NAEAC Newsletter July 2021

Update from the Chair of NAEAC

Kia ora

As I write this, we are just past the shortest day and in the grip of winter. Everyone around the country is dealing with difficult weather conditions, especially those who work with production animals.

Those for whom a mid-winter trip to Queenstown, with the potential to incorporate a break that allows a bit of skiing is appealing, you might find that an added incentive is the opportunity to attend this year's ANZCCART Conference from 25-27 July.

If you have never attended ANZCCART, it is a great opportunity to hear some speakers addressing topics that are of interest to AEC members. It is also a fantastic opportunity for networking. In 'normal' times (*what are those?*), two years out of three, ANZCCART is hosted in Australia and attendance by New Zealand delegates is not always possible. Having the meeting in our own country in a location that has reasonably good travel connections is a big plus. I encourage you to seriously consider taking advantage of attending this conference in our own backyard. You can find other information and links elsewhere in this newsletter.

NAEAC publications

NAEAC has recently put a lot of effort into updating its documentation. The *Good Practice Guide* has been significantly updated and is a particularly useful document. It is viewed as a 'living document' and will be updated annually. If there is anything that you, as an AEC member, believe would be useful, but is not currently covered, please feel free to send your suggestion(s) to the secretary at naeac@mpi.govt.nz.

An updated version of *A Culture of Care* is also almost ready to upload to NAEAC's webpage. The committee has also recently prepared a set of checklists for answering the question *"Do I need Ethical Approval?".* This will shortly be made available as well.

Openness

NAEAC continues to support openness about the use of animals for research, testing and teaching (RTT).

I have already alluded to the upcoming ANZCCART Conference. This year's conference theme is "*Openness in Animal Research*". Some particularly interesting topics will be covered, and some erudite speakers will be presenting. If you have been teetering on deciding whether to try and attend, maybe this is the feature that will help you make your final decision.

Veterinary research

Over the last few years, I have often been asked whether vets require AEC approval for a particular activity.

One test is "Are you (A) wanting to *answer* a question that is quite specific to the animals on a particular farm or small group of farms with similar conditions/problem that you are treating (i.e. 'will they respond better to the treatment if I do this') **or** (B) are you wanting to *ask* a question (i.e. is this new product/ingredient more effective over different sets of conditions than an existing one, or is it useful because there is currently no effective treatment or cure available), which requires the use of a lot of animals with different backgrounds, that are managed under different conditions, using a scientific approach to find a statistically valid answer".

So; (A) is answering a specific clinical question, whereas (B) is asking a question that will add to the scientific literature - and therein lies the key to whether or not an AEC should be involved.

Nga mihi,

NAEAC member profile – Rachel Heeney *(nominated by the Ministry of Education)*

Rachel provides NAEAC with knowledge and experience in animal use in the teaching space. She is Head of Biology at Epsom Girls Grammar School, a position she has held, and loved, for the past 24 years.

Proud to have been brought up in Te Tai Tokerau, Rachel feels fortunate that she completed her schooling in Morewa and Kawakawa, before attending Waikato University where she obtained a science degree in animal biology and physical geography. Having always aspiring towards a teaching career, she has taught for 29 years.

As well as her teaching experience, Rachel has also been the recipient of two Royal Society teacher fellowships; at the Allan Wilson Centre and the University of Auckland. She is currently involved with the changes to the NZ Biology Achievement Standards. At school she is the staff-elected nominee on the School Board and helps with rowing. She enjoys talking to the school animal rights group and sharing knowledge about ethical standards in the fields of RTT.

Aside from her work at school, Rachel enjoys walking around the local Maunga (and recently completing the 'nugget walk' with her department), and spending time with her 14-year-old daughter, who is desperate for a pointer dog; but in the meanwhile, the family loves their cats Bella and Maia (pictured is a rescue cat), and rabbits Molly and Indy. Rachel and her daughter also enjoy visiting family and friends.

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Rehoming

NAEAC recently discussed the *New South Wales (NSW) Research Animal Rehoming Guidelines*, which can be found at: **https://www.animalethics.org.au/__data/assets/pdf_file/0005/1275251/Research-Animal-Rehoming-Guidelines.pdf.**

After some discussion, the committee agreed to place an interim statement on its webpage, linking to the NSW guidelines and noting that organisations such as Helping You Help Animals (HUHA) and the New Zealand Anti-vivisection Society (NZAVS) are available to assist with rehoming in New Zealand. Drafting New Zealand specific guidelines was added to the work programme.

NAEAC would welcome input from any code holder that has rehomed animals. The aim is to produce guidelines that will assist any organisation that intends to rehome animals used previously in RTT.

Specific topics may include:

- Rehoming policy;
- Procedure for preparing animals for rehoming;
- Considering who will be rehoming the animal(s);
- Transferring care;
- Information and advice to new care givers;
- Transport;
- Follow-up.

If your AEC or code holder can contribute to developing guidelines for rehoming animals previously used for RTT, please contact us at **naeac@mpi.govt.nz**

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MEETING FORMAT: FACE-TO-FACE VS VIDEO CONFERENCING.

NAEAC believes that face-to-face meetings for assessment of applications allows for greater robustness of debate on issues arising out of applications, particularly those in which higher impact manipulations are to be undertaken.

As a result of the pandemic there has been increased use of digital meeting formats. This has identified a potential for change in the future.

While the committee understands that the remote meeting format is being used increasingly, the members unanimously identified that the format does not lend itself to the same level of discussion that can be achieved by meeting in person.

AECs are constituted by statute to include independent representatives of the community and other interests to protect the welfare of animals in RTT. This means that the statutory members of each AEC are independent of the code holder but must be allowed to have a strong voice on the committee. All AECs have at least one organisational member and some have several. When faced with organisational member(s) input, some individual external nominees may be hesitant about putting forward their views and will need encouragement to do so. That reticence is easier to identify and can be better managed when a committee is meeting in-person.

AECs have different meeting schedules. Around the country, AEC meeting frequency ranges from once per year to once a fortnight. It is much easier in the latter situation for the members to be comfortable with and understand each other's perspective. Meetings that are held less frequently present fewer opportunities for the members to be 'in synch'. In extreme cases, some members will have little knowledge of each other.

AEC meetings ensure the best possible welfare outcomes for all animals that are manipulated for RTT. Therefore, the interaction between the persons considering these outcomes must offer the best opportunity to have robust discussion.

NAEAC recommends that:

- in-person is the preferred meeting format;
- an AEC should meet in-person at least once per year;
- at least 50% of scheduled meetings each year should be in-person;
- all manipulations graded D or E should be discussed in-person;
- in exceptional circumstances, an individual member who cannot otherwise attend may join a meeting by digital link if:
    - the meeting is scheduled to be in-person, but the member's circumstances do not permit travel at that time;
    - if that member did not attend the meeting would be inquorate;
    - the meeting requires urgency.

One other thing that NAEAC identified was the need for careful chairing of meetings that have individuals participating remotely. This is especially important to ensure that external members can participate fully and do not feel left out.

Accredited reviewers will review the use of teleconferencing as part of their normal auditing process; therefore, AECs should record adequate documentation of formation, discussion and decisions made in such circumstances for this purpose.

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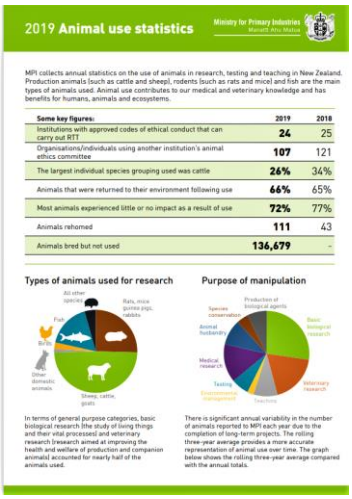
ANIMAL USE STATISTICS



The 2019 Animal Use Statistics have been released. The full report can be seen at: https://www.mpi.govt.nz/dmsdocument/44776-Statistics-on-the-use-of-animals-in-research-testing-and-teaching-in-New-Zealand-in-2019

As well as the full report, a summary graphic is prepared. You can open the infographic by right clicking on the image and selecting 'Open Link'.

During 2019, a total of 315,574 animals were reported as manipulated in RTT. This was 14,239 more than in 2018 when 301,335 animals were reported. A total of 139,163 animals were sourced from farms in 2019. While over 85 per cent of these were farm animals (119,468), 19,301 fish were also classified as coming from farms, as were chickens, dogs, horses, rabbits and "other birds".

Animals sourced from breeding units numbered 83,013 in 2019. The majority of these were mice, rats, and fish.

A total of 33,858 animals were captured in 2019 for RTT purposes. The majority of these were fish, "other birds", cephalopod/crustacea, rats and possums.

A total of 26,045 animals came from commercial sources. Most of these were cattle, sheep and fish but also included chickens, pigs, mice, rats, cephalopod/crustacea, amphibia, pigeons, horses and "other birds".

A total of 19,636 animals came from public sources, with the majority being cattle and marine mammals. Others were dogs, "other birds", cats, reptiles, pigeons, rats, mice, guinea pigs, rabbits, horses, fish, amphibia, "other species" and sheep.

A total of 13,634 animals were born during projects in 2019. The majority of these were sheep, mice, and rats.

A total of 225 animals were imported into New Zealand for RTT purposes in 2019. These included 195 mice, 24 rats and six "other birds".

In 2019, 456 animals were reported in the "other species" category. This group was made up of 47 bats used for species conservation; 5 chinchillas used for teaching; 211 ferrets used for environmental management (209) and veterinary research (2); 21 Himalayan Tahr used for environmental management; 46 hedgehogs used for veterinary research (41) and basic biological research (5); 13 meerkats used for basic biological research; 5 otters used for basic biological research; 55 stoats used for environmental management; 47 wallabies used for environmental management; and 6 weasels for environmental management (4) and veterinary research (2).

In 2019, 42 institutions used cattle and sheep for RTT purposes. Thirteen institutions used only cattle, seven used only sheep and four used only sheep and cattle.

For the first time in 2019, an amendment to the Animal Welfare (Records and Statistics) Regulations 1999 required reporting of the number of animals that were bred for RTT but were not used for those purposes and killed. A total of 136,679 animals that were bred for RTT purposes but not used were killed. These included 87,150 mice, 27,518 fish, 19,996 rats, 1977 guinea pigs, 28 sheep, eight rabbits, and two goats.

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LIKE NIGHT AND DAY: Animal studies may not translate to humans if time of day is disregarded

Below is the text of an article recently posted as a link on the Speaking of Research Facebook page https://www.facebook.com/SpeakingofResearch.

Adapted and reprinted from: https://wvutoday.wvu.edu/stories/2021/06/10/like-night-and-day-animal-studies-may-not-translate-to-humans-if-time-of-day-is-disregarded?fbclid=IwAR3doXv_LENPVkLXa__AYIeobwWJirAjHZnKtvPGmmT2gXP2ho8IWt1fE1M

Imagine being woken up at 3 am to navigate a corn maze, memorize 20 items on a shopping list or pass your driver's test.

According to a new analysis out of West Virginia University, that's often what it's like to be a rodent in a biomedical study. Mice and rats, which make up the vast majority of animal models, are nocturnal. Yet a survey of animal studies across eight behavioral neuroscience domains showed that most behavioral testing is conducted during the day, when the rodents would normally be at rest.

"There are these dramatic daily fluctuations—in metabolism, in immune function, in learning and memory, in perception—and by the large, they get ignored," said Randy Nelson, who led the study. "You just have to wonder: to what extent is that affecting the outcomes?"

Nelson chairs the School of Medicine's Department of Neuroscience and directs basic science research for the Rockefeller Neuroscience Institute. His findings appear in Neuroscience and Behavioral Reviews.

Nelson and his colleagues—RNI researchers Jacob Bumgarner, William Walker and Courtney DeVries—examined the 25 most frequently cited papers in each of eight categories of rodent behaviors: learning and memory, sensation and perception, attention, food intake, mating, maternal behavior, aggression and drug seeking. For each study, they determined whether the behavioral testing was done during the day, at night, or both. They also identified which studies reported time-of-day information ambiguously or not at all.

Overall, only 20% of the studies reported nighttime testing. Seventeen percent reported daytime testing, and 7.5% reported both. The remainder of the studies either didn't mention when testing occurred (42%) or were ambiguous on that point (13.5%).

Even among the studies conducted at night, most didn't describe in detail how the authors protected the rodents' circadian rhythms. For example, at what times did the researchers observe the animals? Did they house the animals in the dark during the day? If so, how did they keep extraneous light from invading the room every time someone opened the door or turned on a hallway light? In most cases, it's impossible to tell from the methods section.

Yet recording this kind of information is crucial to a study's reproducibility. Without knowing how an experiment was run the first time, other scientists can't run it again to see if they get different results. And running experiments multiple times—under different conditions—is the basis of all scientific inquiry.

"We want to make sure everyone's conducting and reporting the best science they can do," Nelson said. "This is important because, in common with the NIH, we want to improve the rigor and reproducibility of science."

Failing to account for time of day doesn't just jeopardize an animal study's reproducibility. It can also make its results less applicable to humans.

Being diurnal, humans tend to be active when the sun is up and rest when it's down. That's the opposite of the nocturnal rodents that scientists common use in biomedical studies. If the scientists disregard this discrepancy, it can reduce the value of their data when they try to extrapolate their results to humans.

"If you're testing a mouse during the middle of its active period, which is during the dark, you can translate those data to a diurnal creature who's active during that time," Nelson said. "I think that's fine."

But in the light, a mouse's daytime behavior is less comparable to a person's. "It's like waking you up at 3 in the morning and saying, 'OK, let's walk a tightrope,' and then you're no good at it," he said. "Well, what a surprise." So, how can a diurnal, human researcher design and carry out a study of nocturnal rodents when their circadian rhythms naturally conflict?

One step she can take is to reverse the rodents' light/dark cycle by housing the animals in total darkness during the day and turning on the lights at night. This way, she and her colleagues get to observe the animals during their active phase—under simulated "nighttime" conditions—without driving to the lab at midnight.

When researchers check on the animals in the daytime, they can do so under dim red lighting instead of regular, white lighting. To complete the effect, windows can even be tinted with a red film. Rodents can't see red light, so it won't disrupt their circadian rhythms.

Some labs come equipped with red overhead lighting, but even if researchers can't access such a space, there are ways around the problem.

"You can use a miner's light with a little, red light in it," Nelson said. "That works really well."

Night-vision goggles are another option.

In any event, recording these measures - in detail - is key.

"The goal of this paper is to make sure that we raise consciousness about it in the same way that people raised consciousness about sex as a biological variable that's important," Nelson said. "Everybody knows it, but—as a group of biomedical researchers—we ignore it. And if you ignore it, then can you really translate those data on a nocturnal animal to a diurnal animal when you're testing at the wrong time of day?"

DOI: https://doi.org/10.1016/j.neubiorev.2021.05.017

Link: https://www.sciencedirect.com/science/article/abs/pii/S0149763421002190?via%3Dihub

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ANZCCART

This year's conference looks at 'openness' in animal research and teaching. Public confidence in animal research hinges on the scientific community engaging in the evolving conversation about how and why animals are used. Being open about these matters is a worthwhile endeavour, and to be encouraged.

We anticipate that the adoption of new approaches to openness will reflect constructively on **ANZCCART**'s principal objectives, particularly the Three R's – the refinement, reduction and replacement of animals in research and teaching.

Science Media Centre: Savvy Express
As part of being open about animal research, delegates will be able to undertake a free Science Media Centre Savvy Express 15-minute media training session, offering one-on-one training for researchers, technicians or AEC members to practice speaking about their work for a general audience. Please book for a session when registering.

Communication skills workshop
The morning following the conference, join in a free workshop run by Kirk Leech, Executive Director of the European Animal Research Association (EARA). This will provide additional training for researchers, technicians, or AEC members to communicate their work. Please book to attend workshop when registering.

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IMPROVING THE STANDARD OF AEC APPLICATIONS

NAEAC recently received correspondence from an AEC that had spent some time understanding why applications often require (sometimes) significant revision before they are acceptable to the AEC. They have shared their findings in the hope that other AECs may benefit.

There is a range of views that researchers use to describe the work of AECs. Without speculating which are more common, it is likely that they are biased towards the negative.

It is important that an AEC is aware of negative sentiments, which can proliferate and undermine the committee's efforts. Occasionally, views of the workings of the committee are expressed directly to AEC members. Some may describe the committee in terms of an obstacle, some as an unwelcomed intrusion on an applicant's research, and some may indicate a deliberate lack of effort with the writing of applications - in anticipation of an inevitable request for clarifications. Even senior, experienced applicants may express dissatisfaction with the deliberations of the committee.

When a protocol is accepted but has required rewriting, or has been made subject to specific conditions, or if it is deferred, or even rejected, the response of an applicant can be frustration and annoyance. Applicants may feel that their important research efforts are being thwarted by "bureaucracy". Researchers who have more than one such outcome may become adversarial towards the committee, and some senior applicants may understandably, though unjustifiably, believe they are above criticism.

If points raised by a critique of protocols are easily answered, the probability is that the need for change may have been easily averted by their proactive consideration in the original application.

It is highly unlikely that negative opinions towards the workings of an AEC would persist if applications were approved without change. Therefore, improving the quality of submissions can both reduce the frustration experienced by some applicants, and expedite the work of the committee.

Knowing the most common reasons for rejection or deferment might enable the AEC to develop strategies to improve the quality of submissions; to the benefit of all.

A small study was conducted to determine the most common reasons for lack of 'uncomplicated approval' of protocols submitted to a typical AEC. The hope was that an improved understanding of why protocols were criticised would enable targeted feedback to the relevant applicants. Hopefully, this would result in improved submissions and a decreased rate of rejection/rewriting. By making use of this knowledge, applicants will be empowered, and the workings of the committee may be viewed as considered rather than adversarial.

The study found that only 32% of protocols had (in the eyes of the applicant) a 'satisfactory outcome'; having been approved with no, or minimal, need for revision. While a low rate of uncomplicated approval potentially fuels frustration and leads to complaint, more than half of the reasons the AEC asked for clarification were the result of "inadequate explanation, justification, or description". When the protocols were subsequently approved, the inference is that many could have been approved at the time of initial consideration with more attentive completion of the application form.

About 25% of protocols were criticised because of concerns about adverse effects or unnecessary impact on the animals, or because the committee considered that the animal welfare impact of the manipulation(s) could be addressed more effectively. That proportion emphasises the efficacy and importance of the committee's work as a checkpoint for the consideration of animal welfare. It is also an indicator that there is a need to encourage animal researchers to consider impacts on the animals in their care more carefully.

The AEC also noted that pre-review by the AWO resulted in a significant decrease in changes to protocols. While the applicants have not been asked, it is likely that the researchers concerned now have a better rapport with the Committee than before.

If the rate of well-constructed submissions can be increased, it is likely that the AEC's relationship with those applying for approval to manipulate animals for RTT will become one of mutual support.

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FROM NAEAC'S MINUTES

This regular section in the NAEAC newsletter includes snippets from recent meeting minutes that I hope you find interesting.

Deputy Chair

At the February meeting, Mr Rob Hazelwood was elected deputy chair of NAEAC for 2021, pursuant to the Animal Welfare Act 1999 (section 67 and Schedule 1, clause 3(1)).

Public attendance at meetings

Recently the committee discussed how it should interact with the public during its meetings.

While the legislation does not provide NAEAC with a role relating to public engagement, the committee has stated that members of the public were welcome to attend the open sessions of its meetings. A set of Guidelines are being developed to describe NAEAC's expectations of members of the public who attend its meetings.

Attendance at AEC meetings

All NAEAC members try to attend AEC meetings during the year in an observer's capacity. These attendances are not a review or audit, but simply a way for NAEAC members to familiarise themselves with how AECs are operating.

One area that has become apparent is how NAEAC offers training and support to new AEC members, and this has been flagged as an area for NAEAC to address in the future.

If you would like a NAEAC member to visit your AEC as an observer, please contact the secretariat (details below).

Dedicated NAEAC webpage.

NAEAC is an independent advisory committee that is established under the Animal Welfare Act 1999. The committee provides advice to the Minister responsible for Animal Welfare. Secretariat support for NAEAC is drawn from staff of MPI.

NAEAC's internet presence has historically been embedded in MPI's website. NAEAC and its sister committee the National Animal Welfare Advisory Committee (NAWAC) have been investigating stand-alone websites.

The committees have recently learned that these are now getting closer to completion and hope to be able to launch their respective sites soon.

Site visits

Each year, NAEAC holds one meeting at a location outside Wellington. This is scheduled as a two-day meeting, and the committee takes the opportunity to visit one or more code holders and to meet with their AEC.

In May the committee met in Auckland. Once again, the committee found the site visits to be interesting and informative. Members were able to view facilities learn about the role of an Animal Welfare Officer and to see some unique native animals.

These visits offer a significant professional development opportunity for committee members.

If you would like to host a NAEAC visit, please contact the secretariat (details below).

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AEC contact details

Please remember to inform the NAEAC secretary whenever the details for your AEC's contact person change. naeac@mpi.govt.nz

Dates for your diary

July 25 – 27 2021 – "Openness in Animal Research" ANZCCART Conference, Queenstown https://www.eventbrite.co.nz/e/anzccart-2021-openness-in-animal-research-registration-96357442705

Any time – expressions of interest with proposals relating to Three Rs research to the Sustainable Food & Fibre Futures (SFF Futures) fund. Contact: SFF.Futures@mpi.govt.nz>

Contacts:

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Secretariat: naeac@mpi.govt.nz