



2023 Annual Report

Poultry Research Foundation

Faculty of Science
Sydney School of Veterinary Science

Governance Statement

The Poultry Research Foundation recognises the importance and benefit of reviewing its adoption and alignment with governance principles and provides the following report.

Principle 1 – Lay solid foundations for management and oversight

Nature of the entity:

The Poultry Research Foundation is a part of the University of Sydney (ABN 15 211 513 464) and not separately incorporated under a State or Commonwealth Act. The Foundation is required to gain prior approval for its fundraising activities from the appropriate University delegate. The Foundation's activities are not-for-profit and covered by the DGR status of the University of Sydney. The University is exempted from the requirement to hold an Authority to Fundraise and obligations upon holders of such an authority but is still required to comply with the balance of provisions of the Charitable Fundraising Act.

Roles of board / council and management:

The Foundation operates under the authority of the Senate of the University of Sydney, as approved in June 2011, and has no powers of delegation. The Foundation conducts its affairs pursuant to the Foundation Rules and the relevant policies of the University.

Principle 2 – Structure of the council to add value

The Council of the Foundation in 2022 consisted of 10 members. (Refer to page 8)

Council members were elected at the Foundation's AGM on 30th March, 2021. There is not a separate nomination committee of Council. The full Council resolves on nominations for co-opting of members to fill vacancies outside of the process of election at the AGM. There was not a performance evaluation of the Council undertaken in the reporting period.

Principle 3 – Promote ethical and responsible decision-making

Council members have been provided with the University of Sydney Foundation Governance Guide, Foundation Rules, Code of Conduct, Work Health & Safety policy and the External Interests policy. All these policies are available on the University's Policy Register, as are other relevant University policies regarding harassment, grievance procedures and the Delegations of Authority.

Principle 4 – Safeguard integrity in financial reporting

The annual accounts of the Foundation are prepared by the financial staff of the University, signed off by the Director of the Foundation and included in this Annual Report to the Senate. The Foundation is part of the University and therefore does not have its own audit sub-committee. While the Annual Financial Report of the University is audited by the Audit Office of NSW, the Annual Accounts of the Foundation have not been audited.

Principle 5 – Make timely and balanced disclosure

The Foundation complied with the reporting and disclosure requirements of the Senate. These include an annual budget and this Annual Report

Members and Council have been made aware of the processes for disclosure pursuant to the Code of Conduct, External Interests policy, which include protected disclosure to the ICAC, to the Ombudsman or to the Auditor General.

Principle 6 - Respect the rights of shareholders, members, staff, volunteers, clients & other stakeholders

The Foundation Council and/or membership consists of invited industry professionals, industry bodies and University representatives, whose input is invited via the Annual General Meeting and Council meetings of the Foundation. Each year the Foundation conducts a General Meeting in Oct/Nov and the AGM in March/April.

Principle 7 - Recognise and manage risk

The Foundation recognises its activities within University premises or other premises require risks such as health and safety, environmental protection, privacy, trade practices, and compliance with the Charitable Fundraising Act to be considered and managed. The Foundation has managed these risks during the year by complying with risk management procedures as outlined by the University.

Principle 8 – Remunerate fairly and responsibly

No member of a Council is entitled to receive any remuneration for acting in that capacity except reasonable remuneration on a basis which has first been approved in writing by the University Officer (Foundations).

Members of the Foundation Council may be reimbursed for reasonable expenses after written approval of the University Officer (Foundations). Any such instances are recorded in the minutes of the Council.

Foundation Objectives

OBJECTIVES OF THE FOUNDATION

The objectives of the Poultry Research Foundation are to advise the Senate of the University of Sydney and the Vice-Chancellor on matters associated with poultry research, education and scholarship within the University of Sydney and to provide an interface between the Australian poultry and allied industries and the University.

In doing so, the Foundation shall increase the resources of the University by way of membership to the Foundation and utilising benefits given by members in provision of services and other non-financial contributions.

AIMS OF THE FOUNDATION

1. To provide an interface between the poultry and allied industries in Australia and the University of Sydney.
2. To undertake research of relevance to these industries.
3. To assist in the training of scientific and technical personnel to service the private and public sectors of these industries.
4. To act in an industrial liaison capacity.

PRIORITIES 2023

1. Develop links between the University of Sydney and Poultry Hub Australia
 - a. Research projects
 - b. Educational programs
 - c. Postgraduate scholarships
2. Develop research projects lead by the Director of Poultry Science
3. Complete infrastructure maintenance of the Poultry Unit
4. Promote postgraduate opportunities within the Poultry Research Foundation
5. Organise the Australian Poultry Science Symposium
6. Management of the Foundation is vested in a Council which comprises the President, Deputy President, Director, Faculty of Veterinary Science Dean and Provost Nominee along with elected Industry Members from the categories of Governors and Executive Members, Honorary Governors and Ex Officio Members.
7. The administrative office and Research Unit are based at Camden.

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President's Report

I'm pleased to be here today to present the 2023 president's report for our AGM. It has been a busy and productive year for the Poultry Research Foundation.

In March 2023 we welcomed Professor Mingan Choct to the Poultry Research Foundation as the Director after the retirement of Associate Professor Peter Groves. Professor Choct has brought a wealth of knowledge and expertise to the Foundation. In his first 12 months as Director he has worked closely with many University and PRF staff to set a solid foundation for the Poultry Research Foundation.

The main area of focus for 2023 has been:

1. Governance
2. Industry engagement
3. Research
4. Transition
5. APSS

Governance

Over the past twelve months, we put a strong emphasis on good governance with clear focus on procedural transparency and timeliness, financial management and operational effectiveness. For instance, we have been able to meet all the compliance requirements of the Foundation by following every item of the Foundation Rules, such as delivering the meeting papers and annual report in a timely manner, and presenting the Foundation finances accurately.

Industry engagement

The PRF held four industry events, including APSS 2023, two meetings of the PRF Council, and one Industry Think Tank meeting. All of these events were well attended, reflecting the industry support of the PRF. The PRF is a small unit with less than a handful of permanent staff, but due to the goodwill and tremendous contributions by adjunct colleagues and the amazing productivity of our staff, we were able to maintain strong industry links and provide leadership in industry-academia collaboration.

Research

The PRF staff were able to attract a significant amount of funding, including the \$2.2M AgriFutures' Nutrition Consortium Program as well as ARC, AgriFutures and Australian Eggs grants. In addition, the PRF staff were able to accommodate numerous contract research trials to support student projects and cover operational expenditures over the year. In the meantime, a large number of peer reviewed papers were published, exceeding 7 journal articles per academic on average.

Transition

The transition of the PRF to a research centre within the university was raised several years ago to the Industry Council and two efforts were made by Dr Peter Groves to make it happen to no avail. Professor Choct continued to pursue at the request of the Dean of Science, Professor Marcel Dinger. A draft transition case was presented to the PRF Industry Council on the 8th of November, 2023 where the members extensively discussed the pros and cons of the proposal and gave feedback to the university. The transition case is a major topic of this AGM and hence it will not be covered in detail here.

APSS

The Australian Poultry Science Symposium was held in February 2023 at the Sheraton Hyde Park Hotel. This was the first face to face meeting after Covid and the conference was well attended. APSS is the PRF's flagship event, organised by our staff every year. It is a major commitment of the University and much work occurs behind the scene. APSS has now become a well-known conference in the world. I thank the PRF staff, in particular, Jo-Ann Geist and Ben Geist, for their effort as well as Professor Julie Roberts, the former president of the WPSA Australian Branch, for her tireless work in managing the papers and editing the proceedings. I would also like to thank our symposium sponsors, we are always grateful for your support and if you're not a foundation member, I encourage you to join and help steer the future of poultry research in Australia.

In closing, I would personally like to thank the members of the PRF Industry Council, which we have 3 Governors, 2 executive and 13 associate members. I look forward to another valuable year together in 2024.

The Poultry Research Foundation wouldn't be where it is today without the hard work and dedication from the PRF team in 2023. I thank the team for their on-going support to help navigate a bright future ahead for the PRF.

I'd also like to thank the Dean, Faculty of Science, Professor Marcel Dinger, the Heads SSVS and SOLES, Professors Jacqui Norris and Professor Jennifer Potts as well as other colleagues from the University of Sydney for their continued support of the PRF.

And finally, thank you all for attending today's AGM whether in person or online, your ongoing interest and support is very important to the future of poultry research in Australia and The University of Sydney.

Lisa Jamieson,

PRF President, May 2024

Director's Report

Professor Mingan Choct, Director, PRF

I took up the interim Director position at the Poultry Research Foundation on the 21st of March 2023 working two days per week after the retirement of Dr Groves in early 2023, and the tremendous trust placed on me by colleagues at the PRF is well appreciated. I thank my predecessor, Dr Peter Groves, who was the Director of the PRF for over 16 years, including service as the interim Director when the job called for someone to uphold the position. I would also like to thank the Dean of Science, Professor Marcel Dinger, the Head of SSVS, Professor Jacqui Norris, and the Head of SOLES, Professor Jennifer Potts for their support of the PRF.

On the 1st of June, 2023 the Poultry Research Foundation lost one of its most respected and honoured members with the passing of Emeritus Professor Ernest Frank Annison. Frank was 97 and is survived by his wife of 73 years, Dorine, by his sons Geoffrey and John, daughter Jennifer and by his grandchildren. Professor Annison was one of the most influential animal scientists in the world over the past 70 decades. I owe my career to his supervision and mentoring. The world is much poorer without him.

We also lost another colleague during 2023, Geof Runge who dedicated his life to the development and betterment of the Australian poultry industry. Condolences to his family.

The year 2023 was a momentous year for the PRF with several areas of focus:

1). **Building team capacity:** we welcomed a new lecturer, Dr Jose Quinteros to fill the former Director, Dr Peter Groves' position in poultry health, and three new students, Jojo Wang, Carrie Xue (upgrading her master's degree to PhD) and Ruby Putt, to commence their PhD programs.

2). **Increasing research income:** the AgriFutures' "Nutrition, Gut Health and Environment" program was signed off by all the partners involved in the Consortium and thanks to Associate Professor Sonia Liu, Dr Mehdi Toghyani and Dr Shemil Macelline, the PRF secured three major projects from the Consortium. In addition, several new projects, including an ARC Linkage Project by Dr Liu, were submitted for funding by the team. The details of our research activities are covered under "Foundation Research in Review" of the Annual Report.

3). **Enhancing communication and engagement:** the PRF put a concerted effort into promoting our scientific outcomes and scholarly service to the world. The PRF undertook three major initiatives in organising a national Poultry Industry Think Tank meeting, launching Poultry@Sydney newsletter, and establishing social media channels.

The poultry industry is an integral part of national food security and it plays an essential role in Australia's goal to achieve its 2050 net zero target. However, the industry's growth and innovation will depend on a dynamic education system supplying the next generation of leaders in research and industry development. To identify these needs, the PRF, supported by AgriFutures Australia and BEC Feed Solutions, organised a poultry industry Think Tank meeting to discuss the key challenges that will shape the poultry industry during the next 20 years. It was well attended by leaders of industry and academia in Australia. The three key challenges identified are: People, Collaboration, and Communication. The University of Sydney as a leading institute in the world with a long and significant track record of working with the poultry industry can help address all three challenges going forward. However, we need to reach out to all stakeholders and tell them what we are doing in the first place. Thus, 2023 saw our website revamped with relevant information and a sustainable approach to keep it up to date in the future. Then we launched a PRF newsletter called Poultry@Sydney in June. It releases 4-6 issues per year and each issue typically features 2-5 articles focussing on telling our story, showcasing our research, highlighting the contribution of our students and staff, and establishing ongoing links with industry and PRF alumni. Furthermore, we established accounts for LinkedIn, Instagram and Facebook where we regularly share some of our stories. Taking LinkedIn for instance, the click rate on our articles is somewhere between 3000-5000.

4) **Australian Poultry Science Symposium:** the annual Australian Poultry Science Symposium, a flagship event showcasing our scientific outcomes and industry engagement was a success, with over 250 delegates attending. APSS 2023 was held at the Sheraton Hyde Park Hotel in Sydney. We invited 8 speakers from across the globe to present topics ranging from sustainability, early life nutrition, mineral nutrition, precision-feeding, food recycling, long-life laying hens to lipid metabolism. The program was well-received and the conference was a resounding success. The details of the conference were presented in PRF Annual Report 2023 but I would

like to take the opportunity to highlight the fact that APSS is run each year and organised by our PRF staff without relying on an external event planner. Organising a conference of this scale and frequency requires a great deal of effort and know-how. We do this because it is important for the University of Sydney's external engagement in an area critical for Australia's national security, i.e., food security. Again, I would also like to extend my thanks to all the speakers, all the contributors of the papers, the Organising Committee, the reviewers, the PRF staff who carried out the logistics of putting on the conference, and the sponsors.

It is worth a brief mention that APSS 2024 was held between 19-22 February 2024 at the Sheraton Hyde Park Hotel in Sydney. The Organising Committee agreed to change the kick-off day from Sunday to Monday to cater to people who travel from various cities and towns in Australia because of better flight choices and cheaper airfares during weekdays compared with weekends. The conference broke records for attendance, submissions, and potential financial benefit.

About APSS, my final comment is about APSS 2025. Due to the rising cost of running the conference at a 5-star inner city hotel, we are scoping out the possibility of moving the conference to campus in 2025. Preparations including pre-booking of the venue (the Abercrombie Business School, 1.3km to Redfern Train Station), looking at catering options, and checking out accommodation ranges are underway. The economic viability and ongoing sustainability of APSS are important for the University of Sydney and the PRF.

5). Infrastructure planning: our facilities were last updated in 1997. They are ageing rapidly and in need of renewal. Several meetings were organised, both by the Faculty and PRF, over the year to scope out the needs for the poultry research and teaching facilities. One idea we put forward to the university was to build a multipurpose facility with all the bells and whistles in terms of sustainability, technology and public access (via virtual means). The planning has progressed to submitting an ARC LIEF (Linkage Infrastructure, Equipment and Facilities) grant application in 2024. Industry engagement has commenced, and ideas and contributions are welcome. This is a rare opportunity for all of us to work together to build a state-of-the-art poultry research and education facility. Such a facility is required in Australia to cater for the needs of ethical research demanded by the public and education programs necessitated by the role of AI in future workforce training.

6). Transition: negotiation for transitioning the PRF into a Level 2 Research Centre commenced in October 2023. The key reasons for transition is related to the incompatibility of the legal definition of a "Foundation" with the activities of the PRF.

Although the role and activity of the PRF have remained relatively unchanged since its inception in 1958: "to provide an interface between The University of Sydney and the Australian poultry and allied industries", the policy framework and the compliance requirements for "Foundations" have evolved over the years. For instance, the legal view of a Foundation under the Commonwealth Charities Act 2013 is that "a Foundation's activities are that of funding raising and charitable activities". This creates a great deal of work by the university's central admin team to reconcile our research activities through the lens of the Act. The Council discussed this very issue at an Extraordinary Meeting held in September 2022 and subsequently the former Director, Associate Professor Peter Groves submitted two proposals to the University, including one in November 2022, to transition the PRF to a Level 1 Research Centre. There was no action by the university despite Dr Groves' best efforts to get the transition completed before he stepped down as Director at the end of 2022.

In consultation with our staff, students and affiliates we held a formal meeting of the PRF Council to specifically discuss the transition on the 8th of November, 2023. I submitted a formal application in February 2024 to transition the PRF into a Level 2 Centre with proper governance and an external advisory body retaining the powers and activities of the current PRF. The Dean of Science, Professor Marcel Dinger has obtained approval to keep the name PRF for a period of five years and undergo review at that time in accordance with the Centres Policy. This timeline allows for a smooth transition while maintaining the brand and history of the PRF. I will expand on the transition business case at the meeting on the 22nd of May.

Final Remarks: The PRF is a small research entity within the University of Sydney but its importance for Australia's food security is not lost on the university management. The Year 2023 was filled with quiet excitement as we promoted the research and industry engagement outcomes to the wider world, increased the capacity of our team, and planned for infrastructure updates shortly. We also laid a solid foundation for a new PRF that would have a more streamlined governance structure and an increase in research capacity.

May 2024

Poultry Research Foundation Members

GOVERNORS	EXECUTIVE MEMBERS	ASSOCIATE MEMBERS
Baiada	Feedworks	ADM
DSM Nutritional Products	Novus Nutrition	Alltech Lienert Australia
Inghams		BEC Feed Solutions
		Browning Consulting Group
		Elanco Animal Health
		Evonik
		International Animal Health
		Kemin (Aust)
		Lallemand
		Phibro
		Premium Agriproducts
		Ruth Consolidated Industries
		Weston Animal Nutrition

HONORARY GOVERNORS
Emeritus Professor E. Frank Annison (Late)
Dr. Balkar S. Bains
Dr. Derick Balnave
Prof. Wayne Bryden
Dr. Ron MacAlpine
Ms. Judy O’Keeffe
Dr. Linda Browning
Dr. Aaron Cowieson
Dr. Tom Scott
Dr. Peter Groves

INVITEES

The Heads of Schools, Veterinary Science and Life and Environmental Sciences

The President, World's Poultry Science Association (Australian Branch)

The Program Manager, Agrifutures Chicken Meat Program

The Program Manager, Australian Eggs

A Representative, Poultry Hub Australia

Poultry Research Foundation Council

PRESIDENT	Ms. Lisa Jamieson
DEPUTY PRESIDENT	Mr. Richard Browning
DIRECTOR	Professor Mingan Choct
GENERAL MEMBERS	UNIVERSITY COUNCIL MEMBERS
Baiada Poultry Pty. Limited Ms. Katherine Balding	Dean – Faculty of Science Professor Marcel Dinger
BEC Food Solutions Dr. David Isaac	Division of Alumni & Development – University Foundations Ms. Alexia Nicholson
	Head of School -Sydney School of Veterinary Science Prof. Jacqueline Norris
Feedworks Dr. Stuart Wilkinson	Head of School – School of Life and Environmental Sciences Prof. Jennifer Potts
Inghams Enterprises Pty Ltd Mr. Ryan Hopcroft	
Kemin Mr. Stuart Court	
Novus Nutrition Ms. Sally Pines	
Weston Animal Nutrition Ms. Moreen Ali	

Poultry Research Foundation Staff and Students

Director

Professor Mingan Choct *B.Sci, M.Sci, PhD, GAICD*

Academic Staff

Associate Professor Peter Groves *BVSc, MANZCVS(Epidemiology), PhD (Sydney) - Casual*

Associate Professor Sonia Yun Liu *BEng, MFoodSc (Queensland), PhD (Sydney)*

Dr. Wendy Muir *BScAgr, PhD (Sydney), GradDipEd (UNE), GradCertEducStud (Higher Education)*

Dr. Jose A. Quinteros *DVM (Chile), MVSc (Unimelb), PhD (Unimelb)*

Honorary Research Fellows

Adj. Assoc. Prof. Peter Selle *BVSc, PhD (Sydney) DVSc*

Adj. Dr. Jeff Downing *WDA (Wagga Agr. Col.), BSc, PhD (Macquarie), GradCertEducStud(Higher Education)*

Postdoctoral Research Associates

Dr. Yeasmin Akter *BSc (Bangladesh), MSc (Bangladesh), PhD (Malaysia)*

Dr. Mehdi Toghyani *BSc (Iran), MSc (Iran), PhD (UNE)*

Dr. Shemil Macelline *BASc (Sri Lanka), MSc (South Korea), PhD (Usyd)*

Dr Hubert Brouwers *BAgr (Biology, Cell)(Wageningen, The Netherlands), PhD (Path & Micro) (Prince Edward Isl., Canada),*

Administration Staff

Mr. Benjamin Geist

Mrs. Jo-Ann Geist

Mrs. Farzeen Ali

Project Management Staff

Mrs. Joy Gill

Project Support Staff

Mr. Duwei (Wade) Chen

Mrs. Kylie Warr

Mr. Jordon Fletcher

Postgraduate & Masters Students

Mr. Ryan Hopcroft - *Manipulating residual yolk usage.*

Ms. Christine Clark - *Are feed ingredients added to layer chicken diets aiding or inhibiting live Salmonella Typhimurium vaccinations at farm level?*

Ms. Yuanshuo Gao - *Analytical Epidemiology of Spotty Liver Disease*

Ms. Claudia Ciarelli - *Conditions contributing to the incidence of floor eggs in commercial cage-free egg production in Australia (visiting from University of Padova, Italy, through a 5 month Erasmus Plus Mobility Exchange programme)*

Ms Ruby Putt – *Identifying and managing conditions to minimize floor eggs in cage-free systems.*

Ms Mengzhu (Jojo) Wang - *The Impact of Macronutrients and Their Digestive Dynamics on Growth Performance in Broiler Chickens*

Mr. Milan Kandel - *Optimization of Canola Product for Sustainable Broiler Production*

Ms. Carria Xie – *Innovative diet formulations for modern-genotype broiler chickens*

Dr. Milan Khaqan Shah – *Association between broiler diets and shedding of bacteria with antimicrobial resistance.*

Honours/DVM Students (conducting thesis projects under Poultry Research Foundation supervision)

Hylie Hoi Yan Cheung *BSc/BAS (AVBS) and University Medallist 2023 - Investigating the risk factors for floor eggs within Australia's cage-free layer production systems? Supervisor: Wendy Muir*

Indiana Devine *BSc/BAS (AVBS) and University Medallist 2023 - The effect of activated vitamin D3 on egg and eggshell quality, and performance in older brown laying hens.. Supervisor: Wendy Muir*

Shayla Nguyen *BSc/BAS (AVBS) Reduction of Crude Protein levels in Wheat and Sorghum-based Chicken-*

Staff Memberships and Affiliations

Professor Mingan Choct:

Member: World's Poultry Science Association (WPSA)
Member: US Poultry Association
Editor-in-Chief: Animal Nutrition
Chair: Australian Poultry Science Symposium Organising Committee

Associate Professor Peter Groves:

Member: Australasian Veterinary Poultry Association (AVPA)
Member: Commercial Poultry Veterinarians (an SIG of AVA)
Member: World's Poultry Science Association
Member: American Association of Avian Pathologists

Associate Professor Sonia Yun Liu:

Member: Worlds Poultry Science Association (WPSA)
Member: Sydney Institute of Agriculture
Member: Charles Perkins Centre
Member: China Studies Centre
Member: Sydney South East Asia Centre
Member: Poultry Science Association (PSA)
Member and Editor: Australia Poultry Science Symposium Organising Committee

Dr. Wendy Muir:

Member: Australian Poultry Science Symposium Organising Committee
Member: Worlds Poultry Science Association (WPSA)
Associate Editor: Animal Production Science
Member: Sydney Institute of Agriculture
Member: *Animal Ethics Committee 1, The University of Sydney*

Dr. Jose A. Quinteros:

Member: *Australasian Veterinary Poultry Association.*
Member: *Research Advisory Committee, SSVS.*
Member: *Animal Ethics Committee 2, The University of Sydney.*

Adj. Assoc. Prof. Peter Selle:

Member: Australian Poultry Science Symposium Organising Committee
Member: World Poultry Science Association
Associate Editor: Poultry Science

Dr. Mehdi Toghyani:

Member: Worlds Poultry Science Association (WPSA)
Member: Poultry Science Association (PSA)

Dr. Shemil Macelline:

Member: Worlds Poultry Science Association (WPSA)

Conference Attendance, Presentations, Acknowledgements and Awards

Conference Attendance and Presentations by PRF Staff and Students

34th Annual Australian Poultry Science Symposium, Sydney, Australia, February 2023

Invited Speaker: Wendy Muir

Presentations by: Shemil Macelline, Peter Selle, Peter Chrystal, Shiva Greenhalgh, Sonia Yun Liu and Mehdi Toghiani.

Attended by: Peter Groves, Yuanshuo Gao, Christine Clark, Ryan Hopcroft, Yeasmin Akter

AVPA scientific meeting, Sydney, February 2023

Presentation by: Associate Professor Peter Groves

Western Poultry Disease Conference, Sacramento USA, March 2023

Presentation by: Associate Professor Peter Groves

Salmonella control – Kemin Technical Meeting August 2023

Contributor: Associate Professor Peter Groves

World Veterinary Poultry Association scientific meeting Verona, Italy September 2023

Presentation and Poster: Associate Professor Peter Groves

Egg Net, Australian Eggs Ltd 2023

Contributor: Associate Professor Peter Groves

Advancia Animal Nutrition Conference, Bologna, Italy, June 2023

Presentation by: Associate Professor Sonia Yun Liu

European Symposium on Poultry Nutrition, Rimini, Italy, June 2023

Presentations by: Associate Professor Sonia Yun Liu and Dr. Shemil Macelline

Layer Feed Quality Conference, Jakarta, Indonesia, October 2023

Presentation by: Associate Professor Sonia Yun Liu

Recent Advances in Animal Nutrition (UNE) Surfers Paradise, QLD July 2023

Presentation by: Adjunct Associate Professor Peter Selle

Australasian Veterinary Poultry Associate Scientific Meeting, Queenstown, New Zealand, Oct 2023

Presentation by: Dr. Jose A. Quinteros

Ideas Exchange (Poultry Hub Australia), Adelaide, Australia Oct 2023

Presentation by: Dr. Jose A. Quinteros

Sydney School of Veterinary Science Research Conference, Camden Campus NSW Nov 2023

Presentation by: Dr. Jose A. Quinteros

Awards

Shemil Macelline was awarded the World's Poultry Science Association Travel Grant for young WPSA members and students.

Acknowledgments

Thank you to all of our research partners who funded research projects, student scholarships and post-doctoral fellowships throughout 2023:

Agrifutures

ARC

Australian Eggs

Nutreco

Ridley Agriproducts

Australian Poultry Science Symposium 2023

The 34th Annual Australian Poultry Science Symposium was held from Monday 6th - Wednesday 8th Feb, 2023. After 2 years of virtual symposia, it was fantastic to return to a face-to-face meeting this year. The event was held at Sheraton Grand – Sydney Hyde Park, the same hotel that had hosted us for the 4 years prior to the COVID shut-downs. The conference was extremely well attended, especially considering it was our first in-person event in 3 years, with 274 delegates taking part.

The Poultry Research Foundation in conjunction with the World’s Poultry Science Association (Australian Branch) organised this combined meeting with an overarching theme of "Global Volatility and Poultry Industry Sustainability". Covering the Major themes of “Nutrition - Improving Fat Digestion”, “Layer Nutrition and Extending Layer Lifespan” and “Sustainable Health & Welfare”, as well as the Hot Topic of “Feeding Poultry Recycled Human Food Waste”.

We featured 8 invited speakers from UK, USA, Canada, New Zealand, South Africa & Australia. There was a total of 74 other submitted papers presented, including 39 oral presentations and 35 posters. The program ran over 2.5 days, with AVPA also returning this year and following on from our event on Wednesday afternoon. As a part of APSS, the WPSA Australian Poultry Award is presented at the Symposium Dinner on Tuesday night. 2021 saw the Australian Poultry Award was shared by 2 nominees: Dr Margaret Sexton and Dr Rod Jenner. The event also features Mingan Choct award for the best Student oral presentation which was taken out by Ms Mila Meijer from the University of Queensland and the best poster presentation was won by Miss Tonghe Sun from University of Queensland.

We would like to thank our organising committee for their contributions in proposing and inviting our invited speakers, as well as helping to put together the themes for the conference. Also, we again would like to say a very big thank-you to Professor Juliet Roberts and Dr Sonia Liu, for their efforts in helping to coordinate the review process and editing our papers and final proceedings. And finally, to all of our commercial and industry partners who continue to generously support our conference year after year. Without the support of our sponsors, APSS simply wouldn’t be the same. Special recognition for sponsorship this year included: 25 years - Elanco Australasia Pty Ltd; 20 years - Kemin (Aust.) Pty Ltd; 15 years – Jefo; 5 consecutive years – Lallemand Animal Nutrition.

INVITED SPEAKERS:

- Adj. Prof. Aaron Cowieson – DSM Nutrition, UK
- Dr. Stuart Wilkinson – Feedworks, AUS
- Rick Kleyn – Spesfeed Consulting, RSA
- Dr. Wendy Muir – University of Sydney, AUS
- Prof. Martin Zuidhof – University of Alberta, CAN
- Dr. Peter Chrystal – Complete Feed Solutions, NZL
- Prof. Robert Swick – University of New England, AUS
- Prof. Tom Porter – University of Maryland, USA

Sponsorship of the APSS 2023 was kindly supported by:		
Invited Speaker Sponsors: Poultry Research Foundation	Diamond Sponsor: DSM Nutritional Products Australia	Platinum Sponsor: Kemin (Aust.) Pty Ltd
Gold Sponsors: Jefo Australia Feedworks Elanco Australasia Pty Ltd Novus Nutrition Trouw Nutrition Thailand) Limited Perstorp Waspik Bv	Silver Sponsors: Australian Eggs Agrifutures Australia EW Nutrition Australia ADM Australia Nutriment Health BEC Feed Solutions Adisseo Asia Pacific Pte Ltd Ab Vista (Asia) Pte Ltd AusPac Ingredients	Bronze Sponsors: VTR Biotech Ruth Consolidated Industries Alltech Lienert Australia Lallemand Animal Nutrition Evonik Australia Pty Ltd Poultry Hub Australia BASF Australia Pty Ltd
Item/Events Sponsors: Australian Eggs; Feedworks; Evonik Australia Pty Ltd; Kemin (Aust.) Pty Ltd; DSM Nutritional Products Australia		

Foundation Research in Review

The Poultry Research Unit has been very active in both the broiler and layer research fields for over 60 years here at Camden. Some major contributions to research and industry during this time have been in the areas of:

- Amino Acid Digestibility Studies (RIRDC)
- Modulation of lean tissue deposition by dietary fatty acids (RIRDC, ARC)
- Development of a non-invasive test for stress in laying hens (RIRDC)
- Mucosal immunity in chickens (RIRDC)
- Nutritional and toxicological evaluation of transgenic plants (CSIRO)
- Application of feed enzymes (Industry)
- Mycotoxins in poultry feeds (ADAB)
- Egg Shell Quality (RIRDC)
- Amino acid balance for heat stressed broilers (Industry)
- Nutritional requirements of recently imported layer stock (RIRDC)
- Improving leg strength in meat chickens (RIRDC)
- Control of *Salmonella* in layers using vaccination
- Understanding low protein diets in broilers (AgriFutures, Industry)
- Evaluating ILT vaccination in broiler chickens (AgriFutures)
- Extending the productive life of layer chickens (Poultry CRC, AusEgg)
- Epidemiology of Spotty Liver disease (AusEgg)
- Salmonella* Enteritidis (AusEgg, PHA)
- Extending layer hen lifespan (Aus Eggs)*

We will continue to serve the needs of research, industry and teaching over years to come.

Current Research Projects

Associate Professor Peter Groves:

- Completed phase three Spotty Liver Disease epidemiological survey – scratch area farms.
- New candidate product for coccidiosis control
- Lectures for ABVS3005 Biosecurity and Current Field Issues, practical classes and completed tutorials for third year DVM VETS6312

Associate Professor Sonia Liu:

- Ongoing research projects include:
 - AgriFutures Project 012265 - The impact of climate on sorghum utilisation in poultry diet.* The primary goal of this project is to identify variations in nutritional and anti-nutritional compositions in dryland and irrigated sorghums in order to provide solutions to normalise inconsistency in broiler performance when drought-stressed sorghums are offered. This project involves Poultry Research Foundation, University of Queensland and Macquarie University. The third feeding study is on its way and potential to future collaborate with the UQ sorghum breeding team is under discussion.

AgriFutures Chicken-meat Consortium. The consortium project will kick off in 2023, this brings \$2.2 M cash income to The University of Sydney, the USYD team will lead the program looking into practical reduced crude protein diets with focus on amino acid requirements, alternative protein-rich ingredients, macro nutrient interaction, gut health and environmental impact. 2 feeding studies have been conducted, and three PhD students have been recruited for this project.

ARC Linkage project –Sustaining chicken-meat production with alternative protein sources. This project collaborates with one major PRF industry member and Charles Perkins Centre to investigate digestive dynamics in reduced CP diets. One pilot study has been completed and two manuscripts are under preparation.

Collectively, the nutrition team also attracted ~\$150K contract research income in 2023.

Dr. Wendy Muir:

Australian Eggs funded project: *Managing pullets for extended layer life, improved productivity and shell quality* 31RS1-2US, Chief Investigator -Dr Muir which commenced in January 2021 with the placement of day old pullets into the rearing phase finished in December 2022 when the hens were 100 weeks old.

During the first half of 2023 the final laboratory assays and statistical analysis were completed. The final report was then prepared and submitted to Australian Eggs in May. An article titled “Do physiological characteristics established during rearing continue into the laying phase?” Based on some of the findings during the project was published in the Australian Eggs industry publication, Eggstra! in December 2023.

Australian Eggs also funded a research project to Investigate floor eggs in caged free egg production systems (Project 1G015) with Wendy as Chief Investigator. A comprehensive review of the literature on floor eggs was completed in association with AVBS honours student Hyolie Cheung. Ms Claudia Ciarelli, visiting PhD student from University of Padova, Italy, explored data relating to floor eggs gathered within the Australian Eggs funded project outlined under Dr Groves’ research, on Spotty liver disease (Project 1BS004). A manuscript on the findings was under preparation for submission to Journal of Applied Poultry Research. On receipt of Human ethics approval an initial scoping survey, involved the interview of Australian cage free egg farmers was completed to understand the age of their current flocks, level of floor eggs, impact of floor eggs on their production costs, and interest in being involved in a more in-depth study.

Dr Muir also coordinated the year-long honours research program in the undergraduate BSC/BAS (Animal and Veterinary Bioscience AVBS) programme which involved 65 students completing individual research projects in 2023. This is their first experience and initial training in research.

Adjunct Associate Professor Peter Selle:

Peter Selle’s core interest has been to identify pathways to diminish the Australian chicken-meat industry’s dependence on expensive, imported soybean meal. Obviously, reduced-crude protein (CP) diets have the potential to achieve this objective; however, broiler chickens are better able to accommodate dietary CP reductions in maize- or sorghum-based diets than wheat-based diets. Peter was invited to speak to the topic of “The challenge to reduce crude protein contents of wheat-based broiler diets” at the Recent Advances in Animal Nutrition conference held by UNE at Surfer’s Paradise in July 2023. More specifically, Peter has focused on the role of glutamine (as distinct from glutamate) in reduced-CP diets, which appears to be beneficial. There is the possibility that rapid digestion rates of wheat starch are moderating insulin responses in broilers offered reduced-CP diets. Finally, the possible impact of reduced-CP diets on protein turnover certainly merits investigation. Fortunately, Peter is lucky enough to be part of a great team of colleagues, which is more than encouraging.

Dr Jose Quinteros:

During the last third of 2023, after joining the University of Sydney as a Lecturer in Poultry Health (Sept-Dec), Jose Quinteros has secured two research grants: the SSVS startup grant (\$30,000) and a Bequest grant (\$10,000). The startup grant funds’ objective was to support Jose’s initial research initiatives and assist during his reconnection with the Australian poultry industry and poultry veterinarians nationally and internationally through attending conferences and symposiums. On the other hand, the bequest grant was awarded to develop a new, fast, reliable, economical and farm-oriented diagnostic method to detect *E. cecorum* in broiler chickens affected by paralysis and femoral head necrosis. During the last couple of years, *E. cecorum* has become one of the most prevalent diseases in the Australian broiler sector. As it is an emerging disease in the country, there is a lack of knowledge about the pathogenesis of the diseases and their prevention and treatments.

After being contacted by Australian egg-producing companies, I was advised that IB still poses a major problem, causing upper respiratory problems in layers (commonly leading to *Mycoplasma* infections, a secondary pathogen) and egg production and quality drops. As such, part of the SSVS startup funds will be used to start an IBV detection and diagnostic lab and an epidemiological surveillance program. This lab’s objective will be to support the poultry industry and build an IBV isolate library for future use in research projects.

Dr Mehdi Toghiani:

2022-2025; Optimizing energy and amino acids in broiler diets. AgriFuture, Chicken Meat Program

Mehdi is leading an AgriFutures Chicken-meat project.

AgriFutures PRO-015821 Optimizing energy and amino acids levels in meat chickens’ diet

This project is designed to determine optimal dietary energy levels relative to amino acids density under Australian conditions in order to improve production efficiency and minimize nutrients excretion. The project will gain advanced knowledge on the interactive relationship between dietary energy and amino acids for the two major broiler chicken strains used in Australia. The outcome will provide Australian chicken-meat industry and poultry nutritionists the opportunity to formulate more cost-effective diets and to optimize production efficiency in response to ingredients availability and pricing, plus move towards improving carbon footprint of the industry.

The specific objectives of the project are:

- 1: To determine the optimal energy and amino acids densities in broiler diets to maximize production efficiency and minimize nutrient excretion
- 2: To determine the impact of grain (wheat, sorghum and barley) and oil sources (vegetable oil, beef or poultry tallow) on optimal energy and amino acids densities in broiler diets
- 3: To compare growth response of Ross 308 and Cobb 500 broilers to changed energy and amino acid densities in diets based on different grains
- 4: To develop equations to predict key performance parameters at certain dietary energy and amino acid levels, by subjecting the data sets generated in this project to advanced statistical and mathematical models.

All the feeding studies for this project have been completed. In consultation with a statistician and modeling expert, the data generated in this project will be used to develop mathematical equation to predict broiler performance (growth rate and feed efficiency) in response to dietary nutrient density.

2022-2023: Effects of IntelliOpt trace minerals on egg production and quality parameters of Hy-Line layer hens post-peak of production NUTRECO Netherlands

Mehdi had completed a project funded by Trouw Nutrition as principle investigator, to look at the impact of trace mineral sources on laying performance and egg quality parameters of Hy-line layer hens post-peak production. Historically, trace minerals such as zinc and manganese have been supplied in the forms of inorganic salts (sulphate) into animal feed to meet the requirements and prevent deficiency. IntelliOpt (IntelliBond + Optimin) minerals are a new class of minerals designed to increase the amount of biologically active mineral delivered to the entire length of the intestine driving increased mineral absorption and intestinal health. They also can increase other nutrient stability (like vitamins, fats, enzymes, etc.) in feed and premixes, and mineral homogeneity, as well. This study was designed to investigate and compare the IntelliBond/Optimin blend with sulphates sources on egg production, egg quality and trace mineral retention in layer hens post peak of production to 100 weeks of age.

2022-2023: The effect of fine particles in finished feed on growth performance and carcass characteristics of broiler chickens

This project was funded by Ridley Agri Product and designed to investigate the effects of pellet durability and percentage of fine particles in finished feed on growth performance, body weight uniformity and carcass yield of broiler chickens reared in commercial like deep-litter conditions.

Dr. Shemil Macelline:

In March 2023, Shemil Macelline achieved a significant milestone by completing his PhD degree. Following his graduation, he was offered a position as a Research Assistant at the Poultry Research Foundation. Throughout 2023, Shemil engaged in diverse research projects within the agriculture consortium and other funded agricultural studies.

Shemil's research primarily revolves around the nutritional requirements and digestive dynamics of amino acids in poultry. A central focus of his work is the development of reduced-crude protein broiler diets, with the overarching goal of supporting sustainable chicken meat production. In the context of Australia, Shemil is striving to replace soybean meal in broiler diets with locally available alternative protein sources (i.e., canola meal), a crucial step in ensuring the sustainability of chicken meat production in Australia. His endeavours to address this challenge are conducted through his research at the Poultry Research Foundation. Furthermore, Shemil's research interests extend to amino acid metabolism, where he seeks to comprehend postprandial amino acid metabolism in broiler chickens. This involves investigating amino acid catabolism and anabolism in various tissues and cells, such as enterocytes, liver, and skeletal muscle, as well as exploring post-enteral amino acid antagonisms, deamination, and uric acid synthesis. Also, Shemil believes that correct blend of protein-bound and non-bound (free/synthetic/crystallize) amino acids is required to optimise broiler performance where his published research works indicative this rationale up to some extent.

During 2023, Shemil has published three research articles as main author and co-authored five research publications. Moreover, Shemil has participated two international conferences in 2023 which included Australian Poultry Science Symposium and European Symposium of Poultry Nutrition (Rimini, Italy). Shemil also awarded the World's Poultry Science Association Travel Grant for young WPSA members and students.

Research Collaboration and Industry Services

Dr Wendy Muir is collaborating with Associate Professor Angela Trocino from the University of Padova, Italy on Cage free egg production. PhD student Claudia Ciarelli visited Camden campus for 5 months in 2023 within the Erasmus Mobility Plus Exchange programme.

Dr Wendy Muir has also been involved with Outreach activities with students from Loretto Girls school Normanhurst in recent years, again hosting a visit to the University of Sydney Plant Breeding Institute (PBI) Cobbitty, and the Poultry Research Unit, during 2023. This is particularly valuable in encouraging female school students into Agricultural industries. Dr. Muir also hosted a poultry industry focused stand at the Royal Agricultural Society “AgVision” day in June 2023, this day is designed for students studying agriculture at school with an interest in pursuing a career in Agriculture.

Associate Professor Sonia Liu’s team is also working with Professor Ian Godwin with the University of Queensland on sorghum and are also participants with the AgriFutures Consortium, Professor Ruth Zadoks - University of Sydney, Professor Dana Stanley – Central Queensland University, Professor Eugeni Roura – University of Queensland, Dr. Mark Dunlop – Department of Agriculture and Fisheries, Queensland and Dr. Tim Wester – Massey University, New Zealand.

Communications

Publications from PRF Staff & Students for 2023:

- Umagiliya MD, Bandara N, Jayasena DD, **Macelline SP**, Nawarathne SR, Manjula P (2022) Comparison of meat quality traits in muscovy ducks reared under two different management systems. *Animal Industry and Technology* **9**, 65-77.
- Selle PH, Macelline SP, Chrystal PV, Liu SY** (2023) The contribution of phytate-degrading enzymes to chicken-meat production. *Animals* **13**, 603.
- Selle PH, Macelline SP, Chrystal PV, Liu SY** (2023) The challenge to reduce crude protein contents of wheat-based broiler diets. *Animal Production Science* doi.org/10.1071/AN22419.
- Anene DO, **Akter Y, Groves PJ**, Horadagoda N, **Liu SY**, Moss A, Hutchinson C, O'Shea CJ (2023) Association of feed efficiency with organ characteristics and fatty liver haemorrhagic syndrome in laying hens. *Scientific Reports* **13**, 5872.
- Vithana HA, **Macelline SP**, Nawarathne SR, Jaysena DD, Yu M, Seo E, Amarsinghe M, Nambapana MN, Cho JH, Heo JM (2023) Poultry by-product meal as a potential protein source in broiler diets with exogenous protease supplementation. *Korean Journal of Poultry Science* **50**, 31-39.
- Selle PH, Macelline SP, Chrystal PV, Liu SY** (2023) A reappraisal of amino acids in broiler chicken nutrition. *World's Poultry Science Journal* **79**, 429-447.
- Macelline SP, Chrystal PV, Toghiani M, Selle PH, Liu SY** (2023) Dietary crude protein reductions in wheat-based diets with two energy densities compromised performance of broiler chickens from 15 to 36 days post-hatch. *Poultry Science* **102**, 102932.
- Macelline SP, Chrystal PV, Inanan C, Toghiani M, Selle PH, Liu SY** (2023) The influence of dietary crude protein concentrations, grain types and arginine:lysine ratios on the performance of broiler chickens. *Animal Nutrition* **14**, 259-268.
- Kidd MT, Tilman PB, Nuntawadee NS, **Chrystal PV** (2023) Precision feeding for optimizing poultry production. *CABI Reviews* (2023) **18**, 1.
- Macelline SP, Kidd MT, Chrystal PV, Toghiani M, Selle PH, Liu SY** (2023) The influence of non-bound amino acid inclusions and starch-protein digestive dynamics on growth performance of broiler chickens offered wheat-based diets with two crude protein concentrations. *Animal Nutrition* **15**, 399-408.
- Courtice, JM, Ahmad, TB, Wei, C, Mahdi, LK, Palmieri, C, Juma, S, **Groves, PJ**, Hancock, K, Korolik, V, Petrovsky, N and Kotiw, M. (2023) Detection, characterization, and persistence of *Campylobacter hepaticus*, the cause of spotty liver disease in layer hens. *Poultry Science* 102:102462. <https://doi.org/10.1016/j.psj.2022.102462>
- Gao, YK, Singh, M, Muir, WI, Kotiw, M and Groves, PJ.** (2023). Scratch area as an epidemiological risk factor for Spotty Liver Disease in cage-free layers in Australia. *Poultry Science*, 102, 102922. Doi.org/10.1016/j.psj.2023.102922
- Gao, YK, Singh, M, Muir, WI, Kotiw, M and Groves, PJ.** (2023) Identification of epidemiological risk factors for spotty liver disease in cage-free layer flocks on houses with fully slatted flooring in Australia. *Poultry Science* 102, 103139. Doi.org/10.1016/j.psj.2023.103139
- Muir WI, Akter Y, Bruerton K, Groves PJ** (2023) *The role of hen body weight and diet nutrient density in an extended laying cycle.* *Poultry Science* **102**: doi:10.1016/j.psj.2022.102338

Bryden, WL., **Muir, WI**, X. Li and Hamilton, RMG (2023). *Nutritional measures to support eggshell quality*. In *Eggcellent Cracking eggshell quality in ageing laying hens*. Ed. van der Klis, J.D. Herbonis.

Muir WI, Akter Y, Bruerton K, **Groves PJ** (2023). *Early lay diet density and hen size – do they affect hen productivity and egg quality in late lay?* *Asian Poultry Magazine*. February 2023, 44-46.

Conference Presentations from PRF Staff & Students for 2023:

Chrystal PV (2023) A review of lipid digestion, metabolism and nutritive value in boiler diets. *Proceedings, Australian Poultry Science Symposium 34*, 83-88.

Khoddami A, Messina V, Tan D, Trethowan R, Thistlethwaite R, Selle PH, Liu SY (2023). Heat stress and the quality of wheat grains. *Proceedings, Australian Poultry Science Symposium 34*, 111-114.

Macelline SP, Chrystal PV, Li J, Bao Y, Toghyani M, Selle PH, Liu SY (2023). β -mannanase generated promising outcomes in broiler chickens offered standard and low energy density diets. *Proceedings, Australian Poultry Science Symposium 34*, 23-27.

Macelline SP, Toghyani M, Dersjant-Li Y, Bello A, Marchal L, Selle PH, Liu SY (2023) A novel consensus bacterial δ -phytase variant improves ileal amino acid digestibility independent of dietary phytate content and the age of broilers. *Proceedings, European Symposium of Poultry Nutrition, Rimini, Italy 23*, 131

Macelline SP, Godwin I, Chrystal PV, Toghyani M, Canter D, Morshed M, Selle PH, Liu SY (2023). The potentiality of using high crude protein sorghums in diets for broiler chickens. *Proceedings, European Symposium of Poultry Nutrition, Rimini, Italy 23*, 227

Muir W.I. (2023) Extending layer hen lifespan: studies in the Australian context. *Proceedings, Australian Poultry Science Symposium 34*, 98-105.

Muir WI, Akter Y, Bruerton, K, Groves, PJ (2023) *Impact of the lighting and feeding regimens during rearing on Hy-Line Brown pullet growth and start of lay*. *Proc. of the Australian Poultry Science Symposium, 34*: 201- 204.

Roura E, Liu SY, Selle PH (2023) A project designed to promote environmentally viable chicken-meat production via enhanced nutrition, gut integrity and housing *Proceedings, Australian Poultry Science Symposium 34*, 19-22.

Selle PH, Macelline SP, Chrystal PV, Liu SY (2023) Amino acid imbalances. *Proceedings, Australian Poultry Science Symposium 34*, 13-16.

Toghyani M, Macelline SP, De Paula Dorigam JC, Chrystal PV, Selle PH, Liu SY (2023). Assessing different ideal amino acid ratios in Isa Brown layer hens' diet during the peak and post peak production. *Proceedings, Australian Poultry Science Symposium 34*, 115.

Financial Report

The financial report for the year ended 31 December 2023 shows an overall surplus of \$55k, down from \$181k in the prior year. Business and Investment Income has increased to \$334k, up from \$324k in the 2022. The Symposium returned to being 'in person' in 2023, following the online event held in 2022. As a result, Symposium income (\$455k) and the associated 'Travel, Conferences and Entertainment' costs (\$404k) increased significantly. Salary costs were up to \$292k due to an increase in casual employment.

The balance sheet includes \$181k of income received in 2023 in respect of the 2024 Symposium, recorded as Deferred Income. Similarly, \$178k of costs incurred in 2023 related to the 2024 event (mostly venue hire) are held as Prepayments.

Overall, the balance sheet maintains a healthy position with accumulated funds totalling \$882k.

James Fern | Senior Finance Manager
The University of Sydney
Faculty of Science, Sydney School of Veterinary Science, Financial Services

The University of Sydney
The Poultry Research Foundation

Income Statement
for the year ended 31st December 2023

	Notes	2023 \$	2022 \$
INCOME			
Business and Investment Income		333,566	323,619
Memberships and Subscriptions		54,000	56,000
Symposium Income	2	454,973	18,600
Other Income		5,455	15,056
Total Income		<u>847,993</u>	<u>413,276</u>
EXPENDITURE			
Salaries	3	291,857	148,650
Consumables		16,052	8,680
Equipment and Repairs & Maintenance		8,521	11,733
Services and Utilities		30,509	18,795
Travel, Conferences and Entertainment	4	404,312	6,405
Commercial Business Expense		39,915	21,833
Other Expenses		2,071	16,079
Total Expenditure		<u>793,237</u>	<u>232,175</u>
SURPLUS / (DEFICIT)		<u>54,757</u>	<u>181,101</u>
Accumulated Funds brought forward 1st January		827,643	646,542
ACCUMULATED FUNDS AS AT 31ST DECEMBER		<u><u>882,399</u></u>	<u><u>827,643</u></u>

I certify that the Income Statement and Balance Sheet of the Foundation have been prepared in accordance with the University's accounting practices and procedures. These Foundation accounts form part of the University of Sydney's financial reports.

Carma du Plooy Digitally signed by Carma du Plooy
Date: 2024.02.19 16:03:00 +11'00'

Carma du Plooy
Finance Director
Faculty of Science, Faculty of Engineering and IT, Sydney School of Architecture, Design and Planning

The University of Sydney
The Poultry Research Foundation

Balance Sheet

as at 31st December 2023

	Notes	2023 \$	2022 \$
ASSETS			
CURRENT ASSETS			
Short Term Investments		884,783	827,729
Prepayments		178,207	251,018
Total Current Assets		<u>1,062,990</u>	<u>1,078,747</u>
TOTAL ASSETS		<u>1,062,990</u>	<u>1,078,747</u>
LIABILITIES			
CURRENT LIABILITIES			
Deferred Income		180,591	251,105
Total Current Liabilities		<u>180,591</u>	<u>251,105</u>
TOTAL LIABILITIES		<u>180,591</u>	<u>251,105</u>
NET ASSETS		<u>882,399</u>	<u>827,643</u>
EQUITY			
Accumulated Funds		882,399	827,643
TOTAL EQUITY		<u>882,399</u>	<u>827,643</u>

Notes to the Financial Statements

1. Accounting Policies

- The financial statements have been prepared on an accrual accounting basis.
- All fixed assets are expensed in the year of purchase.
- Employee entitlements for Long Service Leave are held centrally in the University's accounts.
- The University (including the Foundations) is exempt from Income tax.

2. Symposium Income

	2023	2022
Return to in person event in 2023; online event held in prior year	454,973	18,600

3. Salaries

	2023	2022
Increase in casual staffing	291,857	148,650

4. Travel, Conferences and Entertainment

	2023	2022
Event hire and catering for 2023 Symposium	404,312	6,405