ANIMAL WELFARE IN THE DIGITAL AGE

Animal Welfare Seminar 2026

Online | February 18-19

Wednesday 18 February 2026 (All times are in AEDT)

12:00 — Welcome to Day 1

Official welcome: Richard Mussell
Chief Executive Officer, RSPCA Australia

Chair: Dr Suzanne Fowler
Chief Science Officer, RSPCA Australia

12:10 — Opportunities and risks of digital technology on animal farms: a practical perspective

Speaker: Prof Janice Siegford
Michigan State University

12:55 — What's artificial intelligence got to do with animals?

Speakers: Dr Simon Coghlan & Prof Christine Parker
The University of Melbourne

13:35 — Virtual fencing – the good, the bad and the ugly

Speaker: Dr Helen Beattie
Veterinarians for Animal Welfare Aotearoa

14:15 — Break

14:30 — Artificial intelligence in the abattoir to improve welfare outcomes

Speaker: Dr Dana Campbell
CSIRO

15:10 — Innovating to replace, reduce and refine animal use in education

Speaker: Dr Megan Lucas
The University of Melbourne

15:50 — Panel discussion:
Ethical implementation of digital technology in farmed animal industries – strategies and barriers to progress

Panel: Day 1 Speakers

16:30 — Close

Thursday 19 February 2026 (All times are in AEDT)

12:00 — Welcome to Day 2

Chair: Dr Suzanne Fowler
Chief Science Officer, RSPCA Australia

12:05 — Improving feline welfare: The role of digital technology in pain detection

Speaker: Dr Natalie Lloyd
Zoetis

12:45 — Improving the lives of zoo animals with digital technology: A historical and empirical perspective

Speaker: Dr Eduardo J. Fernandez
The University of Adelaide

13:20 — Advancing cage-side welfare assessment: Automated monitoring technologies in laboratory animal research

Speaker: Assoc Prof Alexandra Whittaker
The University of Adelaide

13:55 — Harnessing the power of cancer registries in veterinary care

Speaker: Prof Chiara Palmieri
The University of Queensland

14:30 — Break

14:50 — Use of drones in marine mammal research

Speaker: Dr Vanessa Pirotta
Macquarie University

15:25 — Respecting data, strengthening care: Integrating digital solutions for remote animal health

Speaker: Dr Bonny Cumming
AMRRIC

16:00 — From viral to harmful: Understanding animal cruelty content online

Speaker: Nicola O'Brien
SMACC, Asia for Animals Coalition

16:40 — Close

SPEAKERS

PROF JANICE SIEGFORD

Michigan State University

BIO

Dr Janice Siegford is a professor in the Animal Behaviour and Welfare Group in MSU's Department of Animal Science where she is also an associate chair and director of the department's graduate program. She uses her education in animal welfare, neuroscience, zoology, and science communication to conduct research, teach and mentor students and postdocs, and advise stakeholders.

She studies behaviour to learn how animals, particularly laying hens and pigs, respond to the housing environments and management practices we use in agriculture. Her previous research ranges from examining how dairy cows adapt to robotic milking, to the effects of weaning on pigs and beef cattle, to the impacts of giving tigers more choice about how to use enclosure space in zoos. She evaluates individual animal responses using non-invasive tools like sensors and cameras to understand the animals' perspective and evaluate their welfare. Janice also studies how human stakeholders view the use of precision livestock farming technology to understand whether producers will use it on farm and the public will accept it as a management tool.

Each year, she recharges her scientific batteries by attending the International Society for Applied Ethology conference with members of her scientific family.

ABSTRACT

Opportunities and risks of digital technology on animal farms: A practical perspective

Automated technologies to monitor and manage farm animals are rapidly being developed and commercialised. A remarkable array of sensors is available to detect animal responses ranging from vocalisations, facial expressions and body temperature to chemicals present in an animal's breath. Applications relying on the power of deep learning and artificial intelligence are being developed to recognise and interpret information collected by these sensors. These technologies have the potential to holistically monitor animals on farm in real time across their lives, which could help us better manage animals as individuals. Early detection of disease or precise tailoring of diets could improve animal health and reduce environmental impacts. Automation of manual, repetitive tasks could free stockpeople to spend more on rewarding care or animal interaction tasks. However, whether technologies can practically deliver all these benefits remains to be seen. Animal environments are hard on technology and require new skill sets from farm workers. Technologies may also not target issues that producers most need help with or may provide simplistic outputs that do not lead to impactful actions. Critical examination of opportunities and risks is needed to develop and use on farm technologies in ways that are beneficial for the animals, humans and environment.

BIOS

Dr Simon Coghlan is a moral philosopher and a veterinarian. He is deputy director of the Centre for AI and Digital Ethics (CAIDE) and a senior lecturer in the School of Computing and Information Systems (CIS) at the University of Melbourne.

Simon's research in digital ethics includes projects on AI and animals, companion and care robots for older people, anthropomorphising machines, and ethics of digital technologies in healthcare and vet medicine. He has interests in applied ethics of various types, including conservation ethics, animal ethics, and bioethics.

Professor Christine Parker is a Professor of Law at the University of Melbourne and a Chief Investigator in the Australian Research Council Centre of Excellence for Automated Decision Making and Society. She teaches and researches legal ethics, corporate regulation, animal law, and food law and policy.

ABSTRACT

What's artificial intelligence got to do with animals?

Artificial intelligence (AI) is reshaping human societies — but what might it mean for animals? This presentation explores how emerging AI technologies could impact on nonhuman lives, for better and for worse. After a brief introduction to the nature of modern AI systems, we will examine their implications across key domains:

- Animal agriculture and intensive farming
- Veterinary medicine and animal healthcare
- Decoding animal communication
- Generative AI in text, images, and video
- Social media recommenders and their ripple effects
- Citizen science initiatives
- Conservation and wildlife management

The presentation will also consider ethical and legal frameworks, codes, and guardrails for AI and ask how animals might be included within them. Attendees will gain an overview of how this powerful technology could affect not only human lives but also the lives of other sentient beings.

DR HELEN BEATTIE

Veterinarians for Animal Welfare Aotearoa

BIO

Dr Helen Beattie is a veterinarian and the managing director of Veterinarians for Animal Welfare Aotearoa (VAWA). Launched in February 2022, VAWA is a charitable, membership organisation open to everyone who supports a veterinary-led, science-backed, independent advocacy voice for animal welfare. Helen has had an eclectic and impactful career, including four years as the Chief Veterinary Officer for the NZ Veterinary Association and several SPCA roles including Director of Animal Welfare at Otago SPCA. To date, her career has included clinical practice, locuming during the foot-and-mouth outbreak response in the UK, veterinary practice ownership, and program management for veterinary nurse education. She was also a warranted animal welfare inspector and is currently pursuing a Bachelor's degree in law at Otago University.

Nowadays, VAWA enables Helen to spend time on her primary passion: objective and science-based animal welfare advocacy and education.

ABSTRACT

Virtual fencing – the good, the bad and the ugly

In 2024, VAWA commenced the development of a Code of Ethical Practice for Virtual Fencing Technology (VFT). This followed engagement with the industry and alignment in concerns about the lack of animal welfare regulation for VFT use in New Zealand, and other jurisdictions.

While VFT poses some potential benefits from an animal and environmental health perspective, there are also costs to both. Some aspects of VFT development and use are well regulated and transparent, such as the safety of electrical devices. Other aspects are highly variable and concealed, for example, the amount of electricity used on animals, the animal welfare expertise in development teams, and the use of devices for herding and drafting. There is also uncertainty on whether independent research sufficiently supports VFT deployment to alternate applications (e.g., dairy to beef), and how strong the evidence is for other statements commonly made about its benefits e.g., environmental claims.

As VFT is adopted more widely, ideally, manufacturers would abide by the voluntary Code of Ethical Practice, to ensure that animals are treated consistently by both established and emerging VFT products to the market, and farmers are clear about robustness of welfare and other claims.

DR DANA CAMPBELL

CSIRO (Commonwealth Scientific and Industrial Research Organisation)

BIO

Dr Dana Campbell is an animal behaviour and welfare Senior Research Scientist based at CSIRO. She conducts both applied and strategic research to improve the welfare and management of agricultural animals across multiple different livestock industries. She has particular interest in the impacts of developmental environments, benefits of enrichment, and the use of precision technologies to measure animal behaviour.

She has recently been engaged in research to develop artificial intelligence that can detect the behaviour of cattle through computer vision in abattoirs, providing tools for animal monitoring. Her research addresses prominent issues in the Australian livestock industries to understand how the animals adapt and respond to their housing environments and determine what modifications to husbandry and management may improve their welfare. Her research has been used to inform the revision and development of animal welfare standards as well as government policy.

ABSTRACT

Artificial intelligence in the abattoir to improve welfare outcomes

Lairage time for beef cattle is the period following transportation to the abattoir where the animals are confined in pens before being taken to slaughter. Optimising the environment during this period may better meet animal welfare requirements as well as reducing risks to meat quality. The lairage duration is a short and critical time period with high animal throughput. Supportive animal monitoring tools can improve the ability to continuously monitor animals for implementing housing change or timely interventions as needed.

A system applying computer vision algorithms was developed to automatically classify cattle behaviours of lying, standing, and walking in lairage pens at a commercial abattoir. Real-time analysis of cattle behaviour was able to detect differences in behaviour based on flooring substrate. This is one example of how the application of computer vision monitoring can be a tool to inform on housing and management change that can improve animal welfare in this context.

This presentation will discuss the development and application of artificial intelligence in abattoirs and how these types of systems can aid in optimising animal welfare and meeting regulatory auditing requirements.

BIO

Dr Megan Lucas is a lecturer in animal welfare in the Melbourne Veterinary School at The University of Melbourne. As an animal welfare scientist, her research spans animal welfare and behaviour across species, with a particular focus on how housing, husbandry, and management practices affect the welfare of pigs. Megan's PhD research at The University of Melbourne explored how positive interactions with people and early life experiences impact the adaptability of pigs to stress, while her postdoctoral research examined the abnormal behaviour of tail biting.

Megan coordinates undergraduate and postgraduate subjects on animal behaviour, welfare and ethics, and she is passionate about innovation in higher education to improve students' learning experiences and outcomes. Megan's teaching covers a broad range of topics related to animal behaviour, welfare and agriculture, including welfare assessment, stress, learning, cognition, productivity, behavioural development, abnormal behaviour and social behaviour. Her favourite class to teach is a practical session where students clicker train chickens to understand how animals learn, followed closely by a workshop she recently developed on virtual pig welfare assessment. Megan's ultimate education goal is to inspire the next generation of animal welfare scientists.

ABSTRACT

Innovating to replace, reduce and refine animal use in education

Globally, animals play a considerable role in educating students in agriculture, veterinary, and other science-based disciplines. However, many students and educators report feeling conflicted about the use of animals in teaching and learning. When considering the impacts on animals, even minor disturbances such as exposure to multiple unfamiliar student handlers can induce behavioural and physiological stress in animals, compromising their welfare. There are clear opportunities to use technology to replace or reduce live animal use in education, as well as to refine students' skills before they interact with live animals.

This presentation will showcase innovative technologies that achieve these goals of replacement, reduction and refinement in higher education. Examples include the use of 3D digital models to teach scientific animal welfare assessment of pigs, and virtual reality and mobile-app simulations for training in low-stress livestock handling. These digital alternatives can actively engage students in the learning process, support self-directed learning beyond the classroom, and provide opportunities to apply theory in situations with real-world relevance. Furthermore, research also shows that such tools can enhance students' motivation and interest in animal welfare, ultimately delivering benefits for students, educators and animals.

DR NATALIE LLOYD

Zoetis

BIO

A veterinarian passionate about improving feline welfare, **Dr Natalie Lloyd** graduated from Massey University, New Zealand, in 1996. She co-owned and managed a Wellington veterinary clinic recognised for its feline-focused care and preventative health programs, becoming the first clinic in Wellington to earn Silver-level Cat Friendly Accreditation with iCatCare.

Advocating for companion animal veterinarians has been a significant part of her career. She served as President of the Companion Animal Veterinarian (CAV) Branch of the New Zealand Veterinary Association (NZVA) from 2019 to 2023. In addition, she sits on the Membership and Nominations Committee and the Essential Standards Committee of the World Small Animal Veterinary Association (WSAVA), helping shape best practices and develop essential guidelines for companion animal veterinarians worldwide.

Her commitment to feline health is further demonstrated through her roles as co-convenor for the Science Week programme of the Feline Chapter of the Australian New Zealand College of Veterinary Scientists and as an Affiliate member of the iCatCare Veterinary Society.

Currently, she works as a Companion Animal Technical Adviser for Zoetis and lives in Wellington with her husband, two teenage children, a soppy Hungarian Vizsla, and two highly entertaining cats, Boris and Hazel.

ABSTRACT

Improving feline welfare: The role of digital technology in pain detection

Pain in cats can be challenging to recognise due to its subtle behavioural demonstration in this species. However, unmanaged pain significantly impacts the welfare of our feline companions.

This talk will highlight digital technology options that aid in the recognition of pain in feline patients, making assessment more objective and accessible. We will explore some of the tools available such as automated facial expression analysis and wearable activity monitors that provide continuous, non-invasive insights into a cat's discomfort. Emphasising the importance of early and accurate pain detection, the presentation will discuss how these technologies can support both veterinary professionals and cat caregivers in improving care and wellbeing.

By bridging traditional observation with digital innovations, this talk aims to raise awareness of the profound effects of pain on cats and provide some practical examples where this technology can support better management of pain as a disease.

DR EDUARDO J. FERNANDEZ

The University of Adelaide

BIO

Dr Eduardo J. Fernandez is the Animal Behaviour Program Director and a Senior Lecturer of Applied Animal Behaviour and Welfare in the School of Animal and Veterinary Sciences at the University of Adelaide (Australia). Most of his work involves behavioural research applied to the welfare, enrichment, and training of zoo, aquarium, and companion animals. His general research focus is on animal welfare and the applied animal sciences, largely influenced by learning and evolutionary theories and perspectives.

He currently runs the Exotic Enrichment and Learning (EEL) lab, which focuses on improving the lives of animals located in zoos, aquariums, and wildlife parks.

Many of his past publications and presentations as well as current research can be found on his ResearchGate profile

ABSTRACT

Improving the lives of zoo animals with technology: A historical and empirical perspective

From the start of the environmental enrichment movement in zoos, the use of technology has played an important role in improving the lives of animals. Starting with the work of Dr. Hal Markowitz and colleagues, animals were given electromechanical devices to play with and operate, in some cases in conjunction with visitors, in order to provide for their welfare. Surprisingly, much of this work a half a century ago is still cutting-edge for zoos, which have been reluctant to adapt technological advances into their regular husbandry and care for animals.

In the following talk, I will examine the use of technology as it has been and can be adapted for zoos. Beginning with some of the early historical advancements, this talk will examine technological use as it has been applied for three purposes: (1) to provide enrichment for zoo animals, both as a form of interactive and non-interactive enrichment, (2) to improve exhibit spaces and design, particularly in the form of providing animals with improved choice and control, and (3) the ability to monitor the welfare of animals, including through the use of software. In all three examples, I examine the role of science to both assess and improve the lives of zoo animals. In short, this talk is aimed at examining how we can use technology and its data-based quantitative counterpart to help make the modern zoo truly a modern enterprise.

ASSOC PROF ALEXANDRA WHITTAKER

The University of Adelaide

BIO

Dr Alexandra Whittaker is an Associate Professor in Animal Welfare and Law at The University of Adelaide, where she leads the Animal Welfare, Cognitive and Affective Neuroscience (AWCAN) laboratory. She has over 20 years' experience working with laboratory animals in the capacity of laboratory animal veterinarian, ethics committee member and as a laboratory animal welfare researcher. She has contributed to national policy development for animals in research, testing and teaching through her role on the NHMRC Animal Welfare Committee.

Her research focuses on applied animal behaviour and welfare assessment, with a particular emphasis on understanding emotional states in animals, especially the identification of positive welfare indicators. Her current projects span species and settings, aiming to improve welfare outcomes through evidence-based approaches. She is actively engaged in advancing welfare assessment methodologies to enhance practicality and reliability of assessment. For instance, her current work leverages artificial intelligence (AI) to automate the detection and analysis of behaviours relevant to animal welfare among zoo-housed animals.

ABSTRACT

Advancing cage-side welfare assessment: Automated monitoring technologies in laboratory animal research

Maximising the welfare of laboratory animals is a key principle of the Australian Code for the Care and Use of Animals for Scientific Purposes, yet traditional cage-side assessments of animal welfare remain limited by subjectivity, time constraints, and challenges integrating the information. This presentation explores emerging technologies that enable automated, multimodal monitoring of animal welfare directly within the home cage environment.

Drawing on recent developments such as the GrimACE system which integrates computer vision-based grimace scoring and pose estimation, this talk will examine how these tools can be used to detect pain and behavioural change more generally in laboratory animals. I will discuss the validation of automated scoring against expert assessments, the implications of analgesic regimes on behavioural outcomes, and the potential for continuous, non-invasive welfare monitoring. The use of such systems offers opportunity for a transformative change in how we identify and respond to harm in laboratory animals, supporting refinement of experimental protocols, improved reproducibility and a strong evidence-based approach to harm-benefit assessment by Animal Ethics Committees.

This talk will also reflect on the practical challenges of implementation, including facility readiness, resourcing, and data interpretation. Pathways for broader adoption across research institutions will be proposed.

PROF CHIARA PALMIERI

The University of Queensland

BIO

Chiara Palmieri is an ECVP Diplomate and Professor in Veterinary Pathology at the School of Veterinary Science (SVS) of the University of Queensland (UQ). She has a specific research interest in small animal oncology, in particular canine prostate cancer, and veterinary oncoepidemiology.

She is the leader of the first Australian veterinary cancer registry (ACARCinom) and co-coordinator of the Global Initiative for Veterinary Cancer Surveillance (GIVCS) committee for the establishment of international standards of veterinary cancer registration.

She is past President of the Australian Society for Veterinary Pathology and, within UQ SVS, she has been postgraduate coursework coordinator, Higher Degrees by Research coordinator and Director of Research.

She is now coordinator of the DVClinSc program (combined residency and research program) within UQ SVS, and coordinator of the residency program in veterinary pathology.

ABSTRACT

Harnessing the power of cancer registries in veterinary care

Cancer is one of the most significant health and welfare challenges facing companion animals, yet our understanding of its true impact remains limited by the absence of systematic data. This talk will explore how digital surveillance—specifically, the collection and analysis of cancer data from pathology laboratories—can transform our approach to cancer surveillance and prevention.

Through initiatives like the ACARCinom registry, we are beginning to uncover patterns in cancer incidence, breed and age predispositions that may not only inform earlier diagnosis and better care but also open the door to preventive strategies. By linking clinical diagnoses with environmental variables (e.g. pollution, land use, industrial exposure), we can begin to understand how location influences disease burden. This approach not only enhances early detection and care but also opens a path to prevention by identifying modifiable environmental risks.

The presentation will highlight current findings, methodological challenges, and the potential for digital tools to shift cancer prevention from the clinic to the community, at the same time exploring how similar approaches could be extended to other animal welfare issues in the digital age.

DR VANESSA PIROTTA

Macquarie University

BIO

As one of Australia's leading wildlife scientists, **Dr Vanessa Pirotta** merges cutting-edge technology with conservation science. From using drones to collect whale snot to developing AI tools to combat illegal wildlife trafficking. A passionate communicator, Vanessa has been recognised as one of Science and Technology Australia's Superstars of STEM, the Australian Financial Review's Top 100 Women of Influence, Women's Agenda 2024 Emerging Leader in Science and in 2025, Vanessa was named the NSW Premier's Woman of Excellence.

As the lead scientist for the citizen science project Wild Sydney Harbour, she connects communities with marine life while promoting the fusion of Indigenous knowledge and Western science. Vanessa is also a proud author of educational children's and adult books, which illuminates her vision for STEAM being part of the everyday.

ABSTRACT

Use of drones in marine mammal research

Drones have revolutionised the way we access animals in the marine environment. This means we can now view behaviour, collect biological samples and see marine life in new ways. In this talk, Vanessa explores how modern tech is helping us learn more in the marine environment.

DR BONNY CUMMING

AMRRIC (Animal Management In Rural & Remote Indigenous Communities)

BIO

Dr Bonny Cumming is an experienced veterinarian with a broad range of strategic planning and project management skills. With a career focused on One Health principles, she integrates community development, public health, veterinary services, and environmental conservation to enhance the wellbeing of animals, humans, and ecosystems. Raised on Jarowair and Giabal land on the outskirts of Toowoomba, Dr Cumming's career has exposed her to an incredible diversity of species, environments, and contexts—from busy wildlife triage hospitals to research with elephant seals in Antarctica, and from working as a general practitioner delivering individual animal veterinary care to designing and implementing companion animal population health strategies in remote Australian communities.

Dr Cumming holds the position of Head of Innovation and Strategy at AMRRIC (Animal Management in Rural and Remote Indigenous Communities), where she has worked since 2013. In this role, she develops, delivers, and evaluates strategic remote Indigenous community animal management initiatives, involving on-ground animal health and biosecurity capacity-building training, advocacy, and One Health focused research.

Dr Cumming holds a Bachelor of Veterinary Science with First Class Honours (University of Queensland, 2008) and a Masters of Veterinary Studies in Conservation Medicine (Murdoch University, 2012). Her professional journey reflects a deep commitment to advancing veterinary science and enhancing community health through innovative and inclusive strategies.

ABSTRACT

Technology opportunities for animal health management in remote communities

Access to veterinary care in remote communities has long been constrained by distance, limited infrastructure, and systemic inequities. For more than two decades, AMRRIC has utilised digital tools such as telemedicine to bridge these gaps, enabling timely advice and support for both companion animals and the communities who care for them. Today, new innovations are building on this foundation. The AMRRIC App is designed not only as a data collection tool, but as a platform that empowers communities to actively manage their own companion animal populations, supporting local ownership and decision-making.

This presentation will explore the opportunities and challenges of digital integration in remote animal health, with particular attention to connectivity limitations and the importance of culturally appropriate solutions. Central to this discussion is Indigenous data sovereignty: recognising the rights of Aboriginal and Torres Strait Islander peoples to govern the collection, access, and use of their community data. By situating digital innovation within this context, Bonny will highlight how tools can both strengthen animal welfare and respect community control.

In doing so, AMRRIC invites dialogue on how digital futures can uphold principles of equity, trust, and self-determination—ensuring animal health becomes a pathway to community wellbeing.

NICOLA O'BRIEN

Social Media Animal Cruelty Coalition, Asia for Animals Coalition

BIO

Nicola O'Brien has dedicated her life to protecting animals since first encountering animal rights activism as a teenager. After gaining a degree in Animal Welfare, she worked at the Wild Futures' Monkey Sanctuary in the UK in fundraising and communications, supporting monkeys rescued from the primate pet trade. She then spent almost a decade with Freedom for Animals, leading campaigns against zoos, circuses, the wild animal pet trade, and the UK's first campaign focused on animals in commercial aquariums.

Alongside her campaigning work, Nicola has served as a trustee for multiple charities, including Tiny Paws Mcr, which rescues and rehomes rodents and rabbits, and the Palestinian Animal League Solidarity. She now heads the Social Media Animal Cruelty Coalition (SMACC), part of the Asia for Animals Coalition, a global initiative tackling animal cruelty content online. SMACC works with social media platforms such as Meta and TikTok, while driving public awareness campaigns to protect animals from exploitation and abuse.

ABSTRACT

Social media and animal welfare

Digital platforms have become central to how people engage with animals, offering opportunities for awareness, fundraising, and connection. Yet alongside these positives, a disturbing trend has emerged: the spread of animal cruelty content. From staged "rescues" to deliberate abuse filmed for entertainment, such material is shared widely, often rewarded by algorithms and monetisation systems that drive engagement.

This session will introduce the scale and nature of this hidden problem, drawing on research from the Social Media Animal Cruelty Coalition. Nicola O'Brien will outline how cruelty content thrives online, why it matters for animal welfare globally, and what makes it so difficult to tackle.

Although efforts to address this issue are still at an early stage, progress is being made. Engagement with major platforms, discussions with policymakers, and growing public awareness are laying the groundwork for change. By sharing current approaches, challenges, and opportunities, this talk aims to open up the conversation on how the animal protection sector can work with, and challenge, technology to eliminate animal cruelty online.

RSPCA