

UNE | Your destination for poultry research and learning



Connecting research and industry to
deliver practical, evidence-based solutions
for the Australian poultry sector



Poultry Research at UNE

Introduction

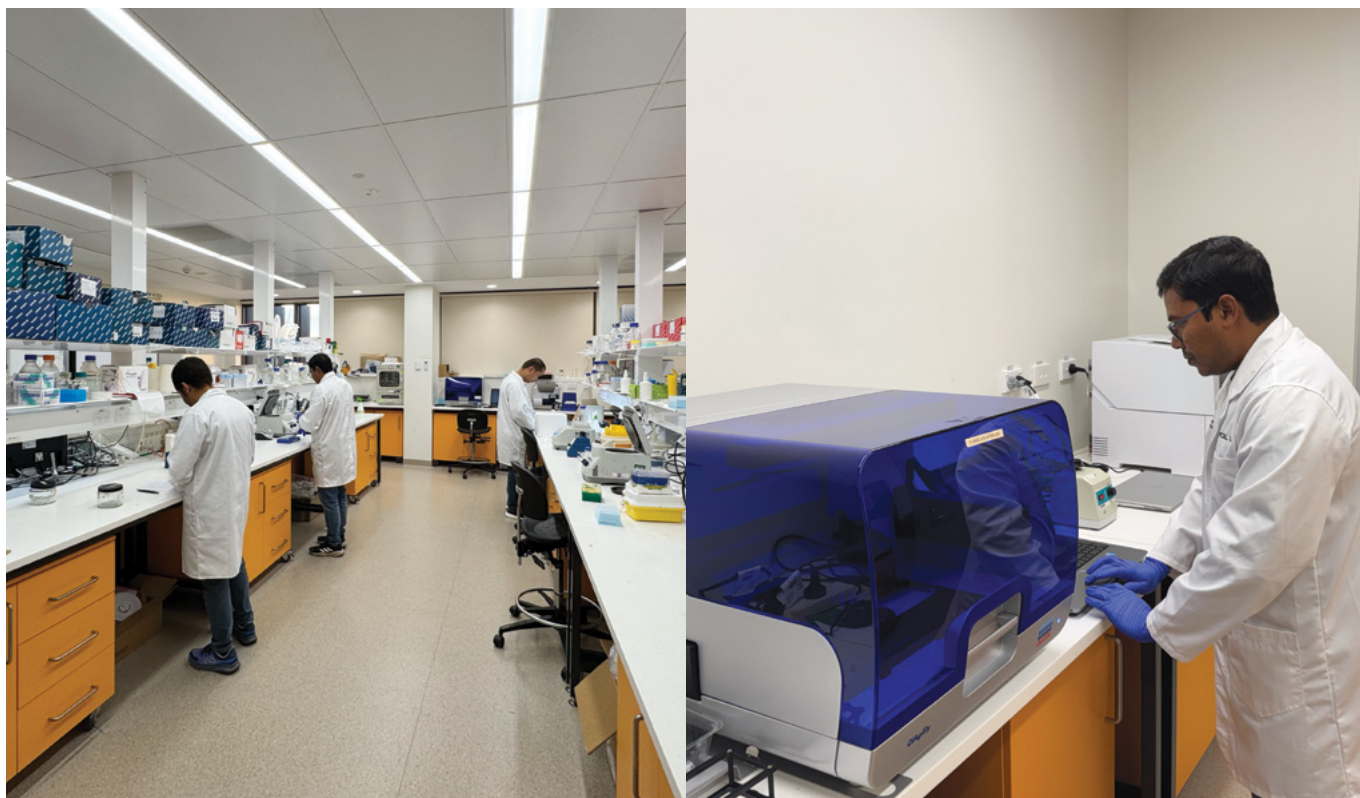
The University of New England (UNE) established in 1954 was Australia's first regional university. It has a long and proud history of poultry research dating back to 1960 and the work of Professor Rob Cumming with the poultry farmers in the Moonbi valley and Tamworth district. In the intervening 60 years UNE has developed possibly the most complete set of poultry research facilities in Australia and a broad staff base researching a wide range of disciplines related to poultry.

For 14 years between 2003 and 2017 UNE led two iterations of the Australian Poultry CRC (Cooperative Research Centre). These CRCs were very large multi-institutional and multidisciplinary organisations with broad goals in research, education and training. In 2017 Poultry Hub Australia was established at UNE to continue some of the good work of the preceding CRCs with strong industry input and focus. The strong industry focus of UNE's poultry research was exemplified in the early days by the egg producers of Moonbi and Tamworth developing a voluntary levy system in 1963 to fund and support the research at UNE on infectious bronchitis that Prof. Cumming was undertaking. This was one of the precursors to the current Research and Development Corporation funding model widely

used by the agricultural industries today. As of mid 2026 Poultry Hub Australia will transition to become a research centre within the School of Environmental and Rural Science under the leadership of a soon to be appointed Professor in Poultry Science at UNE. All poultry researchers at UNE will be affiliated with the new Centre.

In this brochure we aim to introduce you to the current facilities and staff at UNE working in poultry research and teaching. We hope that this might prompt you or your company to take one or more of the following opportunities:

- Conduct commissioned research for your organisation
 - Collaborate with UNE staff on competitive research grant applications for funding
 - Consider UNE as a destination for further professional education for you, your family or others you may know
 - Join Poultry Hub Australia as an industry member and help shape the direction of poultry research at UNE, a key poultry research institution.
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Expertise and capability

Staff at UNE work closely with industry partners in the chicken meat and egg industries together with chicken breeding, feed and health companies. Our main areas of expertise are in poultry nutrition, gut health and microbiology, infectious diseases, vaccine evaluation, welfare and behaviour.

Key areas of capability include

- Specialist feed formulation and production
- Feed nutrient raw material analysis using both wet chemistry and NIR
- Evaluation of bird performance, including capacity for automated feed blending, daily feed and water intake measurement
- Large scale replicated experiments with up to 96 pens of birds in a controlled environment
- Digestibility determination
- Viscosity determination
- Gut permeability
- Microbe quantification and detection
- mRNA expression of over 200 genes
- Egg quality, internal and shell
- Meat quality (fully equipped meat science laboratory).
- Chicken respirometry and calorimetry chambers for calculation of Net Energy (24 chambers)
- Facilities for free range, caged and floor-based egg production systems
- Assessment of bird welfare
- Behaviour measures including ethograms, RFID range use tracking, building machine learning models
- DNA sexing
- Infectious disease work in 24-isolator PC2 facility
- Evaluation of vaccine safety and efficacy with and without virulent challenge
- Chicken parasitology
- Antibody and cell mediated immune responses via serology, flow cytometry and lymphocyte response assays.
- Application of information technology to the poultry industry.

Facilities for poultry research

UNE has a wide range of animal and laboratory-based facilities for poultry production located on the main campus, Laureldale Research Station some 5km from the campus and the Kirby Smart farm, some 15km from the campus.

The animal facilities and research feed mill are professionally managed by the staff of the **Centre for Animal Research and Teaching (CART)**. The CART Director and Operations managers are Veterinarians with PhDs with extensive research experience and the staff also includes the UNE Animal Welfare Officer, also a registered veterinarian.

Key facilities on the main Armidale campus within the CART enclosure:



Multi-purpose Building (W074)

Completed in 2019, this modern facility offers highly flexible research space. The building can be subdivided into multiple zones, each with independent control of environmental conditions.

Features:

- Flexible configuration (quarters, halves, or combined spaces)
- Independent control of air conditioning, ventilation and lighting
- 96 pens (1.06 m² per pen)
- Remote-controlled environmental systems (4 zones)
- Integrated camera system for behavioural studies
- Two research laboratories
- Located adjacent to modern postmortem facilities and laboratories.

Smaller rooms and calorimetry chambers (W002A)

This versatile facility supports a wide range of experimental work.

Features:

- Smaller rooms for brooding chicks with varying degrees of environmental control
 - Remote monitoring capability via camera systems
 - 16 poultry calorimeters for net energy studies
 - AME cages
 - 8 metabolic chambers for measuring methane, carbon dioxide, and ammonia emissions.
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Also included in the enclosed CART area is a large well equipped **postmortem room** neighbouring **general-purpose laboratory** and a **surgery**. Facilities for **egg incubation and hatching** are also available.



Feed Mill (W072)

Commissioned in 2015, the feed mill enables precise diet formulation for research trials.

Capabilities:

- Production capacity of up to 3 tonnes per hour (with or without steam pelleting)
- 500 kg and 300 kg mixers
- Small mill (100 kg/hour capacity)
- Large roller mill
- Bagging and pallet storage (up to 20 pallets)
- Preparation room and bulk grain handling system
- Two 8-tonne external silos.



Ring Road Poultry Facility

- Smaller-scale, isolated facility suitable for animal health and precision nutrition studies
- 48 floor pens (0.96 m² per pen)
- Programmable environmental controls
- Air conditioning and gas heating systems
- Precision robotic feeding system (“Dorothy”)
- Feed storage and preparation area
- Individual pen automated water intake measurement.

There is an extensive network of laboratories that support poultry research including several nutrition laboratories and those for **egg and meat science, molecular science, immunology, imaging, microbiology and parasitology.**



PC2 Isolator Facility (W033)

Also on campus and established in 2002 is a specialised containment laboratory supporting advanced research in animal health and disease.

Features:

- Certified Physical Containment Level 2 (PC2) facility
- Accredited by the Office of the Gene Technology Regulator (OGTR) enabling use of genetically modified organisms
- 24 positive pressure isolators
- Supports research in: infectious diseases and vaccine testing including with genetically modified organisms and virulent challenge.



Facilities at Kirby Smart Farm

The main facility here is the Rob Cummings Poultry Innovation Centre used for a wide range of nutritional and behavioural studies.

Rob Cummings Poultry Innovation Centre (Kirby SMART Farm):

- Main shed divided into four controlled rooms
- Fully programmable temperature, ventilation, and lighting
- Up to 144 floor pens (0.96 m² per pen)
- Remote monitoring and camera systems
- Feed storage and preparation facilities
- Backup generator power
- Ideal for nutrition, welfare, and replicated pen studies.



Facilities at Laureldale Research Farm

The work here is mostly with layer chickens with caged layer, general purpose and free-range research facilities available. Supports nutrition, welfare, health and behavioural research.

Features:

- Commercial-scale layer shed (cage system; 600 cages, each with capacity of 1-2 hens)
- General purpose/Free range shed and range (20 large pens), or up to 4000 bird floor pen space with adjacent laboratory space.

Education and courses

UNE offers a wide range of educational offerings for those already with a tertiary qualification or those undertaking a degree for the first time.

For those with previous qualifications a range of **graduate certificates** and **diplomas** is available, also **coursework and research masters degrees** as well as **PhD** qualifications.

For undergraduate study, the main degree streams of interest are **Rural Science, Agriculture, Animal Science** and **Agribusiness**.

Specific units with significant poultry content include:

- Poultry Production (PLTY301 / PLTY501)
- Applied Animal Nutrition (ANUT300/500)
- Animal Biosecurity (ANSC314/514)
- Animal Production Systems and Products (ANPR211)
- Animal Function Health and Welfare (ANPR321)
- Disease in Animal Production (ANPR417/517)

Online short course option:

UNE and Poultry Hub Australia offer an online Master Course on Poultry Nutrition.

This flexible online course covers feed ingredients, nutrient requirements, and practical feed formulation for industry application and can be undertaken as a standalone option.

Key researchers and areas of research strength:

Nutrition/gut health

Prof. Shubiao Wu	swu3@une.edu.au
Dr Kosar Gharib-Naseri	kosar.naseri@une.edu.au
Dr Amy Moss	amoss22@une.edu.au
Dr Nishchal Sharma	Sharma.nsharma4@une.edu.au
Dr Sosthene Musigwa	Musigwa.smusigwa2@une.edu.au
Dr Alip Kumar	akumar28@une.edu.au
Dr Hong Nguyen	Hong.Nguyen@une.edu.au
Dr Thi Hiep Dao	tdao2@une.edu.au
Dr Collins Asiamah	casiama2@une.edu.au
Prof. Mingan Choct	mchoct@une.edu.au
Prof. Gene Pesti	gpesti@une.edu.au

Health, infectious disease, parasitology, and immunology

Dr Teka Dewo	tdewo2@une.edu.au
Dr Awol Assen	aassen2@une.edu.au
A/Prof. Nicholas Andronicos	nandroni@une.edu.au
Prof. Steve Walkden-Brown	swalkden@une.edu.au

Behaviour and welfare

A/Prof. Adam Hamlin	ahamlin@une.edu.au
Dr Bonnie Mayes	bmayes4@une.edu.au

Computation, analytics and modelling

A/Prof. Mitchell Welch	mwelch8@une.edu.au
Mr Johan Boshoff	jboshoff@une.edu.au

Many staff are involved in cross-disciplinary research teams.





Contact us

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PHA Membership Prospectus



UNE Poultry Hub – Master Course on Poultry Nutrition



Study at UNE



The Centre for Animal Research and Teaching (CART)