



Protein Futures

Scaling up for success



The global population will reach 9.7 billion by 2050, fuelling the demand for protein. CSIRO's Future Protein mission is working on innovative solutions to nourish this growing population and creating new companies to introduce sustainable new products to consumers.

As a major producer and exporter of protein, Australian industry is well-placed to enhance existing animal and plant protein production alongside developing novel protein production systems and products that meet the requirements and preferences of changing consumers.

In the global race to fulfil protein demand, Australia holds a competitive advantage across plant, animal and novel protein technologies as long as we continue to invest urgently in the future.

The symposium will provide an open forum for leading protein and food innovators to discuss challenges and opportunities. Together, we'll consider the opportunities and challenges in scaling up protein production for the future, including looking at current and cutting-edge food science and technology.

Day 1 sessions

Scaling the future of protein

Chair: Crispin Howitt

Future proteins on the horizon

Chair: Thomas Vanhercke

Revolutionising Australia's protein landscape

Chair: Blair Keating

From startup to impact – the journey of a protein idea

Chair: Dean Alle

Day 2 sessions

Sustainable growth of protein production

Chair: Jean-Philippe Ral

Nutrition for the future: a sustainable protein ecosystem

Chair: Jean-Philippe Ral

Circular economy – closing the protein loop

Chair: Susan Hani

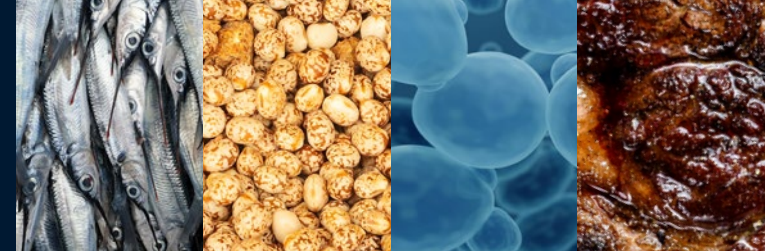
DAY ONE: Tuesday 28 May 2024

TIME	TOPIC	SPEAKER
8.30am	Registration	
	Welcome/opening	Dr Doug Hilton , Chief Executive, CSIRO
	Session 1	Chair: Crispin Howitt
	Scaling the future of protein	Katherine Wynn , Lead Economist, CSIRO Futures, CSIRO Rohan Nelson , Director, Food System Horizons, CSIRO/University of Queensland Andrew Stevens , Chair, Industry Innovation and Science Australia
	Morning tea	
	Session 2	Chair: Thomas Vanhercke
	Future proteins on the horizon	Abby Thompson , Chief Operating Officer, Miruku Andrew Janis , General Counsel and Global Head of Regulatory Affairs, Vow Kristi Riordan , CEO and Co-Founder, Harvest B Michele Stansfield , CEO, Cauldron Ferm
	Lunch	
	Session 3	Chair: Blair Keating
	Revolutionising Australia's protein landscape: collaborative strategies and innovation for a thriving protein super-system	Ingrid Appelqvist , Senior Principal Research Scientist, CSIRO Esteban Marcellin , Bio-sustainability Hub Director, University of Queensland Jesse Scott , Chief Innovation and Growth Officer, Graincorp Dan Richards , Chief Executive Officer, Humpty Doo Barramundi
	Afternoon tea	
	Session 4	Chair: Dean Alle
	From startup to impact – the journey of a protein idea in the multi-founder model	Siobhan Costers , CEO and Co-Founder, Eclipse
	Venture Exchange Program, Future Food (Part 1)	Pitches from Singapore and Australian startups
5pm	Networking drinks	

DAY TWO: Wednesday 29 May 2024

TIME	TOPIC	SPEAKER
8.30am	Registration	
	Session 5	Chair: Jean-Philippe Ral
	Sustainable growth of protein production	Claire Mahony , Head of New Ventures and Innovation, Australian Agricultural Company Limited Brad Ridoutt , Principal Research Scientist, CSIRO Juraj Durco , Head of Plant Protein Innovation Hub, The Kraft Heinz Company Matthew Skinner , Chief Executive Officer, Wide Open Agriculture Miranda Stamps , Chief Operating Officer, Wide Open Agriculture
	Morning tea	
	Session 6	Chair: Susan Hani
	Nutrition for the future: a sustainable protein ecosystem for nutrition and consumer empowerment	Aditi Mankad , Theme Leader, Advanced Engineering Biology Future Science Platform, CSIRO Sara Grafenauer , Lead, Nutrition, Dietetics and Food Innovation Program, University of New South Wales Kathy La Macchia , General Manager, Grains and Legumes Nutrition Council Nick Fletcher , FSANZ
	Lunch	
	Session 7	Chair: Aarti Tobin
	Circular economy – closing the protein loop	Colleen MacMillian , Co-Deputy, Circular Economy for Missions, CSIRO Andrew Taylor , Circularity Program Manager, Bega Group Lisa McLean , CEO, Circular Australia + Member, Australian Circular Ministerial Advisory Group Norm Boyle , CEO and Founder, Food Recycle
	Venture Exchange Program, Future Food (Part 2)	Pitches from Singapore and Australian startups
3.30pm	Closing remarks	

Speakers



Dean Alle
Director Company Creation, CSIRO

Dean is a serial entrepreneur and investor. With extensive experience in developing new technology, startup opportunities, and commercialising IP, Dean has founded, run, and exited startups and is skilled in company setup and structuring. Dean is adept at identifying and capturing opportunities, including IP, and planning and executing commercialisation strategies. He has worked with organisations ranging from spinouts and startups to large research institutions and corporations. In addition to his current role at CSIRO, Dean is an active startup investor and drives strategy as the chair and director on various company and advisory boards.



Norm Boyle
CEO, Food Recycle

Norm Boyle is the founder of Food Recycle and the inventor of the patented technology. He has been the main drive behind building the company from the ground up, putting the team together and proving the science. Norm has had experience across a broad range of industries including construction & engineering and spent a number of years in the USA working in licensing patented technologies. He is listed as the inventor on multiple patents and is now focused solely on licencing the Food Recycle technology internationally.



Siobhan Coster
CEO and Co-Founder Eclipse

Siobhan Coster is on a mission to sustainably improve access to crucial nutrients. She is a qualified dietitian with international business experience who is passionate about health and nutrition. Siobhan is working on a ground-breaking food tech start-up, called Eclipse, which is incubated within CSIRO, Australia's National Science Agency. Eclipse uses the incredible science of precision fermentation to make high-value, hard-to-source nutritional proteins from yeast instead of animals. The first ingredient is lactoferrin, a nutrient found in human breastmilk and immune cells, which has immune boosting, iron binding and anti-microbial properties.



Sara Grafenauer
Program lead, Nutrition, Dietetics & Food Innovation, UNSW

A/Prof Sara Grafenauer is an Accredited Practising Dietitian and Fellow of Dietitians Australia. She is the Lead for the Nutrition, Dietetics and Food Innovation Program at UNSW, Sydney and was instrumental in the design of the program. Sara's research interests include dietary patterns, nutrition economics, consumer and food system research with a particular focus on whole grain and legume foods. She has led changes to food standards in relation to dietary fibre analysis and a range of submissions informing policy decisions.

Sara represents the Faculty of Medicine and Health leading the Sustainable Development Goals steering committee. She is a member of the Governing Board for the Global Whole Grain Initiative and is a Member of the Oat Council of Australia. Although an academic, Sara maintains a private practice (on weekends) where she consults with a range of clients, a valuable link to the practice of dietetics for student learning and teaching.



Doug Hilton
Chief Executive, CSIRO

Dr Doug Hilton AO commenced as CSIRO Chief Executive on 29 September 2023. Dr Hilton is a molecular and cellular biologist and previously Director of the Walter and Eliza Hall Institute of Medical Research (WEHI).

At WEHI, his medical research focused on understanding how blood cells communicate and using this knowledge to improve disease treatments. He and his team held more than 20 patents and translated their research through collaboration with venture capitalists and the biopharmaceutical industry. Through an honorary appointment in the Zoology Department at University of Melbourne, he also studies a family of tiny day-flying moths involved in the pollination of Australian plants.

Beyond research, Dr Hilton emphasises the importance of strong institutional cultures, and has furthered diversity in science including as a member of the Champion of Change Coalition and as a board member of Australians Investing in Women.



Crispin Howitt
Future Protein Mission Lead, CSIRO

Dr Howitt is an expert in cereal quality, including carotenoid biosynthesis, protein content and composition, wheat genetics, and grain composition for health benefits. As CSIRO's Future Protein Mission, Crispin currently applies his skills, experience and knowledge to pulses and legumes to enhance their functionality and nutritional profiles.

Having completed his PhD at the Australian National University, studying respiratory pathways and photorespiration in cyanobacteria and higher plants, Crispin did postdoctoral fellowships at Arizona State University and CSIRO, exploring the interaction of respiration and photosynthesis in cyanobacteria, and modifying Arabidopsis starch structure using gene technology.



Andrew Y. Janis
Global Head of Legal & Regulatory Affairs, Vow

Before joining the Sydney cultured meat company Vow, Andrew spent nine years at Uber and DoorDash, leading APAC and international legal teams from Hong Kong and Taipei. Andrew moved to Asia in 2011 with JPMorgan, where he spent four years doing employment legal work.

After graduating from Cornell University and the University of Chicago Law School, Andrew began his career in private practice at Simpson Thacher & Bartlett in New York.



Kathy La Macchia
General Manager, Grains and Legumes Nutrition Council

Kathy is an Australian dietitian with 20 years of experience in the global food industry. She is passionate about supporting companies in making the best foods that deliver sustainability and high-quality nutrition for the better health of all people.

The Grains and Legumes Nutrition Council (GLNC) focuses on evidence-based nutrition research to promote grains, legumes, and plant-based foods as part of a healthy diet. Before joining the GLNC, Kathy worked in the Netherlands, leading Kraft Heinz's international Food Sustainability, Nutrition & Health agenda to improve the product portfolio.

Kathy sits on many advisory groups and is an active member of working groups in nutrition and sustainability, focusing on the planet and public health.



Dr Brad Ridoutt
Principal Research Scientist, CSIRO

Dr Ridoutt's expertise is in life cycle sustainability assessment in the agriculture and food sectors, addressing strategic challenges in relation to climate change, water scarcity, sustainable food systems, and sustainable diets. Dr Ridoutt is engaged in a range of international processes relating to the standardisation of sustainability assessment and environmental labelling. His research is creating the main evidence base concerning the environmental impacts of dietary habits in Australia.



Dr Aditi Mankad
Theme Leader, Advanced Engineering Biology Future Science Platform, CSIRO

Dr Mankad is a principal research scientist, researching attitudes, behaviour, and risk perception in agricultural innovation, biosecurity and biotechnology. Aditi leads the Interdisciplinary Decision-Making theme within CSIRO's Advanced Engineering Biology FSP, housing the social and economic sciences capability.



Dr Ingrid Appelqvist
Senior Principal Research Scientist, CSIRO

Dr Appelqvist leads CSIRO's food innovation centre, a team focused on the future of food. The centre offers clients access to its expertise, technologies, and support in food innovation. This includes assistance with adopting new technologies, improving process efficiency, and developing high-value products for new markets. Ingrid's research on healthy ageing focuses on designing food that breaks down at a controlled rate and restructures itself within the digestive system. This could increase health and wellbeing, going beyond just meeting nutritional needs.



Dr Colleen MacMillan
Co-deputy Circular Economy for Missions, Senior Research Scientist, CSIRO

Dr MacMillan is a science and transitions leader at CSIRO, serving as co-Deputy of the CSIRO Circular Economy for Missions Initiative towards Australia's Circular Economy Transition. She focuses on agriculture, food, and fibre-based industries, researching plant molecular biology for biodegradable renewable plant-based industries and commodities. Her current focus is on precision breeding of cotton fibre quality. Colleen holds a PhD in crop molecular biology and physiology, a BSc with Honours, and a Graduate Diploma of Education from the University of Melbourne.



Dr Abby Thompson
Chief Operating Officer, Miruku

With the molecular farming start-up Mikuru, Dr Thompson is making plants that make dairy. Abby has a strong technical background in food science and nutrition, and has worked extensively with researchers, industry and government in the broader areas of food innovation and food production systems. Abby's previous roles include CEO of FoodHQ, Director of Food Innovation at Massey University, and Senior Scientist – Global Projects at PepsiCo.



Dr Rohan Nelson
Director, Food System Horizons

Dr Nelson brings significant expertise in science-policy engagement to his role as director of the Food System Horizons joint initiative between the University of Queensland and CSIRO. Rohan's other expertise includes the institutional design and management of public sector innovation and forecasting systems and deep knowledge of agriculture, competition, climate, and natural resource management policy.



Professor Esteban Marcellin
Biosustainability Hub Director, University of Queensland

Professor Marcellin is a chemical engineer and systems biologist with a degree in Chemical Engineering and PhD in Bioengineering from the University of Queensland. Esteban's research focuses on the application of systems biology in fermentation processes, using it to identify targets for metabolic engineering. The field combines biology, engineering, and computational modeling and it is a critical area in biotechnology, genetically modifying organisms to improve their production of certain substances or produce new ones. Esteban's work aims to improve the efficiency and effectiveness of microbial and mammalian cells in fermentation processes.



Kristi Riordan
Co-Founder & CEO, Harvest B

Kristi is developing and manufacturing complementary protein with the Australian food technology company Harvest B.

As an experienced operating executive of multiple venture-backed tech companies, Kristi has been redefining categories in highly regulated industries for the past 20 years. During this time, Kristi has been supported by investors including W23 (investor of Harvest B), Bessemer, Matrix and CRV in the USA.

Having spent most of her career in New York City, Kristi was granted a Distinguished Visa in 2019 under the Australian Global Talent program and is now a permanent resident.



Dan Richards
Chief Executive Officer, Humpty Doo Barramundi

Dan Richards is a pioneer, a thought leader, and the leader of the largest Australian-owned fish farm.

Dan has steered Humpty Doo Barramundi, his 30-year-old family business, through the journey of scaling more than 20,000 times its first-year production levels.

Underpinned by adopting production innovations and solving the emerging growth challenges, Dan has built a national protein brand out of the remote Northern Territory.



Andrew Stevens
Chair, Industry Innovation and Science Australia (IISA)

Andrew is a non-executive director with extensive experience in change management, business and ICT program design, risk evaluation, governance and delivery, business transformation, and regional and global expansion.

In addition to being chairman of the IISA board, Andrew is currently chair of the Data Standards Body responsible for implementing Australia's Consumer Data Right, a non-executive director of Stockland Group Limited, and a non-executive director of Ooh! Media.

Andrew was previously chair of the Advanced Manufacturing Growth Centre, managing director of IBM Australia and New Zealand, and chief operating officer at Price Waterhouse and PricewaterhouseCoopers.

Andrew is also a founding member of the Champions of Change Coalition, working towards achieving gender equality.



Jesse Scott
Chief Innovation and Growth Officer, GrainCorp

Jesse is responsible for GrainCorp's strategic growth and innovation projects.

Prior to joining GrainCorp, Jesse worked with McKinsey & Company where he launched and led the firm's agricultural practice in Australia and New Zealand. In his 13 years with McKinsey, Jess held various roles in Asia, the Americas and Europe, focusing on strategy and transformation in several primary industries, including manufacturing, transportation & logistics, mining, and energy.

Jesse holds an MBA from INSEAD in Fontainebleau, France, and a BA from Columbia University in New York.



Dr Susan Hani
Business Development Manager, CSIRO

Dr Hani supports CSIRO's Future Protein Mission and CSIRO's Agriculture & Food crops research program. This support includes developing and managing key priority opportunities that align with strategic impact areas to translate research outputs into industry impacts.

Susan's primary focus is on plant-based protein and legume crops, horticulture and wine grapes, and circular agriculture using aquaponics.



Blair Keating
Business Development Manager, CSIRO

Blair has 30 years of experience in the food and beverage sector as a commercially focused professional with a rich background in well-known iconic food brands.

Blair's professional experience spans dairy, confectionery and broader food and beverage industries, encompassing research and development as well as supply chains.

Blair excels at managing major projects, delivering project benefits, and fostering stakeholder engagement and his commercial acumen allows him to connect technology and operational activities to overall business performance.

Passionate about driving technological and product innovation, Blair thrives in transforming concepts into commercial reality.



Dr Jean-Philippe Ral
Principal Research Scientist, CSIRO

Dr Ral has a keen interest in grain composition and directs his expertise towards fostering the plant-based protein market in Australia, particularly within the pulse sector.

JP's multifaceted research journey includes a PhD from the University of Science and Technologies of Lille in France, where he researched the circadian rhythm of starch biosynthesis in unicellular green algae using a reverse genetic approach.

This journey underscores Jean-Philippe's commitment to advancing scientific understanding to benefit agricultural innovation and sustainable food production.

After joining CSIRO in 2005 as a post-doctoral fellow, focusing on starch phosphorylation in wheat, JP expanded his research, exploring cereal starch degradation during grain development and germination, addressing the challenge of maintaining grain quality in difficult environments.



Dr Thomas Vanhercke
Group Leader, CSIRO

Dr Vanhercke is an expert in metabolic engineering, protein engineering, and synthetic biology, using synthetic biology in yeast and plants to produce high-value food ingredients.

After completing a PhD in Bioengineering at Ghent University in Belgium and Bayer CropScience, Thomas pursued his postdoctoral position at CSIRO Plant Industry, using rational protein design and directed evolution for engineering enzymes involved in plant and yeast lipid metabolism.

Thomas has completed extensive work on combinatorial metabolic engineering of vegetative plant parts to accumulate high levels of valuable plant oils that are normally stored only in certain seeds, and applies his expertise to optimising the production of bespoke metabolites in both crop and microorganisms.

Thomas currently leads CSIRO's Synthetic Traits Group and manages the Novel Protein work package for CSIRO's Future Protein Mission.



Dr Aarti Tobin
Animal Protein Mission lead, CSIRO

Dr Tobin's research focuses on adding value to manufacturing-grade meat. As the animal protein lead for CSIRO's Future Protein Mission, Aarti has developed a high-protein, highly soluble meat powder from this beef with her team, which is currently being commercialised.

With over 30 years of experience developing commercially successful value-added meat products for local and export markets, Aarti's research focuses on how processing interventions affect muscle structure and function, impacting quality attributes such as colour, texture, and sensory properties.

Aarti's PhD focused on texture-modified foods for people with dysphagia (swallowing disorders), and she continues this research, especially on developing foods for dysphagia sufferers. She has also applied her knowledge to developing plant and plant-meat hybrid products for flexitarian consumers.



Matthew Skinner
Chief Executive Officer, Wide Open Agriculture

Matthew began working with Wide Open Agriculture in May 2022 as CFO before being appointed Interim CEO in March 2024. He is currently focused on scaling the company's lupin-based plant protein business.

After starting his career at KPMG in Sydney and London, Matthew began working in various finance and management roles for Intertek, a B2B Quality Assurance and testing company, in the UK, Africa and the Middle East.

After returning to Australia in 2021, Matthew became fascinated by Australian food production during an eight-month trip around Australia in a motorhome.



Miranda Stamps
Chief Operating Officer, Wide Open Agriculture

Miranda brings to her work both the passion of a lifelong foodie and more than twenty years of leadership experience driving complex product development and implementation in the global education sector.

Prior to joining Wide Open Agriculture as COO, Miranda held senior roles at Pearson Plc and SchoolNet Inc, after beginning her career in technology strategy at Ernst & Young Global.



Michele Stansfield
Board Director, CEO and Co-Founder, Cauldron

Michele Stansfield's Cauldron Seed Raise of \$10.5m is the second largest seed raise in Australia by a female founder. As the former General Manager for 8 years of AgriTechnology (which Cauldron acquired), Michele developed the hyper-fermentation intellectual property. Michele is a member of CSIRO's Precision Fermentation Equipment Procurement Committee and advisor to their Synthetic Biology Future Science Platform. Watch Michele explaining the significance of Cauldron's technology at the Asia-Pacific Agri-food Summit.



Andrew Taylor
Circularity Program Manager, Bega Group

Andrew has over 20 years of experience in land management and community development and is the head of the Bega Group's Regional Circularity Co-operative (RCC). Bega Group (aka Bega Cheese) established the co-operative for driving a transition to a circular economy in the region and across the group. Having worked with the NSW Government and the Far South Coast Landcare Association, Andrew has held management and operational roles in sustainable agriculture, natural resource management, biosecurity, animal health, emergency management, and community development.



Katherine Wynn
Lead Economist, CSIRO

Katherine advises CSIRO Future clients on emerging trends and technologies shaping industries and designs responsive strategies for informed investment decisions. Identifying technologies with significant economic impact through research and extensive stakeholder consultation, Katherine quantifies their expected domestic and export revenue, as well as potential cost savings.

Katherine has led the delivery of several reports in agriculture and food, including the Growth Opportunities for Australian Food and Agribusiness report, Australia's National Protein Roadmap, and the Reshaping Australian Food Systems Roadmap.

Katherine holds a PhD in Economics, focusing on R&D investment in agricultural biotechnology, and a Bachelor of Economics, Bachelor of Laws, and Diploma of Language (French) from Monash University.

Before CSIRO, Katherine worked at Deloitte Access Economics, providing investment analysis and policy advice, and leading the agricultural economics practice.



Juraj Durco
Head of R&D Technical Open Innovation, The Kraft Heinz Company

Juraj Durco heads Kraft Heinz's Plant Protein Innovation Hub, developing delicious plant protein-based food for the many, not the few. A natural collaborator, food technologist, consultant, and R&D leader, Juraj has successfully launched products on five continents.

Born in Czechoslovakia, Juraj has a background in analytical chemistry and global R&D experience from companies including Kraft Foods, Mondelez, GWF, and Patties Foods. Juraj recently co-founded FAPIC, Global Consultancy.

Juraj has worked in various environments, overseeing large-scale projects and developing talent as he encounters them. He brings to every project a cultured, international perspective, a pragmatic approach, and a creative mind. Juraj is known within the food industry for improving existing products and smoothly directing new products to market.



Nick Fletcher
Principal Toxicologist, Food Standards Australia New Zealand (FSANZ)

Dr Fletcher is an expert in premarket safety assessment, food contaminants, and toxicology. He has more than 20 years of experience in premarket safety assessment across agricultural and veterinary chemicals, therapeutic goods, and foods.

Nick is the Principal Toxicologist and leads the Standards and Surveillance area at Food Standards Australia New Zealand (FSANZ) and chairs the Advisory Committee on Novel Food. The committee provides advice on the need for regulatory assessment of non-traditional foods in Australia.

With a PhD in Toxicology from Karolinska Institutet in Sweden, Nick is a member of The Joint FAO/WHO Expert Committee on Food Additives and the New Zealand Environment Protection Agency Hazardous Substances and New Organisms committee. In addition, Nick leads FSANZ's work for the Codex Committee on Contaminants in Food (CCCF) that establishes and endorses permitted maximum levels or guideline levels for contaminants and naturally occurring toxicants in food and feed.



Lisa McLean
Managing Director and CEO, Circular Australia

Lisa is a circular economy and zero-carbon business transformation leader. Over the past twenty years, she has worked to catalyse a new circular economy, zero carbon, and sustainable markets, including initiating and setting up the Australian Solar Thermal Association (AUSTELA) and driving circular economy outcomes in water and energy in the private sector.

During her career, Lisa has advocated for policy and regulatory change and advised industry and governments in developing new policy frameworks and regulations for the zero-waste and carbon economy. As a Circular Economy Ministerial Advisory Group (CEMAG) member, Lisa advises the Hon Tanya Plibersek, Minister for Environment and Water, on developing the federal government's circular economy roadmap to 2030.

Lisa also advises the government on policy and strategic projects, including the Carbon Capture Technologies Program and Powering Australia Industry Growth Centre, and NSW's Waste and Sustainable Materials Strategy.

Lisa is the Managing Director and CEO of Circular Australia, a national independent peak NFP leading Australia's transition to a circular economy by 2030.



Claire Mahony
Head of New Ventures and Innovation, Australian Agricultural Company Limited

Claire Mahony is Head of New Ventures and Innovation at Australian Agricultural Company Limited and is passionate about the Australian beef industry and the opportunities in agriculture globally. Claire is currently leading activities at AACO to understand methane mitigation technologies and application, particularly in extensive grazing operations.

With a focus on creating value for the beef value chain through new business models and driving AACo's strategic advantage by adopting innovation at scale, Claire is also establishing a venture client unit within AACo to enable effective engagement with the start-up ecosystem and fast-track commercialisation.

Claire has lived, worked, and studied internationally. She started her career in Animal Science studying at the University of Queensland and Texas A&M University, USA, and she has a Global Executive MBA from Monash.