



THE UNIVERSITY OF

SYDNEY

—
Sydney Institute
of Agriculture

AgTech and Food: Industry Capabilities

Animal Health and Welfare

Improving animal health and welfare

Expertise

Our overall objective is to ensure sustainability across production systems through the optimisation of animal health and welfare. We conduct leading research across the supply chain covering all animal agriculture industries including alpaca, aquaculture, beef, dairy, poultry and sheep health and welfare.

We have research spanning across all aspects of health and welfare research:

- **On-farm:** we are working with government, RDCs and industry to deliver solutions for farmers and improve farm biosecurity.
- **Paddock-to-plate:** working across an integrated supply chain from paddock to plate to ensure sustainability and consumer confidence.
- **Technology:** applying new and emerging technologies to better understand the needs of livestock and allow for remote and early detection of declining health/welfare.
- **Disease and immunity:** early detection and interventions, development of vaccines and monitoring of effectiveness; understanding immune fitness; epidemiology.
- **International research and development:** partnering with international organisations to improve health and welfare in developing countries including, among others, Bangladesh, Cambodia, Indonesia, Laos and Pakistan.
- **Improved husbandry:** assessment and interventions to improve health and welfare across aquaculture, beef, dairy, sheep and poultry systems.

- epidemiology for improved understanding of animal health and farm biosecurity.

Case Studies

Meat and Livestock Australia Donor Company (MLADC): the University of Sydney has 6 health and welfare research programs funded through the MLADC. These programs are focused on improving animal welfare in the red meat industry through objective measures of welfare, reducing mortality rates, pain mitigation, immune resilience and fitness, and ensuring meat quality across the supply chain.

NSW Sheep Industry Fund: investigation of lower virulent forms of footrot in NSW sheep flocks to improve the health and welfare of the animals.

Australian Wool Innovation (AWI): development and evaluation of new footrot vaccines to improve the health and welfare of sheep.

AgriFutures broiler welfare: these programs of work focus on developing strategies to improve health and welfare in broiler chickens with a focus on leg strength, incubation effects, slower growing broilers and the value of perches.

AgriFutures alpacas: alpaca transport research to develop best practice guidelines for industry.

ACIAR: several international research and development projects in countries such as Cambodia, Laos and Bangladesh.



Tools and methodologies used

We have linked with industry and commercial partners to deliver high quality, applied solutions to current and future issues:

- commercial farms, feedlots and processors
- on-farm pain management
- immune function and biomarkers
- vaccine development
- remote sensing technologies

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Our experts

Dr Sabrina Lomax (Research Capability Coordinator): research focused on the interaction between livestock behaviour, production and welfare.

Associate Professor Joy Becker: aims to increase the health and welfare of finfish in aquaculture through an integrated approach involving aspects of fish biology, pathology and epidemiology.

Associate Professor Katrina Bosward: research focused on pathogenesis and control of infectious diseases of animals, particularly zoonotic diseases like Q fever.

Associate Professor Russell Bush: uses interdisciplinary methodologies and knowledge-based information dissemination strategies to improve the lives of farming communities and consumers through increasing the efficiency of quality food production through a health/welfare/production approach.

Associate Professor Cameron Clark: research focused on turning existing, and new sensor derived, farm data into information that farmers can use to improve profit, lifestyle and animal health.

Dr Kumi de Silva: has interests in the immunology of infectious diseases, vaccinology and gender equity and diversity.

Associate Professor Navneet Dhand: aims to use epidemiological and statistical tools to improve public health and to solve difficult problems confronting animal industries.

Dr Om Dhungel: working in sheep health research with internationally recognised expertise in footrot and with distinguished achievements in footrot vaccine development and commercialisation.

Professor David Emery: an expert in ruminant mucosal immunity, disease pathogenesis and vaccination for exotic and endemic infectious diseases and gastrointestinal nematodes.

Associate Professor Luciano Gonzalez: research interests focused on improving profitability and productivity of livestock systems along with animal welfare, sustainability and rural life; particularly through the development of new and innovative technologies and methodologies.

Associate Professor Peter Groves: research focused on epidemiological approaches to poultry disease management. Peter is currently part of the Poultry Research Foundation team.

Associate Professor John House: research interest focuses are in infectious diseases of livestock.

Dr Wendy Muir: research interest in avian immunology and health, poultry production and in particular the optimisation of broiler leg strength.

Dr Karren Plain: interests in animal resistance to infectious diseases and better understanding disease pathobiology. She was one of the principal scientists involved in the development of a new molecular diagnostic test for Johne's disease (HT-J).

Dr Auriol Purdie: interests in the interactions between a host and pathogen at the genomic and proteomic level and how these inform our understanding of the pathogenesis of disease.

Dr Melanie Smith: interested in sustainable best practice animal production across the red meat supply chain. Her research interests include on-farm animal production and its impact on meat processing, quality traits and consumer eating quality. Melanie has a keen interest in the interface between research and industry practices.

Associate Professor Jenny-Ann Toribio: uses applied epidemiological methods to investigate the distribution of transboundary animal diseases and zoonoses, and to evaluate biosecurity practices to improve disease control in Australia and in developing country contexts.

Dr Dominique Van der Saag: interested in improvements to animal welfare for sustainability of livestock industries. Her research focuses on novel methods for assessment and alleviation of pain in ruminants.

Associate Professor Peter White: research interest in pain management in production animals and pharmacology.

For further enquiries contact:

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