

# Recent Advances in Animal Nutrition – Australia 2023

Frances C. Cowley<sup>A,\*</sup> 

For full list of author affiliations and declarations see end of paper

**\*Correspondence to:**

Frances C. Cowley  
School of Environmental and Rural Science,  
University of New England, Woolshed  
Building W49, Armidale, NSW, Australia  
Email: [fcowley@une.edu.au](mailto:fcowley@une.edu.au)

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Wayne Bryden



## ABSTRACT

The Biennial Conference of Recent Advances in Animal Nutrition – Australia was held on 27–28 July 2023. The special issue contains latest research in the field of animal nutrition across the most economically significant animal species, including poultry, pigs, sheep, cattle, companion animals and aquaculture.

The Recent Advances in Animal Nutrition in Australia (RAAN-A) conference in 2023 continued its tradition of fostering the sharing of the latest research in the field of animal nutrition across the most economically significant animal species, including poultry, pigs, sheep and cattle, and also companion animals and aquaculture. RAAN-A is one of the few conferences worldwide devoted to animal nutrition science across the species, and this unique meeting brings together intensive and extensive production systems, industry and research, making it one of the most thought provoking and stimulating symposia in Australia.

The 2023 program presented the most significant recent animal nutrition advances internationally and locally with the plenary sessions covering a range of timely themes. The first day highlighted the role of animal nutritionists in feeding the world. The societal role of meat was contrasted in developing and developed economies to emphasise the importance of animal-sourced foods in the human diet and to counteract much of the misinformation by those who advocate meat-free diets. The challenge of sustainably feeding animals, whether as companions or as sources of high-quality protein for humans, was covered from multiple angles. We were proud this year to have a session devoted to aquaculture nutrition, as an increasingly important source of protein for feeding the world sustainably. Other plenary themes addressed the issues of nutritional effects on the microbiome, timed feeding (chrononutrition) and species-specific sessions. Three named lectures were presented:

## The McClymont Rural Science Review

Named in honour of Professor G. L. (Bill) McClymont (1920–2000), AO, BVSc(Syd), PhD(Cantab), Hon. DRurSc(UNE), FAIAS, FASAP, Foundation Dean (1955–1976) of Rural Science at the University of New England (UNE), and an eminent nutritional scientist. He pioneered the development and application of ecological principles to the teaching and

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practice of agriculture. Professors David Pethick, Neil Mann and Ian Lean presented the McClymont Rural Science Review at RAAN-A 2023 as a team, evaluating the role of meat throughout human evolution, the critical role that animals play in developing countries and in sustainable food systems globally.

#### Lectures:

- 2015 A. W. Bell\* and P. L. Greenwood
- 2017 J. B. Furness\* and J. J. Cottrell
- 2019 G. S. Lynch\* and R. Koopman
- 2021 M. J. Gidley
- 2023 D. W. Pethick\*, W. L. Bryden, N. J. Mann\*,  
D. G. Masters and I. J. Lean\*

### The Annison-Leng Oration

The Annison and Leng Oration was named in honour of Professor E. F. (Frank) Annison, (1926–2023) AM, BSc (Lond), PhD (Lond), DSc (Lond), FRSCChem, FNSA, FASAP, and Professor R. A (Ron) Leng BSc (Notts), PhD (UNE), DRurSc (UNE), FASAP.

Frank Annison, who originated from the UK was an international leader in the nutritional biochemistry of ruminants and pioneered isotope dilution techniques to quantify intermediary metabolism in sheep. He later extended this technique to lactation and mammary metabolism. Frank's initial contributions were made while working at UNE, latter at Unilever in the UK and finally at the University of Sydney. Frank's first PhD student at UNE was a Yorkshireman, Ron Leng, who remained at UNE throughout his career. Ron has made major contributions to improving the nutrition of ruminants in the tropics and sub-tropics in both Australia and the developing world. In 2023, Kevin Harvatine, Penn State University, USA, challenged ruminant nutritionists to consider the rumen's inherent metabolic rhythms to permit improved synchronisation of nutrient absorption and utilisation to increase milk synthesis.

#### Lectures:

- 2017 R. A. Leng
- 2019 H. V. Oddy\*, H. C. Dougherty and J. W. Oltjen
- 2021 J. V. Nolan
- 2023 K. J. Harvatine

### The Cumming-Farrell Oration

Named in honour of Professor R. B. (Rob) Cumming, (1928–2003) BVSc (Pret), PhD (UNE), MRCVS and Professor D. J.

(David) Farrell, MRAC, MSA (Br.Col), PhD (UNE), DRurSc (UNE), FASAP.

Rob Cumming and David Farrell, respectively from South Africa and Ireland, established UNE as a leading site of poultry nutrition research in Australia. Rob was also a noted avian virologist who remained at UNE throughout his career. David also worked with pigs, especially amino acid digestion and completed his career at the University of Queensland. Both Rob and David made numerous contributions to improving the nutrition and health of poultry and pigs in developing countries. Importantly, they were pivotal in the establishment of Recent Advances in Animal Nutrition in Australia and David championed the meeting for two decades. In 2023, Rob van Barneveld used net protein contribution of pigs to demonstrate the role that livestock supply chains are able to provide positive net value to human food supply.

#### Lectures:

- 2019 J. R. Pluske
- 2021 S. Shini\* and W. L. Bryden
- 2023 R. J. van Barneveld\*, R.J.E. Hewitt and D. N. D'Souza

This year the plenary themes of the conference have been enhanced by over 20 contributed papers, as oral and poster presentations. All invited and contributed papers have been peer reviewed. Since 2013, and again this year, the RAAN-A conference has partnered with *Animal Production Science* for this special edition of the journal where all invited manuscripts and abstracts of contributed papers are published. The Organising Committee (Fran Cowley, Wayne Bryden, Frank Dunshea, Amy Moss, Ian Sawyer, Bob Swick, Rob van Barneveld, Natalie Morgan, Zoey Durmic and Rodrigo Albornoz) thanks all invited and contributing authors for sharing their research at this year's conference. Special recognition goes to Kate Murphy and Jenny Lawler of KAM Events for their invaluable assistance in organising this year's conference, and to the guest editor of the proceedings, David Masters.

The committee would like to thank all the sponsors, industry partners, speakers and participants for their contributions to the success of the 2023 RAAN-A Conference. The interactive involvement of speakers and participants, and the meeting of industry and research in this conference continue to foster new ideas for the next wave of advances in animal nutrition, and show Australia as a world leader in this field.

*Associate Professor Fran Cowley*

*Chair – RAAN-A Organising Committee*

*University of New England*

Note: The 2021 Annison-Leng Oration was presented by Professor John Nolan, who reviewed the first 50 years of RAAN-A (*Animal Production Science*, 2022, **62**, 1060–1089). In that paper, fig. 4 appeared without the names of those in the picture. The picture is reproduced below with the names included as follows:

David Farrell with attendees at the conference dinner in 1993. Left to right around the table: Peter Selle, Linda Browning, David Farrell, Mike Gibney (Dublin), Rick Carter, Wayne Bryden, Sue Low, Mrs Carey, Tony Carey.



**Conflicts of interest.** The author declares that they have no conflicts of interest.

**Author affiliation**

<sup>A</sup>School of Environmental and Rural Science, University of New England, Armidale, NSW, Australia.

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