that emerged from these two sessions involving presentations from clinicians and those involved with more clinically based research was that collaborations between scientists and clinicians are important and allow clinical problems to be solved by research involving animals which is translated back into clinical trials

The presentation after lunch raised a number of important issues associated with the use of animals in tertiary teaching exercises – particularly those

associated with the training of veterinarians. This presentation highlighted the importance of taking a more holistic approach to practical training in this area and including a combination of both alternatives to the use of animals and animal-based practical classes to ensure that students develop their skills before handling animals and then refine them in preparation for their future career. The other two speakers in this session added a truly international perspective to the conference with the first considering biomedical research and the AEC system in Singapore and were followed by some recent progress made in South Africa that has seen an increasing level of awareness about the health and welfare of animals being used in research.

The late afternoon session brought interesting information about research into animal welfare with reports outlining studies of laboratory mice in relation to space and housing which showed that floor space was not the only issue for mouse wellbeing but height of the pen, group size, quality of the space and social interaction were important variables. This was followed by a series of excellent presentations that considered the importance of the experimental environment and its potential role in the stress response of animals, the development of some excellent monitoring guidelines for fish welfare and the vital role that undergraduate education can play in creating a culture that focuses on the welfare of animals among future researchers.

Day three started with an enlightening presentation about animal trapping and marking, with particular recommendation not to clip toes or "mutilate" wildlife but to use other devices for identification such as micro-monitors, paint (with caution to avoid compromising natural camouflage) and implants. The effective use of tracking devices to gain new knowledge and challenge assumptions about roaming behaviours and habitats was also demonstrated. The second speaker in this session raised a number of really important questions about public perceptions – particularly in relation to the management of native and pest animal species and questioned the way such perceptions can be driven by both the professional media outlets and social media, often without adequate input from the appropriate professionals.

The next session was devoted to the difficult topic of euthanasia with some fascinating and moving presentations from researchers in both medicine and biological sciences, staff in WA Department of Environment and Conservation (DEC) regarding the management of euthanasia of beached whales, and a presentation about euthanasia of large zoo animals with a public profile.

The principles emerging about euthanasia were:

- Trained and competent operatives;
- Minimal animal handling and restraint;
- Reliable and irreversible methods;
- Ensuring animals are not caused pain or distress;
- Rapid loss of consciousness and timely progression to death;
- Death compatible with the experiment;
- Safe euthanasia; and
- Cost-effective euthanasia.

An important component emphasised repeatedly was the competence of the operator so that animal death would be swift and painless.

The final session of the conference featured a series of papers that focused on the importance of adaptation of animals to the research environment and highlighted some of the unnecessary problems that can result from not allowing animals to adapt to the new and very different environment they will face in most research settings. This session concluded with a presentation that also covered the importance of adaptation to the research environment, but in this case, focused more on the need to properly train some animals to work with the researchers in a way that would ensure mutual safety and minimize the stress on both the animals and the researchers.

Overall this was a fascinating and thought-provoking conference and we wonder how Animal Ethics Committees across Australia and New Zealand might promote the attendance of both AEC members and researchers, who would all benefit from the experience, at future conferences.

Some key questions arising out of this conference in relation to the day-to-day operations of AECs were:

- How does an AEC evaluate competence in animal research procedures and how can we build capacity?
- What is sufficient justification for using, and potentially harming, animals?
- Is a researcher looking at a clinical problem working alongside a clinician and would it help their work progress?
- Where is the evidence base for animal welfare in experiments and how can we promote the acquisition of such knowledge?
- How can AECs promote knowledge about animal welfare in projects they are approving?

The book of Proceedings from this conference will be published on the ANZCCART web site as soon as all manuscripts to be submitted have been received and processed.

## **Lifelong Commitment to Animal Welfare Recognized by ANZCCART**

*Dr Geoff Dandie, CEO, ANZCCART*

A life-time commitment to the welfare of animals through work in a number of areas was formally recognised at this year's ANZCCART conference in Perth when Mr John Strachan was awarded Honorary Life Membership of ANZCCART.

John, who is senior partner in a prominent Adelaide law firm, has been enormously influential in both the South Australian and National animal welfare spheres for many years and in many guises. John initially joined the Board of ANZCCART when it moved to Adelaide in 1992 in his capacity as President of the local branch of the RSPCA (a position he held until he stepped down in 2008) & Vice President, RSPCA Australia – acting not only as an animal welfare advisor, but also served informally as ANZCCART's honorary legal counsel in matters ranging from looking at ANZCCART's ability to receive tax deductible donations, through to matters associated with our incorporation, indemnity insurance, etc. When the RSPCA formally withdrew from membership of ANZCCART in 1996, John stayed on the Board as the Animal Welfare member and strongly encouraged ANZCCART to offer greater support to Category C and D members as it was the perceived effectiveness of these people on AECs that had helped to address the greatest concerns of many individuals and organizations with deep concerns about the use of animals for scientific purposes. His work in this area still influences the direction by ANZCCART today.

When a number of Board Committees were formed in 1996, John served on the Management Committee and also served as Deputy Chair of the ANZCCART Board. After his term on the Board concluded, John continued to serve on the ANZCCART Council as Animal Welfare Member – a position he still holds today.

Over the years, John has also put his combined legal and animal welfare interests to good use and he helped to draft the South Australian Prevention of Cruelty to Animals Act when it was substantially revised in 1985 and was again influential in its subsequent revision to The Animal Welfare Act (1985) in 2008.

In addition to all the activities listed above, John has continued to devote a significant amount of time and energy to the welfare of animals in research and teaching. This work includes his continued role as an

external Chair of one of South Australia Animal Ethics Committees and helping out many local institutions by regularly speaking to new and experienced researchers and teachers at animal ethics training days around Adelaide. John has also expressed an interest in writing a history of ANZCCART when he eventually retires from legal practice.

The second recipient of Honorary Life membership, who was also formally recognized at the conference this year, was Dr Michael Rickard. Mike joined the Board of ANZCCART in 1995 and served as the CSIRO nominee Board member continuously until he retired from his position at CSIRO and therefore the ANZCCART Board in 2005. During his ten years of service on the ANZCCART Board, Mike served as Chairman for five years, was a member of the Strategy Committee and represented ANZCCART both nationally and internationally with enthusiasm and distinction.

As the CSIRO spokesperson for animal welfare, his association with ANZCCART goes back years before his appointment to the Board, when as leader of the CSIRO Animal Welfare Liaison Group, Mike would occasionally meet with the Board to discuss matters of mutual interest. After he joined the Board and as a member of numerous animal welfare committees and Boards, one of Mike's greatest strengths continued to be his ability to liaise and coordinate the activities of ANZCCART with the many like-minded organizations with whom he was associated. This was an important part of ensuring that ANZCCART remained at the forefront of all issues that fell within the domain of our operations.

Since retiring from CSIRO (and therefore the Board of ANZCCART), Mike continued to work for animal welfare in the research and teaching sector as a member and Deputy Chair of the AAWS Research and Teaching Sectoral Working Group from 2005 to 2011. He has also continued to serve on the Board of the Animal Welfare Science Centre, the Victorian and Australian Animal Welfare Advisory Committees, as well as other service organizations such as Rotary.

Even though Mike has spent much of his working life heavily involved with animal welfare and represented CSIRO and a number of government committees etc., he always ensured that ANZCCART's views and work were given a high profile when he spoke at relevant conferences and meetings, thereby helping to ensure the continued success of ANZCCART. Even today, he remains a staunch and vocal supporter of ANZCCART and we hope this will remain the case for a long, long time.

Nominations are now open for Honorary Life Memberships of ANZCCART for 2013 and more information about the award can be found at: <http://www.adelaide.edu.au/ANZCCART/awards/>

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### **2012 ANZCCART AEC Member of the Year Announced**

The winner of the 2012 ANZCCART AEC Member of the Year Award was Mr Michael Zampogna from Perth. The winner was announced at the ANZCCART conference dinner in Perth by the Chairman of the ANZCCART Board Dr Chris Prideaux.

Michael has had a long and productive (over 20 years) involvement with a number of Animal Ethics Committees (AECs) in WA. As a Category C member, Michael comes from a background which holds 'in principle' objections to the use of animals in science, especially when the advantages to animals themselves may be slim. Michael's fundamental adherence to his values is considerable. This means that working with an AEC to approve (at least some kinds of) scientific work with animals can be personally challenging for him. That Michael has served on AECs for over 20 years is a testament to the way in which he is able to conduct the debate, communicate his views, influence organisations, and ultimately arrive at a consensus decision, all while keeping people on side. Michael's fundamental perspective is that he would rather be part of the decision-making process, and thus have an invitation to influence decisions, than to be protesting about those decisions.

During his involvement with AECs, Michael has witnessed considerable changes. At each stage he has sought to influence and support changes which improve animal welfare and particularly those which reduce or eliminate the need to use animals in scientific endeavour.

He first served as a student representative on the Curtin University AEC in 1992 to 1993 before becoming a category C member on the University of Western Australia AEC from 1994 to 1996. He also began his long association with the Murdoch University AEC during this time and continues to be an active member of that University AEC. Michael has given over 18 years of service to the Murdoch AEC. His

attendance record at meetings is exemplary, rarely missing a meeting in those 18 years and believes that his role is essential for the effective functioning of an institution's AEC. Michael is able to bring the animal welfare point of view to meetings in a constructive and non-confrontational manner and he continues to bring new ideas and perspectives to the table. He frequently researches points of view and alternatives so that he brings constructive suggestions to a meeting. He has made a major contribution towards improving animal welfare for animals used for teaching and research purposes at Murdoch University through perseverance and many creative suggestions. Since 2005 Michael has also been a member of the Department of Environment and Conservation AEC. This gives him considerably diverse expertise across a range of AECs and therefore across a range of scientific work with animals.

Michael has held high-level long-term positions in animal welfare organisations in WA including Animal Liberation (WA) Inc. and the Australian & New Zealand Federation of Animal Societies (now Animals Australia). He founded the Vegan Society of WA in 1995 and currently coordinates Animals West Inc. He has nearly 30 years experience in communicating the policies and philosophies of animal welfare and rights to the community, media, government, business and educational institutions. This involvement gives him important expertise which he brings to AEC discussions and which helps him to focus on issues of concern to a Category C member. He is also regularly invited to give guest lectures on animal welfare at both Murdoch and Curtin Universities.

Nominations are now open for the ANZCCART AEC Member of the Year Award for 2013 and more information about the award can be found at: <http://www.adelaide.edu.au/ANZCCART/awards/>

## Improving Animal Welfare in Agriculture and Primary Industries Teaching in NSW Schools

*Sally Bannerman, NSW Department of Education*

### Background

Of the 848 secondary and central schools in NSW, over 350 offer Board of Studies NSW endorsed courses or VET Curriculum Frameworks that require the use of animals with a focus on Agriculture and Primary Industries. The vast majority of the schools with an Agricultural or Primary Industries focus have a farm that allows students to complete the practical activities that are required by the curriculum. The management of these school farms is generally the responsibility of the agriculture teacher, often with the assistance of a part-time farm assistant. The size of each school farm and the type and number of animals they house varies from school to school and is usually determined by the geographical location of the school, knowledge and interest of the teacher, nature of the students, the resources available and often the community expectations. Poultry, sheep and cattle are the most common agricultural animals maintained by schools, with a smaller number keeping pigs, alpacas and/or horses.

The job of an Agriculture teacher is extremely demanding. They, like all teachers, are expected to design teaching and learning programmes that ensure delivery of curriculum requirements in an engaging way. They must also be proficient at classroom management and participate in the many different activities of a 21<sup>st</sup> century school. In other words, they have to fulfil all the standard requirements of a classroom teacher and then beyond that, they are also required to;

- manage the school farm;
- model best practice in the care and use of the animals; and
- adhere to all legislative requirements in relation to the use of animals for teaching.

Like all jobs, time and experience in the position makes the job easier. However, the first few years in a position like this can be extremely challenging.

The teaching of animal welfare should be both explicit and implicit. Teachers not only need to ensure that the curriculum outcomes are met but they must also ensure that "best practice" techniques are demonstrated at every opportunity. This means that agriculture teachers need to have the skills and knowledge required to do this. They need to have the confidence to care for the animals kept on their school farm and to ensure that

this is clearly demonstrated to their students at every opportunity.

### **Community of practice project**

In 2010 a grant from the Australian Animal Welfare Strategy (AAWS) provided an opportunity to help these early career teachers. The major aim of this project was to achieve effective communication, education and training across the whole community to promote an improved understanding of animal welfare.

Perhaps more specifically though, the project aimed to improve the skills and knowledge of a group of agriculture teachers who would then go back to their school communities and apply the knowledge and skills in their own teaching and to the management of their school farm. It aimed to develop a professional community of practice for high school agriculture teachers.

To get this community of practice started, a two-day workshop was held with twenty early-career teachers invited to work with the Schools Animal Welfare Officer, three experienced mentor teachers and livestock officers from NSW Department of Primary Industries. The first day of the workshop focused on best practice school farm management and included strategies for teaching animal welfare and developing a support network. Day two activities were all 'hands on' with the participants spending the day enhancing their livestock handling skills with both sheep and cattle. This work focused on how understanding both the physical and behavioural characteristics of different species as well as appropriate design of handling facilities can lead to improved animal welfare.

The experience gained from this workshop clearly demonstrated both the need to ensure that appropriate measures like these are provided to new graduate teachers in this area and the success that comes from such additional training and mentoring. Formal evaluation sheets completed by the participants provided an overwhelming positive perspective on the workshop and most importantly, many of the teachers in this group went on to communicate with each other, with the mentor teachers and/or with the Schools Animal Welfare Officer. Enquiries from teachers who did not have the opportunity to participate in the workshop reflected the overwhelming need for such support of this kind.

### **Virtual tours**

Further grant funds awarded from the AAWS made the next stage of the project possible. The second stage of this project involved the development of virtual tours of two school farms, which document best practice.

July 2012. These tours can be accessed through the Animals in schools website at: <http://www.schools.nsw.edu.au/animalsinschools/advice/community-practice/index.htm>

The development of these tours has facilitated a fantastic process that involved not only the teachers and students from two schools but highlighted a strong community interest in animal welfare and resulted in a valuable resource for teachers.

### **Extended community of practice**

Having worked in animal welfare within the NSW schools system for many years, I am aware of the range of amazing and engaging programmes that are in place across the State. Many of these programmes not only involve teachers and students but reach out into the local community through parents, local farmers, local businesses and Agricultural Show societies. The two days that were spent in Tumut preparing the second virtual tour clearly drew in all of these community aspects. Parents delivered and collected their sons and daughters, a local cattle producer spent the day helping students work with the cattle and we were all treated to an amazing lunch in the garden, catered by the school canteen. An ex-student gave up a day of her holidays to share her knowledge and skills with the current cohort of students and the programme also attracted some local media attention, resulting in it being featured on the front page of the Tumut and Adelong Times and on the local community radio station. The whole community was focusing on animal welfare in a way that clearly demonstrated the power of education!

### **Feedback on the programme**

Tumut High agriculture teacher Tony Butler explained how he saw the impact of supporting teachers to give them greater confidence in their knowledge of animal welfare. "After showing and explaining best practice in animal welfare to our students, we are finding this information is then being carried home to parents and put into practice on the family farm," Mr Butler said. He was also very pleased to be able to point out that "The junior agricultural teacher in our school now has access to some great online resources, which are backed up by regular group discussions as part of our local network of Ag teachers here in the Riverina Highlands." Mr Butler went on to say "As a group of teachers we are very conscious of animal welfare issues and that collegial atmosphere is a great place to throw around ideas of how to do things better in our schools."

### **Animals in schools Facebook**

Now that the two virtual tours have been set up, it is important to develop an ongoing system of communication that can be used by all teachers. To help achieve this aim, the 'Animals in schools'

Facebook page has been developed. It is hoped that teachers will use this page to seek and receive advice as well as relevant reminders and notifications about related activities and community events. It is hoped that this Facebook page will also help to develop a real community of practice where teachers can share information and experiences, can learn from each other and have an opportunity to develop themselves professionally, while helping to improve animal welfare standards in agricultural education and the broader community.

## News from New Zealand

### Otago Zebrafish Facility – Fishing for Answers

*Noel Jhinku, Zebrafish Facility Manager  
University of Otago, Dunedin, New Zealand*

With state-of-the-art fish life-support systems, computer-controlled water optimisation, and the ability to house in excess of 30,000 adult zebrafish, the Otago Zebrafish Facility (OZF) is more than just your standard aquarium. The 1150-tank core research facility was commissioned in May 2009 and completed in March 2011. The facility supports five commercially produced fish life support systems and provides on-site toxicology, pathology, microinjection and imaging services. The OZF services a number of high-profile teams, both within the University of Otago and externally, who are researching cancer, developmental disorders, sex determination, stem cell biology, oxidative stress, behaviour, epigenetics and evolution.



The OZF infrastructure includes a core of 750 tanks, spanning two systems; two quarantine systems, totalling 70 tanks; and a toxicology unit of 30 tanks. Fish are housed in 3.5L and 8L transparent polycarbonate tanks and supported by a recirculating, multi-stage filtration system. A touchpad electronic system controls each of the five systems and includes pH and conductivity buffering, temperature control and overall monitoring of water parameters. In addition, a dedicated live food culture room allows the facility to meet the nutritional demands of all the contained fish.



Zebrafish (*Danio rerio*), native to South Asia, are naturally found in tributaries throughout the Indian subcontinent. Reaching a maximum length of about 4 cm, these hardy tropical freshwater fish make an ideal vertebrate model for a wide range of research. Zebrafish are broadcast spawners and produce transparent embryos that develop externally to the adults, allowing their development to be easily observed.



Sexing zebrafish is a fairly straightforward exercise. Male fish are generally more streamlined on the ventral end, while the mature females have a pronounced belly, an indication that they are full of eggs. Colour is also an indicator; male zebrafish tend to have a slightly pink hue, while females will be slightly blue. Other features can be used, such their comparative size (females are generally larger than the males), and behaviour (males are faster than females).

To obtain embryos, an adult male and female are put together in a purpose-designed breeding container overnight with some plants (to set the mood). The breeding container is designed to separate eggs from the adults to prevent the eggs from being eaten. The following morning, at the onset of dawn, the zebrafish will start to breed. As the male chases the female, he will swim alongside her and in a synchronised event both fish will release eggs and sperm. A successful breeding pair can produce up to 300--500 fertilised eggs in about an hour, each egg measuring about 1 mm in diameter.

Zebrafish embryo hatch in about 72 hours with most major organs developed. By 5 days the larvae have inflated their gas bladders and begun to swim and forage for food; by 3 months of age, the fish become reproductively mature and start to breed.

Since the early 1970s, the use of zebrafish in research has continued to gain popularity worldwide as a means of understanding vertebrate development and genetics.

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## **The New Zealand Animal Welfare Act 1999 – Revisions for the Future**

*Associate Professor Pat Cragg,  
Deputy Chair of ANZCCART - NZ,  
Dept of Physiology, University of Otago, Dunedin*

The Government of New Zealand through its Ministry for Primary Industries (MPI, formerly the Ministry of Agriculture and Forestry, MAF) is developing for the first time a National Animal Welfare Strategy and exploring proposals to amend the current New Zealand Animal Welfare Act 1999. Part 6 of the Act

legislates a dispensation to individuals to allow them to use animals for research, testing and teaching provided that the use is governed by an institution's Code of Ethical Conduct for the Use of Animals and prior approval has been given by its local Animal Ethics Committee (AEC). The type of animal use requiring AEC approval is defined by legislation as a 'manipulation' which means interfering with the normal physiological, behavioural or anatomical integrity of the animal (for a complete definition see article by C. Johnson in *ANZCCART News*, vol 25, #2, 2012). In accord with legislation, an institution's Code of Ethical Conduct and its AEC are independently audited on a 5-year basis by accredited MPI reviewers. The National Animal Ethics Advisory Committee (NAEAC) also advises and provides information to MPI and all AECs in New Zealand and is also the agent of MPI that publishes the number of animals used each year in New Zealand for research, testing and teaching.

In early 2011 MPI set up an advisory group and consulted over an 18-month period with a wide range of individuals and organisations (including in September 2011 the Chair and Deputy Chair of ANZCCART-NZ). These consultations were set up to better understand if there were concerns about the effectiveness of the current Animal Welfare Act and also to hear views on the current state of animal welfare in New Zealand coupled with visions for a New Zealand Animal Welfare Strategy to guide New Zealand into the future. The resulting MPI discussion paper was released in mid-August 2012 <http://www.biosecurity.govt.nz/biosec/consult/proposals-for-aw-strategy-and-aw-act> for a 6-week public consultation period with submissions due 28 September 2012. MPI points out that the proposals do not change the fundamental principles underpinning the current Act but aim to improve the way the Act operates by providing greater clarity and making legislation easier to enforce. The long-term aim is to replace codes of welfare with a mix of enforceable standards set in regulations and guidelines that give supporting information and promote good practice. The document clearly states that the Government is not proposing any specific regulations at this stage but wants to change the legislation to allow regulations to be made in the future. Initially minimum standards in current codes of welfare will become the first set of regulations and there will be public consultation before those regulations are made.

The MPI discussion paper mainly focuses on animal welfare issues that do not relate to Part 6 of the Act (animals used in research, testing and teaching). This may be a consequence of either satisfaction with the current Part 6 legislation or because issues raised in the



prior consultation phase were too complex to include in the timelines envisaged by MPI for this first phase of altering the primary legislation. It is presumed that the statement that the Government wants to change the primary legislation to allow regulations to be made in the future will also apply to Part 6.

According to p. 25 of the MPI discussion paper, NAEAC has asked MPI to include in the revised Act the requirement that animals that have received no prior manipulation but are killed for research, testing or teaching on the dead animal or its tissues should in future require AEC approval and be counted in the animal use statistics returned by an institution. Currently a number of institutions already state in their Code of Ethical Conduct that such killing requires AEC approval; the number of animals so used is not however reported to NAEAC as legislation currently does not require it. The MPI discussion paper asks the public whether such killing should be included in the official statistics; asks the institutions or individuals what impact, including costs, such reporting would have on them or their organisation; and asks all respondents if there are other changes that would improve the regulation of animals used in research, testing and teaching.

Those that support the requirement for AEC approval of animals killed for procurement of tissues and inclusion of those numbers in the official statistics do so because AECs and their institutions will then be able to ensure that the animals are obtained from appropriate sources, killed humanely and disposed of through appropriate routes. Furthermore the numbers killed would need to be as rigorously justified, based on scientific design and outcomes of the experiments, as is required for manipulated animals and in cognisance of the Three Rs principle (replacing animals, reducing numbers, refining techniques). A further viewpoint is that such animals are killed only because research, testing or teaching is occurring and therefore exclusion of their use in the official statistics misrepresents to the public the numbers being used in research, testing and teaching.

Those who do not support the requirement for AEC approval and counting of animals killed for their tissues do so because, provided the animals are killed humanely, no harm to the animal occurs and so use does not need to be monitored. Indeed the current Act (despite the word “ethics” in its National Animal Ethics Advisory Committee) excluded such animals on the basis that the Act’s focus was “on the prevention of ill-treatment of live animals rather than the exercise of moral judgement about using animals”. Scientists already consider that

all aspects of their research are riddled with a multitude of compliance hurdles which occupy their time, detract from time available for actual research and do not “add value” to the research outcomes. Many are concerned that inclusion of such animals will inflate the official statistics and be misinterpreted by the public and the media.

What other changes would improve the regulation of animals used in research, testing and teaching? Some quarters of society and some scientists consider that a more honest way to count animals used would be to also include those that were bred specifically for research, testing and teaching but in the end not used but killed because of overproduction, changes in researcher requirements, the need to cull litters to a specific size, the need to use only a single sex, etc. Such counting would ensure that the official statistics provided the “big picture” of the total number of animals required to supply the lesser number manipulated. Monitoring of numbers bred would allow the Three Rs principle (replace, reduce, refine) to be considered in the context of breeding and might provide financial savings for institutions. Again the counter argument is that no harm has come to these “spare” animals, culling spare stock is common practice in agriculture and counting them will unnecessarily inflate official statistics.

An anomaly in the current Act is that embryos of mammals, birds and reptiles in the second half of their gestation or incubation period, and marsupial pouch young, are all considered equivalent. And yet rates of maturation are highly variable from species to species – for example, at birth lambs are totally mobile, fully fleeced and not necessarily dependent on the mother but mice and rats have limited mobility, eyes are not open, hair not yet grown and fully dependent on the mother. However one accepts that a line has to be drawn somewhere and defining the gestation/incubation period per species to achieve the same maturation level would be a marathon, and probably impossible, task. However the consequence is that the impact grades reported are forced to consider all embryo species as equal and thus the official statistics misrepresent the true impact grade.

All comments in this article so far have focused on counting animals, but what about a far more important issue – the **welfare** of animals used in research, testing and teaching? Over the last decade the use of genetically modified (GM) rodents (usually imported from overseas) has escalated, as has the range of different types of GM colonies modeling a variety of diseases.

During breeding from each established colony many of the progeny do not show all the desired characteristics (called a phenotype) and are not only culled as surplus to requirements but some also have an adverse phenotype with accompanying welfare issues. Currently there is no requirement in the Act for AECs to have oversight of the welfare of any of these GM animals (used or unused) or, when manipulated, to grade the impact score for the severity of the manipulation while taking into account the severity of the initial adverse phenotype. Selective breeding for a specific trait from normal or GM animals can also lead to traits that can sometimes present with welfare issues and again such animals are not covered by the current Act.

Those not in favour of including GM, or selectively bred, animals with adverse welfare characteristics in a revised Act will argue that managing the welfare issue and killing the animal at an appropriate identified humane end-point would automatically be done by the scientist and animal care technician and need only come under the jurisdiction of the institution, its Code of Ethical Conduct and its AEC. Counting such animals would again be considered to unnecessarily inflate official statistics.

There are always many ways in which the welfare of animals bred, held in holding facilities and then used for research, testing and teaching can be enhanced. An Animal Welfare Act usually sets the minimum standard; institutions via their Code of Ethical Conduct and AEC are free to raise that standard. For example, the following good practice initiatives could be introduced: environmental enrichment within the animals' cages in the holding facility; more extensive training of scientists in surgical techniques; veterinarian oversight of animals manipulated, particularly at the higher end of the impact scale; mandatory reporting within the institution (to an AEC) of unexpected adverse outcomes; and so on. However all such gold standards come at a cost – both of a scientist's time and an institution's dollars, neither of which are a commodity that Government or research grant-funding agencies can fund sufficiently even at present. If these higher standards were to be legislated in the future through regulations, the Government would need to increase funding to the scientific sector to meet these higher standards.

Will the role of NAEAC be strengthened in the revised Act? Before the 1999 Act NAEAC advised only the Ministry; the current Act directs NAEAC to also advise AECs. The balance, however, is still in favour of advice to the Ministry. Should the revised Act direct NAEAC to spend more time

advising AECs and their institutions and handling their enquiries? Should it act as an ombudsman for AECs and the public? It also seems logical that if the revised Act alters primary legislation to allow regulations to be made in the future which apply to Part 6, then NAEAC will be the agent to propose those regulations – presumably in consultation with AECs before public consultation.

The next 24 months will be interesting times for animal welfare legislation in New Zealand. The MPI discussion paper expects that once the Act is revised, the first set of new regulations applicable to codes of welfare will be in place within 12 months. A timeline for regulations affecting Part 6 of the Act is not identified. ANZCCART-NZ intends to have input into revised legislation and future regulations affecting Part 6 as its mission statement is to seek to promote best practice, effective communication, and cooperation among those dealing with ethical, social and scientific issues arising from the use of animals in research, testing and teaching.

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## Recent Article of Interest

### **Making mice comfy leads to better science, researcher says**

Work recently published by Stanford University provides some strong evidence in support of the ANZCCART line – “If you have to use animals in your work, ensure that they are properly cared for because healthy, happy animals are less likely to produce spurious data”. Nine out of 10 drugs successfully tested in mice and other animal models ultimately fail to work in people, and one reason may be traced back to a common fact of life for laboratory mice: they're cold, according to a researcher at the Stanford University School of Medicine. Laboratory mice, who account for the vast majority of animal research subjects, are routinely housed in chilly conditions, which may affect their well-being as well as the outcome of research studies, said Joseph Garner, PhD, Associate Professor of comparative medicine.

<http://med.stanford.edu/ism/2012/march/mice.html>

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