



ANNUAL REPORT

1 JANUARY - 31 DECEMBER



Riddet Institute

KŌKIRI - TE HĀ O TE KAI

A NEW ZEALAND CENTRE OF RESEARCH EXCELLENCE
HOSTED BY MASSEY UNIVERSITY

OUR **VIS ION**

The Riddet Institute will be the world's top institute in discovery-led research at the frontier of food materials science, nutrition and health, developing knowledge and skills for a vibrant food sector in Aotearoa New Zealand and helping to address the challenges facing the global food sector.



OUR CORE VALUES

THE RIDDET INSTITUTE OPERATES UNDER A SET OF CORE VALUES:

Strive for excellence in all activities and endeavours.

Operate ethically and with integrity.

Be collaborative and inclusive, sharing knowledge and resources for mutual benefit.

Be committed to its responsibilities under Te Tiriti.

Embrace equity and diversity, and support inclusion.

Pursue research and training that supports both commercial and public good outcomes.

Create an enduring global network of scientists to facilitate knowledge transfer across disciplinary boundaries.



CONTENTS



02 →

OUR VISION/
OUR CORE VALUES

16 →

WORLD-CLASS
SCIENCE

06 →

CHAIR'S
REPORT

28 →

OUR
IMPACT

This report summarises the achievements and outputs of The Riddet Institute Centre of Research Excellence for the period 1 January 2025 to 31 December 2025



08 →

DIRECTOR'S
REPORT

10 →

HIGHLIGHTS
JAN-DEC 2025

14 →

STRATEGIC
IMPACT

38 →

OUR
PEOPLE

52 →

FINANCIAL
REPORT

54 →

SCIENTIFIC
PUBLICATIONS





“

The Riddet Institute’s global influence is further reflected in projects such as the Sustainable Nutrition Initiative (SNI®), including research we are now leading in Africa.

”

Rt Hon Sir Lockwood Smith

CHAIR'S REPORT

Kia ora koutou,

The need for excellent agri-food research is today greater than ever. We face the challenge of feeding a growing world population, possibly reaching 10 billion by 2050, while at the same time improving health outcomes and staying within environmental boundaries.

In the future, more protein will be demanded and its quality will matter, especially for those over 65, a population expected to double by 2050. Added to that will be micronutrient supply: it is estimated half of all children and two thirds of young women are deficient in one or more micronutrients, such as calcium, iron and potassium, and vitamins A, E and B12.

The Riddet Institute is playing a pivotal role in dealing with these global challenges. Its scientific success as a Centre of Research Excellence reinforces that role.

Our research on the human digestive, for instance, has enabled development of the world's most anatomically and physiologically realistic models of human digestion. Along with fundamental research on food structure, digestion and absorption, this scientific capability facilitated the discovery of a unique colloidal assembly between casein, iron and phosphate, leading to the patented technology known as FerriPro™. Licenced to Nestlé, and financially significant for Massey University, this breakthrough could improve the nutritional well-being of millions of children whose diets are deficient in iron.

Riddet Institute research has also developed the Digestible Indispensable Amino Acid Score (DIAAS) for assessing protein quality. Endorsed by the

FAO, this work, led by Acting Director Distinguished Professor Paul Moughan, was not only at the heart of the Dietary Protein for Human Health Symposium at Utrecht, Netherlands, in 2023, but also a similar 2025 international symposium, again chaired by Dist. Prof Moughan, in Orlando, Florida.

The DIAAS work has reinforced the importance of animal proteins, so vital to New Zealand's economy. But it has also opened a whole new world of opportunity – the world of hybrid animal/plant proteins. Developments we are undertaking with these proteins could significantly expand quality protein availability in a sustainable way.

The Riddet Institute's global influence is further reflected in projects such as the Sustainable Nutrition Initiative (SNI®), including research we are now leading in Africa. The SNI® models could be vital for understanding national and global food systems with an aim to optimise nutrient delivery, sustainability and food security.

The Riddet Institute's role at the forefront of innovation also continued in 2025 with a new research project using precision fermentation to convert pine forest residues into high-value proteins and other products. This research, in collaboration with the Bioeconomy Science Institute, could be literally transformative.

As Chair, this past year, I felt enormous pride as our globally respected former Director, Distinguished Professor Harjinder Singh, received his latest honour, Companion of the New Zealand Order of Merit. The Board and I also congratulate Acting Director, Dist. Prof Paul Moughan, who was awarded the same Royal Honour in the 2026 New Year's Honours.

Dist. Prof Singh made the difficult decision to step down as Director at the end of 2025 to focus on his research. The Institute will be recruiting a new Director in 2026. I would like to sincerely thank both Paul and Harjinder for their outstanding scientific leadership including their combined directorship of the Riddet Institute over the past 23 years.

Food science is the heart of one of our great global challenges, and the Riddet Institute is at the cutting-edge of that science. So, to young Kiwi students I say, join our post-graduate programme; join our team making a real difference globally.



Rt Hon Sir Lockwood Smith
KNZM, PhD
Chair, Riddet Institute

DIRECTOR'S REPORT

Tēnā koutou katoa,

It is my pleasure to bring you this 2025 Annual Report in my capacity as Acting Director of the Riddet Institute. It has been another strong year for the Riddet Institute, with real momentum across our research programmes and impact areas.

Within our multi-disciplinary work in food and nutrition research, we continue to deliver high quality, internationally recognised science, building on a legacy of excellence. The impact of our work innovates the very heart of New Zealand's economy.

In 2025, our publication performance reached a new high, with 89% of scientific papers published in top quartile journals. This is important as it is a quantitative measure of scientific impact and represents a high rate of citation of our work by other scientists.

We continued to translate research into impact, particularly through the commercialisation of new knowledge. The Institute also played an active leadership role in Aotearoa New Zealand's food sector, with strong representation at key events, a growing media profile, and extensive service by our Investigators on international journal editorial boards and international bodies such as FAO and WHO. Our contribution to national and international food and nutrition policy remains significant, with the Proteos project on dietary protein quality, for example, continuing to attract attention and inform thinking well beyond New Zealand.

As a Centre of Research Excellence, the Riddet Institute is embedded within a broad network of collaborators, funding partners and end users, which helps amplify the reach and impact of our work. Our researchers are widely recognised for both their scientific excellence and the strength of their global collaborations. A particular highlight was the recognition of our Director, Distinguished Professor Harjinder Singh, as a Companion of the New Zealand Order of Merit this year.

Our focus on people remains central to what we do. Through a range of professional development opportunities, we support our students and early career researchers to become career ready. As a result, more than two thirds of our graduates to date have moved into roles in either research or industry. This reflects the Institute's commitment to building capability and ensuring that New Zealand's research community is well prepared for the future.

But 2025 was also a year of change. The Institute navigated significant personnel challenges, continuing from 2024, when Dist. Prof Harjinder Singh commenced extended sick leave. In December 2025, Dist. Prof Singh made the difficult decision to step down from

the Directorship, with recruitment for the role planned for 2026. We were also deeply saddened by the passing of Professor Nicole Roy (University of Otago), a valued Principal Investigator.

Despite these challenges, the revised research plan for 2025–2028 is tracking well. It has enabled further recruitment of postgraduate researchers, including 11 PhD scholars, strengthening the Institute's contribution to New Zealand's future scientific capability.

Overall, the Riddet Institute remains resilient, ambitious and outward looking. I thank our Board, staff, researchers and post-graduate researchers for their efforts in contributing to our continued scientific leadership. I would like to specifically acknowledge the tireless support of our Chair, the Rt Hon Sir Lockwood Smith.



Paul J Moughan

CNZM, PhD, DSc, Hon DSc, FRSNZ, FRSC
Distinguished Professor
Fellow Laureate
Acting Director, Riddet Institute

“

As a Centre of Research Excellence, the Riddet Institute is embedded within a broad network of collaborators, funding partners and end users, which helps amplify the reach and impact of our work.

”

Paul J Moughan





HIGHLIGHTS

JANUARY- DECEMBER 2025





RIDDET INSTITUTE FELLOW LAUREATE RECEIVES NEW YEARS HONOUR

Distinguished Professor, Riddet Institute Fellow Laureate, and Acting Director Paul Moughan was awarded the Companion of the New Zealand Order of Merit (CNZM) for his lifetime of research into protein digestion and metabolism, as well as the founding of globally significant research centres and his international advocacy for science.

Distinguished Professor Paul Moughan.

RIDDET INSTITUTE DIRECTOR CONFERRED WITH CNZM

Distinguished Professor Harjinder Singh received his New Zealand Order of Merit honour at a special investiture ceremony in September. He was made a Companion of the New Zealand Order of Merit (CNZM) for services to food science in January.

Distinguished Professor Harjinder Singh and Governor General Dame Cindy Kiro at Government House in Wellington.



GASTROINTESTINAL RESEARCH REWARDED

Professor Leo Cheng (Principal Investigator) was awarded the MacDiarmid Medal from the Royal Society Te Apārangi for his outstanding scientific research and world-leading techniques to record and analyse electrical activity in the body. Prof Cheng also received a \$941k research grant from the Marsden Fund for his project on electromechanical mapping of stomach function.

Professor Leo Cheng with the MacDiarmid Medal.

SAP IMPRESSED WITH CORE RESEARCH PROGRAMME PROGRESS

In December, the Riddet Institute's Scientific Advisory Panel met in Palmerston North. The panel commended the Institute on its continuing global impact in food structure and digestibility research. The transdisciplinary nature of our research, the digestome projects, and precision fermentation and hybrid foods were particularly praised by the international experts.



From left: Distinguished Professor Paul Moughan (Acting Director), Professor José Miguel Aguilera (Chile), Professor Manny Noakes (Australia), Professor Alastair Robertson (Australia), Professor Rickey Yada (Canada), John Henley-King (Associate Director Operations), and Professor Oded Shoseyov (Israel).



PhD researchers Ali Jamshidi (centre), Reza Vaseghi Backshayesh (third from right), and Maryam Hesabirad (second from right) at FSDH with their team that won the AI Innovation Challenge.

AI INNOVATION CHALLENGE SUCCESS

Riddet Institute postgraduate researchers were part of the successful team that won the AI Innovation Challenge at the 8th International Conference on Food Structure, Digestion and Health in Melbourne November. The team's project, called "Tackling Taste-Driven Food Waste with AI," explored how artificial intelligence can reduce avoidable food waste by predicting consumer taste preferences. Another team with Riddet Institute researchers won the People's Choice Award for their project on "AI Enhanced Product and Process Design for Sanitarium."



Professor Indrawati Oey .

PROFESSOR BRINGS KIWI VOICE TO THE GLOBAL STAGE

Professor Indrawati Oey (Principal Investigator) was appointed as a Councillor of the International Society for Precision Health (ISPH). ISPH is supported by the UN and its mission is to connect various scientific communities to promote and advance food, nutrition and health by using artificial intelligence and big data analysis. The appointment recognises Prof Oey's leadership in food and nutrition research and her contribution to advancing science at the intersection of health and technology.



Alpha Group Chairman and Founder Prof Yihuai Gao is presented with a framed letter acknowledging a two-decade research collaboration with Massey University by Provost Giselle Brynes.

RESEARCH COLLABORATION MARKS 20 YEARS

July 2025 marked the 20th anniversary of the research partnership between Alpha Group Ltd and the Riddet Institute. The collaboration is now embarking on a new biotech research project focusing on Shiitake mushrooms.



Dr Mike Boland

RIDDET FELLOW WINS JC ANDREWS FOOD SCIENCE AWARD

Dr Mike Boland received the Hall of Fame award at the 2025 NZIFST Conference in Palmerston North. Dr Boland is known for fusing rigorous academic research with dynamic commercial innovation and an ability to find new technical solutions over a career spanning more than five decades.



UNITED STATES HUNGRY FOR PROTEIN EXPERTISE

Researchers from the Riddet Institute were invited to replicate their New Zealand-led European protein symposium in Orlando, Florida in May. The Dietary Protein for Global Human Health symposium was a satellite programme held the day before the four-day annual Nutrition 2025 conference, hosted by the American Society of Nutrition. It was co-organised with the University of Illinois. The symposium comes after the Riddet Institute co-organised a protein symposium in Utrecht, along with the Food and Agriculture Organization (FAO) and Wageningen University, in 2023.

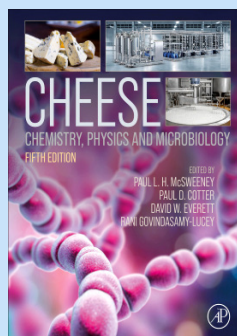
ENGAGING MORE MINDS IN FOOD SCIENCE

8,120
followers on LinkedIn

increase of
27%
since 2024



ACADEMIC PUBLISHING TALLY



29
Journal Editors and
07
Guest Editors for special issues

Riddet Institute researchers gave
105
presentations at conferences in 2025.

Academic publishing tally:

209
Journal articles,
03
books and
10
book chapters

01:

GLOBAL SCIENCE EXCELLENCE:

Aotearoa New Zealand is recognised for its world-class expertise in food science and related disciplines



209

journal articles published



3

books published



10

book chapters published



28

keynote addresses at conferences from Riddet Institute scientists



2

international conferences hosted by the Riddet Institute



15

international scientists hosted by the Riddet Institute



6

overseas interns/ PhD students



\$3.4m

in funding for collaborative project with Kenya

02:

INNOVATION & CAPABILITY BUILDING:

A world-leading, innovative and sustainable food sector in Aotearoa New Zealand



12

undergraduate students interned at the Institute over the summer



28

postgraduate researchers recruited



17

postgraduate researchers completed their studies



6

new graduates entered roles in New Zealand industry



13

key industry strategic partners continue to work with the Riddet Institute on world-class research projects



Riddet Institute scientists established

1

start-up company in 2025

03:

INDUSTRY LEADERSHIP:

A future-proofed and future-focused food sector in Aotearoa New Zealand that addresses local and global sustainability challenges



Riddet Institute researchers appeared in

11

radio or television interviews



127

news media articles featuring Riddet Institute research/expertise were published



The Riddet Institute sponsored

1

national industry conference with 282 attendees



Agnes Hutchings mentored

80

high-school students at the MPI Mission Sustainable Innovation Challenge at Massey University



The Riddet Institute hosted the Hon Dr Shane Reti, Minister of Science, Innovation and Technology, and Dr John Roche, Prime Minister's Chief Science Advisor, at Te Rourou, as well as other delegates from government ministries

SNI

The Sustainable Nutrition Initiative* (SNI*) has continued to expand its influence both nationally and internationally. In 2025, researchers were invited to present in Sweden, France, Kenya, and across New Zealand

04: MĀORI PARTNERSHIPS:

A stronger indigenous food sector in Aotearoa New Zealand, supporting improved outcomes for Māori



A Memorandum of Understanding with Tōrere Macadamias was drafted in 2025 to continue a strategic partnership. The Institute also has an aligned PhD researcher working on a project with the company



The Riddet Institute is part of a new inter-University strategic partnership with Kāika Institute of Climate Resilience based in Lincoln. The relationship will provide joint PhDs and post-docs for Māori and Pacific scholars



Dr Nick Smith spoke on sustainable nutrition at the Ahuwhenua Māori farming awards

SNi

SNi[®] has continued its MBIE funded project Kai anamata mā Aotearoa with Wakatū Incorporation, incorporating mātauranga in our scientific investigations

05: EQUITY AND INCLUSION:

The food sector in Aotearoa New Zealand is more inclusive, diverse, and equitable, and provides more opportunities for Māori and Pacific people

More than
75%
of our postgraduate researchers and early career scientists, and almost



50%
of our staff are women



4
Māori postgraduate researchers



4
Pacific postgraduate researchers



4
Māori Pūhoro STEM Academy students and



4
Pacific undergraduate students interned over the summer



Our postgraduate researchers come from over 30 countries

06:

INFORMING CONSUMER CHOICE:

New nutritional indices of food and nutritional guidelines that provide more informed food choices for consumers



The Riddet Institute was invited to co-organise the Dietary Protein for Global Human Health conference in Orlando, Florida, with the University of Illinois. This was a follow up to the 2023 protein symposium in Utrecht, the Netherlands, which was co-organised by the Riddet Institute. The conference was a satellite programme of the American Society of Nutrition 2025 Conference



Dist. Prof Paul Moughan has many roles contributing to international food policy and guidelines. He is currently an advisor to the United States Agency for International Development (USAID) and the United States National Academy of Science. He is also on the Global Dairy Platform's (GDP) Nutritional Security Advisory Council on world food security and sustainability, an appointee to the joint FAO-IEAE Expert Committee on a database for Ileal Amino Acid Digestibility in Humans, and in 2026 he will be joining the Protein and Amino Acid Requirements for Maternal and Child Health, IAEA, committee



Prof Indrawati Oey has been elected a councillor of the International Society for Precision Health (ISPH). She will serve three terms from October 2025 – October 2028.



Profs Indrawati Oey and David Everett are fellows of Food Standards Australia New Zealand (FSANZ). Agency (IAEA) for a two-year period



Prof Lisa Te Morenga is the Co-Chair of Health Coalition Aotearoa

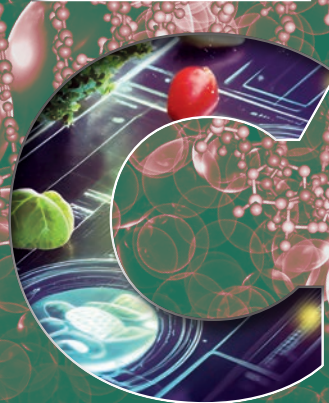
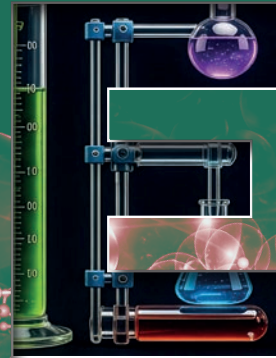
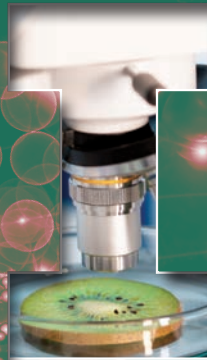


Prof Joanne Hort was appointed to the Advisory Board of Nectar, part of Food System Innovations California, USA



Dr Suzanne Hodgkinson advises the United Nations FAO and International Atomic Energy Agency on the development of a global database for food amino acid digestibility data

WORLD CLASS



Aotearoa
New Zealand is
recognised for
its world-class
expertise in food
science and
related disciplines,
enhancing its
reputation as
a trustworthy
producer of high-
quality food,
and catalysing
investment in
food innovation
and international
collaborations in
food research.

RESEARCH PROGRAMME LOOKS TO A HEALTHY FUTURE FOR HUMANITY

RESEARCH PLAN FOR CORE 2021 - 2028

The Riddet Institute intends to generate the future knowledge and skills required to help address the unprecedented challenges and disruptions facing the food sector in a rapidly changing world. It aims to be the world's top institute in discovery-led research at the frontier of food materials science, nutrition and health, and will develop high calibre human capital to ensure rapid innovation, a vibrant food sector and long-lasting socioeconomic benefits for New Zealand.

THE FOOD SECTOR IS UNDERGOING A SIGNIFICANT TRANSFORMATION, WITH THE NEED FOR MORE FOOD, HEALTHIER FOOD, LESS FOOD WASTAGE AND SUSTAINABLE LOW EMISSION, RESOURCE-EFFICIENT PRODUCTION. THIS CONSTITUTES A COMPLEX CHALLENGE, PROVIDING BOTH OPPORTUNITIES AND RISKS FOR NEW ZEALAND'S FOOD-EXPORT-LED ECONOMY.

The Riddet Institute's contribution to this challenge is well recognised – it is internationally regarded as a leading centre of research and scholarship at the interface of food science and nutrition.

It has undertaken ground-breaking, discovery-based research into the science of food structures and their complex interactions with nutrient absorption, metabolism and human health and wellbeing. It is an innovation engine for the New Zealand food industry.

The next generation of food products will need to address not only nutrition and health, but also the most pressing environmental and ethical issues of our time. Foods need to become more sustainable: environmentally, nutritionally, socially, and economically. This will require the introduction of new materials in the food chain, as well as the creation of foods that appeal to consumers and deliver their nutritional needs with less wastage. This could include novel crops, animal protein replacers, marine plants, and food materials from bioreactors.

The Riddet Institute CoRE research programme comprises three interlinked research themes and two overarching supporting elements.

Each theme has several tightly connected projects that are generating new knowledge in defined areas. Investigators work across themes and projects to collectively contribute to the overall vision of:

"Future Foods in Harmony with Nature".

**The vision of the Riddet Institute
Centre of Research Excellence (CoRE)
research programme is:**

FUTURE FOODS IN HARMONY WITH NATURE

This vision provides the fundamental underpinning science to support tomorrow's innovations in advanced foods. These foods will be sustainable, support optimal nutrition, human health and wellbeing, and appeal to the preferences of tomorrow's global consumers.



RESEARCH THEMES AND SUPPORTING ELEMENTS

THEMES

THEME 01

FOOD STRUCTURE
DESIGN AND
NUTRIENT DELIVERY



THEME OVERVIEW:

This research theme addresses one of the most important scientific challenges for optimising the nutritional value of sustainable foods, by unpacking the hierarchy of complex structures occurring in foods and their modifications during processing and gastrointestinal digestion. Crucially, this theme will integrate advanced computational and mathematical modelling and human clinical studies with food structure and digestion science to provide advanced knowledge to completely transform current food design processes and food dietary guidelines. There are three research projects under this theme.

THEME 02

FUTURE
PROTEINS



THEME OVERVIEW:

This research theme addresses the challenges of transitioning from animal proteins to more sustainable plant and other alternative proteins, driven by consumer perceptions around nutrition, health, animal welfare, and the sustainability of food production. This transition can take place either by turning plant proteins into food products that mimic animal product functionality and nutritional quality or by consuming foods that contain some animal protein but proportionately more plant protein. This theme will provide underpinning knowledge that will allow the development of innovative sustainable protein ingredients and food products and will provide opportunities for new market development. There are two research projects under this theme.

THEME 03

TRANSFORMATIONAL
TECHNOLOGIES



THEME OVERVIEW:

The intersections of food, biotechnology, digital technologies, and robotics are beginning to disrupt and transform the global food industry. New and emerging technologies are being harnessed to design new ways to produce and consume food, responding to both consumer trends and an imperative to improve sustainability and human health. Many of the innovations are based on the use of synthetic biology and bioengineering approaches to produce animal protein foods in non-traditional ways, leading to the emergence of synthetic, cultured, and engineered foods. There are three research projects under this theme.



COMPLEX SYSTEMS SCIENCE

Complex systems exhibit attributes that are irreducible to the properties of individual elements of that system, such that the complexity of such systems can be fully understood only by studying the system in its entirety. Food, and its behaviour during digestion, is inherently complex and challenging to study and model. However, the increasing availability of large, complex datasets, and advances in machine learning and artificial intelligence, open possibilities for studying this complexity. The Institute is using Artificial Intelligence (AI) and Machine Learning (ML) to analyse complex food system data, design robust experiments, and model system behaviours.



THE HUMAN DIMENSION

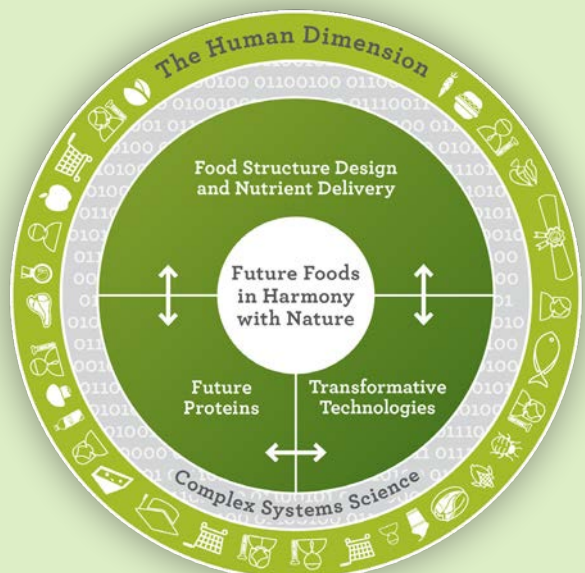
The Human Dimension element recognises the importance of understanding the broader social and cultural contexts in which food systems operate. This includes examining how societal factors influence food choices and the role of food science in shaping health outcomes. The three projects in this domain explore Māori food knowledge and its impact on well-being, consumer acceptance and sensory properties of sustainable future foods, and the effects of food structure and diets on long-term health outcomes.



TRANSDISCIPLINARY RESEARCH (TDR)

By crossing traditional disciplinary boundaries, Riddet Institute researchers are tackling real-world challenges with collaborative, outcome-driven projects. One such project focuses on enhancing the nutrition of the elderly through engineered food structures that optimise texture, nutrient delivery, and bioavailability, addressing the difficulties faced by the elderly in maintaining a balanced diet due to sensory and digestive challenges.

FUTURE FOODS IN HARMONY WITH NATURE



Pictured is the representation of our three research themes, with two overarching supporting elements. All elements are targeted at the central mission of Future Foods in Harmony with Nature.

FOOD STRUCTURE UNDER THE MICROSCOPE



Digestion studies have included work to analyse how human breast milk is digested by infants.

One of the signature endeavours of the CoRE research programme is understanding how foods are structured, and how this structure affects nutrient delivery in the body. This understanding is a necessary first step to designing new foods to provide optimum nutrition.

However, there is a current knowledge gap in our ability to predict how complex foods will behave. The Riddet Institute is working on several connected projects that address different elements of food structure and how this relates to the supply of nutrients. Some studies look at characterising the structural components themselves.

Our recent work has clearly demonstrated the importance of the state and structures of food materials in the environment of the gastro-intestinal tract (GIT). Of particular importance is the critical difference that modification to the structures can make to the kinetics of the release of nutrients from the food matrix (e.g. the rate, extent and type of released nutrients), gastric emptying and the subsequent digestion of food in the small intestine.

Led by Dr Alejandra Acevedo-Fani and Prof Mark Waterland, studies are now moving on to combining different foods and observing ensuing behaviour in the simulated environment.

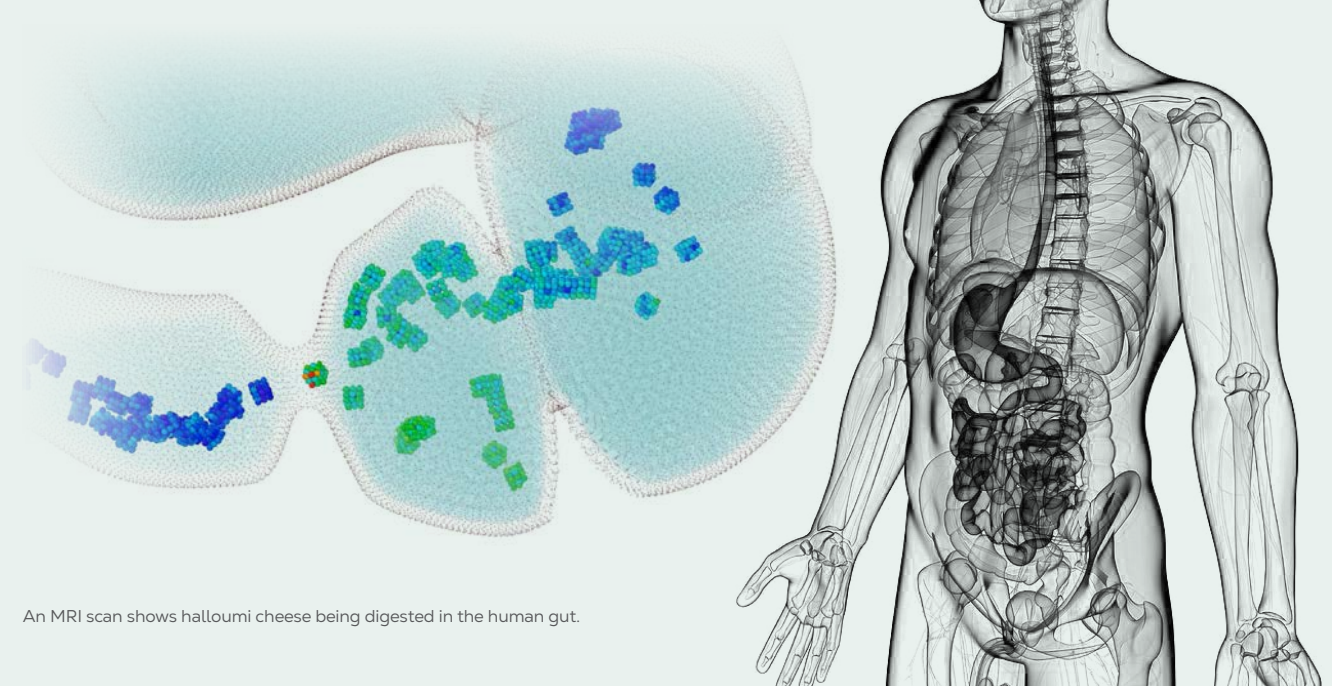
Doctoral researcher Di Lu is investigating hybrid plant-milk protein cheese structure using new analytical techniques.

Her study uses a novel integration of Confocal Raman spectroscopy with advanced machine learning to achieve high-resolution chemical imaging that reveal the microstructure of the cheeses.

Postdoctoral fellow Dr Linda Nezbedova is investigating how the structure of fresh human breast milk changes during infant *in vitro* digestion and how these changes influence the delivery of proteins and lipids to infants. This research has developed semi-dynamic, age-specific *in vitro* gastric and intestinal digestion protocols, which are used to digest freshly expressed milk from volunteer mothers. The results so far are promising, showing clear alterations in protein and lipid structures that affect nutrient retention and hydrolysis patterns in the infant stomach. The study will further investigate lipid and protein digestion kinetics during infant *in vitro* digestion.

Using increasingly sophisticated *in vitro* models, the team is also undertaking rigorous correlation with *in vivo* studies. As well as using data from animal nutrition studies, researchers are pioneering non-invasive methods for visualising food structures in humans, such as functional magnetic resonance imaging (MRI) of food in the process of being digested. The knowledge gained from this project will guide the design of food structures that enhance nutrient absorption – another step on the way to finding additional food production techniques to address world hunger, health and longevity.

MEDICAL IMAGING TECHNIQUES CONTRIBUTE TO HUMAN DIGESTOME RESEARCH



An MRI scan shows halloumi cheese being digested in the human gut.

An artificial model of the human gastrointestinal system is under construction that will simulate everything from chewing to nutrient absorption in the human body.

Project 1.2 aims to build the Human Digestome, a set of advanced tools that mimic how the human digestive system works. The goal is to understand, and replicate, how food breaks down in the body and how nutrients are released. The Riddet Institute has already developed several separate models of chewing, stomach mixing, gut movement, and nutrient absorption. The goal of this project is to connect these separate models into one unified system, giving a more complete picture of digestion.

Led by Professors Leo Cheng and Gail Bornhorst, the team is creating two major systems to achieve this. The first system comprises building “artificial gut” simulators. These imitate what happens in different parts of the digestive system, such as chewing, gastric breakdown and nutrient absorption. The second is made up of digital models that simulate how food moves through the gut, how quickly the stomach empties, how nutrients are broken down, and how food structure affects digestion.

In 2025 researchers have advanced mathematical and experimental modelling of human gastric digestion through MRI analysis, *in vitro* digestion studies, and particle-based simulations.

Continuing from last year, medical imaging from magnetic resonance imaging (MRI) has been used by Dr Nadun Palmada and doctoral researcher Litian Su to examine real life digestion and obtain detailed data to be used in developing digital models of the human gastric digestion process.

Most recently, the MRI data from ten healthy volunteers produced gastric emptying curves for total contents, liquids, and semi-solids while participants were digesting halloumi cheese. This data will be used to validate and improve the Human Gastric Simulator (HGS) machine to better replicate nature and support the development of subject specific simulations of stomach mixing and controlled stomach emptying.

**THE RIDDET INSTITUTE
HAS ALREADY DEVELOPED
SEVERAL SEPARATE
MODELS OF CHEWING,
STOMACH MIXING,
GUT MOVEMENT, AND
NUTRIENT ABSORPTION.**

PROJECT 1.2 / THE HUMAN DIGESTOME – AN INTEGRATED MODEL OF THE HUMAN GASTROINTESTINAL TRACT

SIMULATED DIGESTION WORK ADVANCES



Dr Juliana Leite with HGS 2.0 at Riddet Institute headquarters in Palmerston North.

During 2025, Research Officer Dr Juliana Leite has been conducting dynamic *in vitro* gastric and small intestinal digestion experiments using the Human Gastric Simulator (HGS 2.0).

Her investigations have involved several different foods, such as pasta, white rice, halloumi cheese, separately and in combination. In aligned experiments at UC Davis, dynamic *in vitro* gastric and small intestinal digestion experiments have been completed on several types of high-protein matrices (mozzarella and halloumi cheese, paneer, ham) using the HGS 2.0 with simulated mastication. This allows comparison of the behaviour of similar foods across labs and with variations in digestion conditions.

Aligned with Project 1.1, *in vitro* experiments and *in vivo* trials using a growing pig model for digestion have examined how single foods versus mixed meals digest. Early results qualitatively match MRI findings, and future work will compare quantitative

outputs across simulator versions, MRI data, and foods subjected to different levels of oral processing.

Parallel to the MRI modelling work, new physical gastric simulators are being developed and tested. A next generation version three Human Gastric Simulator (HGS 3.0) has been designed with

automated gastric emptying, and real-time pH and temperature monitoring and will be utilised in future experiments to better understand the impact of food structures on what happens in the stomach.

**ALIGNED WITH PROJECT
1.1, *IN VITRO* EXPERIMENTS
AND *IN VIVO* TRIALS USING
A GROWING PIG MODEL FOR
DIGESTION HAVE EXAMINED
HOW SINGLE FOODS VERSUS
MIXED MEALS DIGEST.**

REINVENTING PLANT PROTEINS: NEW TECHNOLOGIES SHAPING THE FUTURE OF FOOD

Project 2.1, led by Prof Indrawati Oey and Dr Kevin Sutton, aims to provide insights into the fundamental understanding of the techno-functional and nutritional potential of plant proteins from sustainable sources for integration in future food products.

Despite significant recent growth in plant protein foods, current plant-based protein products often do not meet consumers' expectations in terms of appearance, taste or texture, and may have long ingredient lists. Many commercially available isolated plant protein ingredients exhibit poor functional properties, limiting their use in formulated food products.

Utilisation of novel technologies can enable scientists to create foods suitable for various health-related dietary needs while ensuring adequate protein digestibility. Researchers have used pulsed electric field (PEF) technology to create a gel structure from a chickpea flour slurry that meets a range of International Dysphagia Diet Standardisation Initiative classifications, suggesting it could be suitable for dysphagia patients.

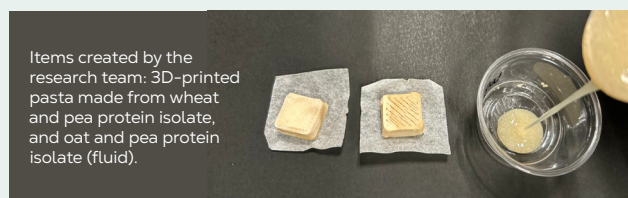
Subsequent studies using oat flour and pea protein isolate, which have higher protein content and complementary amino acid profiles as compared to chickpea flour, revealed that the mechanism of PEF-induced gelation primarily relates to the rapid gelatinisation of starch. Further experiments are being performed to investigate whether this mechanism can be modulated by utilising protein isolates with varying protein solubilities.

Studies incorporating pea protein isolate into wheat-based pasta resulted in an easier-to-chew product that was also more readily digestible, suggesting positive applications for the diets



From left: Dr Jessie King, Professor Indrawati Oey, and Dr George Yang

of persons with chewing and swallowing difficulties (e.g. elderly, Parkinsons patients). Formulations of just three ingredients (wheat, pea protein isolate, and water) were successfully used to create a 3D printing ink, without the need for any additives. This discovery provides a pathway to designing structured foods with targeted functional and nutritional properties, and in particular, will inform the development of combinatorial dairy/meat/egg plant proteins.



Items created by the research team: 3D-printed pasta made from wheat and pea protein isolate, and oat and pea protein isolate (fluid).

PROJECT 2.2 / COMBINATORIAL PROTEINS – UNDERSTANDING THE FUNCTIONALITY AND NUTRITIONAL IMPACT OF COMPOSITE PROTEINS

COMBINATION PLANT AND ANIMAL PROTEINS MODELLED

The increasing global demand for sustainable protein and the growing shift towards more plant-based proteins has driven the development of novel foods that combine the best of both.

However, these foods must provide essential and high-quality amino acids in sufficient quantity. Protein content information, amino acid composition, amino acid digestibility, and protein quality for a wide range of globally available protein sources is being collated in this project.

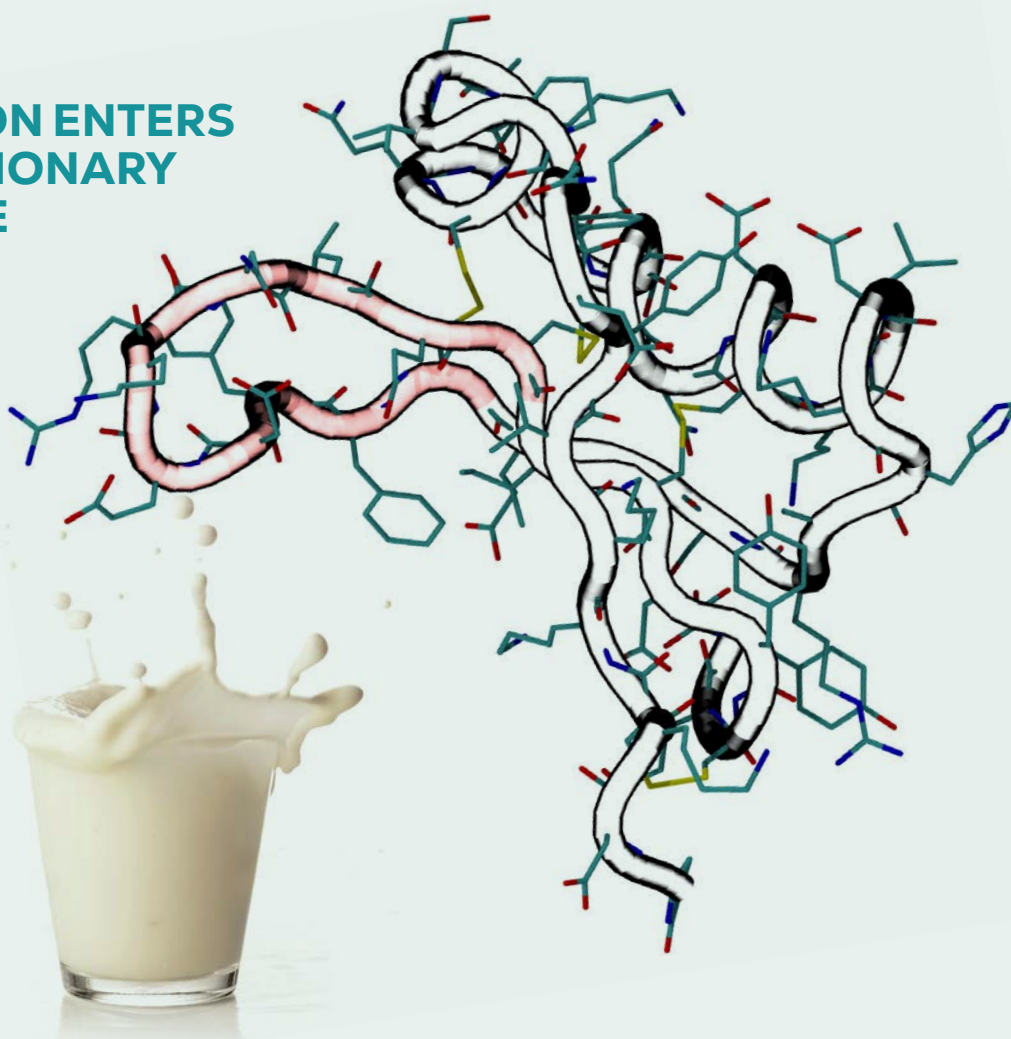
In 2025, mathematical (linear programming) and machine learning (XGBoost) algorithm models were used to generate a diversity of combinatorial food protein formulation solutions with desired balanced amino acid patterns and defined functionality attributes. Preliminary results showed that optimised protein blends need to include animal proteins for specific nutritional and functionality attributes. The work provides the knowledge base to allow high

quality animal-based proteins (e.g. milk and meat) to be used to extend targeted protein nutrition by combining them with cheaper plant proteins.

The possibility of including synthetic amino acids with a controlled release pattern in the protein mixtures is currently being explored by doctoral researcher, Manfred Goh. Manfred's main objective is to control amino acid absorption kinetics through food matrix interactions, to improve the synchronicity of amino acid delivery. Manfred has screened three lipid-based matrices for encapsulation of lysine, validated the methodology for accurate encapsulation efficiency calculations, and developed an encapsulation technology for encapsulation of lysine that may confer gastric protection. Manfred found that the formulation of protein blends to optimise the use of complementary plant proteins, mixed animal and plant proteins, or synthetic amino acids, can help to create food proteins of high protein quality to meet protein needs.

PROTEIN PRODUCTION ENTERS A REVOLUTIONARY NEW PHASE

A rendered image of a brazzein protein, with the pink indicating the region thought responsible for sweetness.



Food protein engineering has seen a revolution in computational techniques, allowing scientists to engineer food proteins via AI-assisted technologies.

The broad aim of Project 3.2 is to develop and apply novel recombinant methods to generate new proteins with novel food functions (e.g., new flavour proteins) and to replicate existing native proteins (e.g., milk proteins) in alternative production systems, such as algae rather than animals. Across multiple projects, this work involves the use of microorganisms, fungi, microalgae, and food protein engineering approaches to improve existing food proteins and to develop novel protein products.

Project 3.2 is led by Professors Renwick Dobson (University of Canterbury), Emily Parker (University of Victoria, Wellington), and Geoff Jameson (Massey University).

Prof Dobson says there are significant opportunities, academic and commercial, for the improvement of food proteins via protein engineering, including engineering milk proteins to remove or alter sequences that cause food allergies, or making proteins with enhanced nutrition or functionality.

Drs Davide Mercadante, and Danae Larsen (University of Auckland), are designing a series of super sweet brazzein proteins. As they are 100,000 times sweeter than glucose, these proteins have potential for future use creating healthier sweet foods.

However, they are challenging proteins to engineer, isolate and replicate. Nonetheless, the team have succeeded this year to express these proteins, representing a significant achievement, and are designing brazzein proteins with increased stability and improved isolation.

In Canterbury, doctoral researcher Nick McGrath has been advancing knowledge in protein chemistry to develop entirely new proteins. Using generative tools, he designs proteins built with specific components into 3D models. The generative tools allow scientists to try out promising design combinations virtually before expressing the proteins in the lab. The new proteins are then physically engineered.

A complementary project (Project 3.3) led by Professor Munish Puri commenced in 2025. This project is also focusing on generating new proteins and high-value food ingredients via precision fermentation and bioprocessing, but without the use of recombinant methods.

THERE ARE SIGNIFICANT OPPORTUNITIES, ACADEMIC AND COMMERCIAL, FOR THE IMPROVEMENT OF FOOD PROTEINS VIA PROTEIN ENGINEERING

SUPPORTING ELEMENTS

PROJECT FOCUSES ON OPTIMISING FOOD FOR AGEING NUTRITION

As the global population rapidly ages, project TDR1 is exploring solutions for the physiological changes caused by ageing that impact optimal nutrition.

This cross-disciplinary, integrative project builds on our previously established methodologies and fundamental knowledge from other CoRE programmes on food materials, structures, and nutrient delivery to develop protein and micronutrient enhanced food systems optimising nutrition for the elderly. These foods will not only provide the desired sensory and textured experience but also deliver the required nutrients with high bioavailability.

In 2025, a comprehensive review of existing literature on eating capabilities and food texture preferences in older adults was conducted in collaboration with Professor Carolyn Ross (Washington State University, USA). In parallel, global datasets, including InterRAI aged care assessments, Ministry of Health, and WHO health data, were evaluated for existing information that could inform our study.

Based on these findings, a survey in 2026 will investigate the eating capabilities, texture preferences and current food consumption of a diverse group of elderly individuals in New Zealand and USA. Data from this pilot survey will help identify when age-related changes in food consumption begin to occur and define the key areas for the larger survey.

PROJECT TDR1 / STRUCTURING FOODS FOR ENHANCING NUTRITION AMONG THE ELDERLY



An *in vitro* (lab-based) colonic fermentation assay has been developed and validated that mimics large intestinal functions. It is used to evaluate metabolites produced when digesta from the end of the small intestine pass through the large intestine. The quantity of a wide range of metabolites, e.g. butyric acid (considered beneficial) and putrescine acid (deemed as damaging) that are produced are determined. Innoculum for the assay are provided by faecal collections. There is evidence that gut microbiota composition changes that come with ageing also change functionality.

As part of the Riddet Institute's work to develop *in vitro* methods that simulate digestive function in older people, our scientists are running a study to identify which microbes are present and which microbial genes perform different functions across adulthood age groups. The fermentative capacity of microbes from different adulthood age groups will be evaluated and compared to determine whether age affects microbial action.

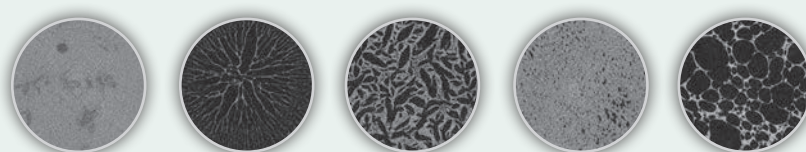
MACHINE LEARNING USED TO CLASSIFY FOOD DIGESTION BEHAVIOUR

In a collaboration with the University of California (UC) Davis, the Riddet Institute is using artificial intelligence and machine learning to sort foods in a classification system for researching food structure.

The Food Breakdown Classification System (FBCS) was developed at UC Davis as a way to categorise foods (into six classes) based on their initial texture (hard or soft) and their relative rate of softening during gastric digestion (fast, medium or slow). In a current aligned project, doctoral researchers at UC Davis have collected experimental data on the composition, texture, and softening during *in vitro* gastric digestion of more than 50 foods. Since food structure also plays a critical role in food texture and behaviour during digestion, micro-computed tomography (micro-CT) images were also taken of each food. Micro-CT is similar to hospital CT imaging but on a small scale with increased resolution – from millimetre to micrometre scale. 2D cross-sectional slides are produced, revealing the internal features and microstructure of an object or material.

Starting in February 2025, Junior Research Officer Michelle Smit used machine learning techniques to train different types of models to classify foods into one of the six FBCS classes using features derived from micro-CT images as well as information

PROJECT CSI / APPLICATION OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING TECHNIQUES



Micro-CT scans, from left, cooked ham, freeze dried carrot, freeze dried coconut, raw apple, and toasted white bread.

on their composition. She was able to develop several models that accurately classify most foods into their FBCS class using only information on food structure and composition.

The machine learning model performance depends on the number of food products used to train the model, which tells us that more data on a wider variety of foods is needed for comprehensive predictions. However, the connection between food structure (via micro-CT images), food composition, and FBCS class (behaviour during digestion) suggests that this is a promising approach. In the future, initial composition and structure information from foods may be used to predict their digestion behaviour, which could reduce the number of experiments needed to design and optimise future foods with targeted digestion behaviour.

01: HAMISH TRLIN (UOC)



Cultured beef differs from conventional beef in allergy-related hazards

As cultured meat moves toward commercialisation, people want to understand how it impacts health compared to conventional animal meat. Hamish Trlin's PhD research focuses on the impact of cell culture on bovine meat allergens by comparing protein expression in beef tissue to that of cultured bovine cells at varying stages of culture.

Hamish cultured primary bovine myoblasts for short-, medium-, and long-durations and then compared these to native tissue. Proteomic and immunoblotting analyses identified cumulative changes at different phases of culturing, with significant differences between cultured cells and native tissue. Trlin found that cultured cells contained relatively fewer traditional protein allergens than regular steak but provoked stronger immune reactions in blood samples from people with an acquired meat allergy. Three proteins, which currently aren't classified as meat allergens by the World Health Organization, reacted with immunoglobulin E (IgE) and could produce immune responses or allergic reactions in some people.

Hamish's findings highlight the need for further investigation into the allergen properties of cultured meat.

02: SUMMER RANGIMAARIE WRIGHT (MU)



Unwrapping cross-cultural consumer perceptions of Māori food branding

Māori often communicate a food product's value on packaging using Māori language and messages related to provenance and environmental wellbeing. However, little is known about how consumers, in particular critical consumers, perceive these messages across local and export markets and how cultural context shapes attitudes. PhD researcher Summer Wright interviewed critical consumers in Aotearoa New Zealand and Singapore to investigate and compare attitudes towards Māori messaging on food packaging across two cultural groups.

The study found that Singaporeans were more likely to report cultural preservation as a value they saw reflected in attributes presented. Aotearoa's critical consumers exhibited more polarised views, likely influenced by a contested sociopolitical landscape. Singaporean consumers had more positive attitudes towards messaging that positioned Māori as indigenous to Aotearoa but were less familiar with cultural concepts presented.

Summer's findings will support Māori enterprise to overcome sociocultural barriers affecting consumer acceptance of their offerings, thereby improving business outcomes.

03: NICHOLAS HORLACHER (UOO)



Protein quality of PEF-treated oat-pea-based yoghurt alternatives tested

Plant proteins have gained popularity as functional ingredients in plant-based dairy alternatives. However, protein quality remains a key nutritional challenge in milk and yoghurt alternatives, often limited by suboptimal amino acid profiles, antinutritional factors, and low protein digestibility. As part of his PhD research, Nicholas Horlacher aimed to explore the use of pulsed electric fields (PEF) technology as a mild pasteurisation treatment to enhance protein qualities of an oat-pea blended milk alternative and further fermented yoghurt alternative.

Results revealed that a nutritionally complete amino acid profile, meeting FAO requirements, could be achieved by combining oat and pea materials. Evaluated via the *in vitro* protein digestibility corrected amino acid score, PEF treatments followed by lactic acid fermentation improved protein nutritional qualities by up to 14%, linked to complementary degradations of antinutritional factors and protein structural changes. This further resulted in beneficial functional modifications, enhancing protein solubility by up to 20% and permitting the formation of yoghurt like textures by fermentation induced protein gelation.

The applied technologies are highly scalable for industrial use. As such, Nicholas' research supports future innovations in commercial dairy alternative applications by providing key insights into the influence of PEF and fermentation on protein nutritional and functional qualities.

04:
**JUSTINE
COOMSON (MU)**



Estimating micronutrient adequacy of women of reproductive age in Sub-Saharan Africa through food fortification

Inadequate micronutrient intakes and related deficiencies are a significant challenge to global public health. Estimates of nutrient intake from food (excluding fortification and supplementation) found that more than four billion people globally do not consume enough iron, folate, and iodine. PhD researcher Justine Coomson is focusing on Sub-Saharan Africa (SSA) and women of reproductive age (WRA) who bear a significant share of this burden.

Justine has found that between 2019 and 2022, mandatory fortification reduced the population of WRA with inadequate intakes by up to 21% for folate, 48% for iodine, and 14% for iron across SSA countries that had adequate data for this analysis. Justine's research shows that improved compliance with fortification standards could reduce inadequacies further. This would require strengthening regulatory monitoring by governments and expanding fortified food coverage to vulnerable populations, but it would significantly maximise fortification's potential to address micronutrient inadequacies in these countries. Justine's research contributes to the Riddet Institute's focus on sustainable nutrition for healthy populations.

05:
**GEORGE
YANG (UOO)**



Tactile perceptions of cooked wheat pasta sheets partially substituted with pea protein

There is a growing interest in incorporating plant proteins into foods in a way that increases their nutritional value. However, little is known about how this alters the textural perceptions of such products. PhD researcher George Yang is investigating the effects of substituting wheat flour with pea protein isolate (PPI) in pasta, analysing microstructural changes via confocal microscopy and evaluating oral tactile perceptions through an *in vivo* mastication study.

Microstructural analysis revealed that PPI incorporation disrupted the continuous gluten network, forming denser but less organised protein aggregates. *In vivo*, pasta substituted with 25% PPI required less chewing time and was perceived as less firm, less sticky, and more brittle compared to conventional wheat pasta. Fast chewers were more effective in recognising differences in pasta firmness, whereas slow chewers exhibited heightened sensitivity to stickiness and brittleness.

These findings could contribute to the development of protein-rich pasta with preferred textures to improve the experience of specific consumer groups (e.g. softer texture for the elderly).

06:
**NICK
MCGRATH
(UOC)**



Designing micronutrient carriers with RF diffusion

There is a growing need for more effective ways to deliver essential nutrients, as current delivery options are often unstable, poorly absorbed, or degrade during processing. Protein-based carriers offer a promising solution, with the potential to improve the stability, bioavailability, and delivery of vitamins and minerals in functional foods.

Nick McGrath's PhD project is focusing on designing novel proteins that bind and stabilise micronutrients using RFdiffusion ALL-Atom. This next-generation generative tool enables the creation of proteins with atomic-level control, allowing for the design of custom binding pockets that physically wrap around specific target molecules. Candidate proteins have been screened through molecular docking and dynamics simulations to assess binding strength, solubility, and stability.

The project also includes the scale-up of fermentation and downstream processing to support food-grade production. These nutrient-binding proteins could be commercialised in the future as functional ingredients in fortified foods or novel delivery systems, offering a more reliable and efficient way to deliver key nutrients and opening up new possibilities for food innovation and precision nutrition.

OUR



Future-proofing the Aotearoa New Zealand food sector: developing capability, creating, and transferring knowledge and addressing local and global sustainability challenges.



TINY FOOD FARMS ARE BIG NEWS FOR THE FUTURE

Professor Munish Puri is leading New Zealand's move into biotechnology.

Professor Munish Puri is an expert in growing food on a micro scale. The Riddet BSI-AgResearch Chair in Alternative Proteins creates "cell factories" to produce essential molecules.

These molecules can then be used to grow food or serve as food ingredients delivering targeted nutrition like healthy fats, beneficial enzymes, or essential proteins.

The inaugural appointment of the Chair in Alternative Proteins is a post jointly funded by the Bioeconomy Science Institute (BSI) and the Riddet Institute. The joint-professorship aims to strengthen New Zealand capacity in the fast-growing cultivated food industry.

Prof Puri is a pioneer in alternative proteins, precision fermentation, and cellular agriculture. He says his mission is to innovate, develop, and deliver sustainable and nutritious foods that will shape the future of the global food industry. These new food systems will not compete with conventional agriculture but will complement existing production, providing diversification and resilience to the sector.

Bioprocessing uses non-genetic approaches to manipulate microbes to create novel high-value nutraceutical products for food and medical applications. The starting point is a cell.

"It could be a mammalian cell, a microbial cell, a plant cell, or a fungal cell," Prof Puri says. "We use the cells and grow them in a contained environment to express specialist products recognised as super foods and next-generation foods."

He says promising results can be achieved using naturally occurring yeasts, microalgae, and fungi.

Prof Puri says the technique is not new.

"We have already been producing pharmaceuticals like this. The best example is insulin for diabetes."

Prof Puri will focus on producing proteins and "smart fats". He will be developing new nutritious foods, in collaboration with the food product development team at the Riddet Institute and the Emerging Foods project team at BSI.

The technology is currently costly and time-consuming, but Prof Puri anticipates a future where it will provide a much-needed source of food.

The new foods will not only need to rival conventional food nutritionally, and in the sensory eating experience, they must also deliver on price. Industry involvement through large scale manufacturing facilities is needed to bring the cost down.

Prof Puri says these new foods will not only meet the growing consumer demand for non-animal sourced food, but also address the malnutrition in countries with limited agriculture.

"In Australia and New Zealand, we have abundance – we are blessed with food choice and availability – so perhaps these foods won't be consumed here. They are likely to be exported and will boost our export revenue."

Prof Puri is also a Principal Investigator and co-lead of the research team from BSI that secured NZ\$10.4 million from the government's MBIE Endeavour Fund in September. The research programme will use precision fermentation to convert pine forestry residues into high-value proteins.

INSTITUTE SCIENTISTS SHARE LATEST IN SENSORY NEUROSCIENCE AND NUTRITION RESEARCH IN USA

Riddet Institute researchers showcased the latest in sensory science at the prestigious Pangborn conference in Philadelphia in August 2025.

The 16th Pangborn Sensory Science Symposium brought together 1000 leading researchers and practitioners under the theme "Connecting Senses and Minds". Professor Joanne Hort (Fonterra-Riddet Chair in Consumer and Sensory Science) was on the Scientific Committee and is also a Board Member of the Pangborn Sensory Science Trust which runs the symposia.

A significant contingent from the Institute attended, contributing nine posters and five oral presentations to the conference.

Associate Professor Mei Peng (Associate Investigator) presented findings from a recent study exploring the role of multisensory mental imagery in shaping eating behaviour. The research provides novel insights into fundamental sensory perception and breaks new ground in understanding consumer sensory experiences. By revealing how sensory imagery – particularly of flavour and texture – shapes sensory expectations and eating behaviour, it advances our understanding of the psychological drivers behind food experiences. She also showcased a poster linking multisensory imagery with food neophobia.

Doctoral researchers from the University of Otago, Yunfan Mo and Ai Ting Goh, both gave oral presentations. Yunfan gave a talk on the relationship between chemosensory perception and macronutrient choices based on a female cohort study. Her research highlighted the potential of specific carbohydrate, protein, and fat-related sensory stimuli to map macronutrient groups and capture individual dietary patterns.

Ai Ting presented her research on unpacking attitudes toward plant-based proteins across cultures. Her work provided insights into cultural differences in consumer attitudes toward plant-based meat alternatives and meat and highlighted the effectiveness of implicit methods in understanding aspects of consumer attitudes.

Associate Professor Mei Peng, second from left, with PhD researchers Ai Ting Goh, left, Elizabeth Tabe Agbor, centre, Stephanie McLeod, and Yunfan Mo.



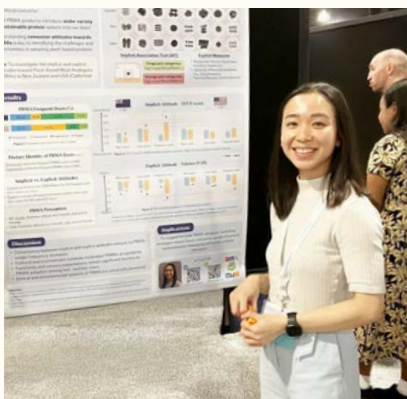
Dr Amanda Dupas de Matos and Dr Simone Poggesi (Key Researchers) also presented their research related to CoRE projects. Dr Dupas de Matos shared on utilising a contextual approach to investigate consumer perception of plant-based milk-alternatives in a realistic meal scenario.

Dr Poggesi presented his findings on how congruent ambient scents in virtual environments affects ice cream tasting.

Assoc Prof Mei Peng and her doctoral researchers from the Sensory Neuroscience and Nutrition (SENNSE) Lab at the University of Otago also made a strong impact.

In total, the Riddet Institute contributed nine posters and four oral presentations to the conference. They covered topics ranging from the effect of neophobia on sensory responses, the relationship between sleep and chemosensory dysfunction, stress sweet cravings, plant-based diets and pregnancy, and the cognitive effects of intermittent fasting in women.

The diverse contributions from Riddet Institute scientists at the top international conference for sensory science highlight the Institute's growing role in advancing global sensory and nutrition science, bridging fundamental research with applied consumer insights.



Riddet Institute PhD researcher Ai Ting Goh presenting her poster detailing research on attitudes toward plant-based proteins across cultures.



HON DR SHANE RETI AND DR JOHN ROCHE VISITED TE ROUROU

Massey University Vice Chancellor Prof Jan Thomas and Hon Dr Shane Reti, Minister of Science, Innovation and Technology watched the Riddet Institute's human gastric simulator in action and was updated on the Institute's work on emerging technology in alternative proteins, including precision fermentation.



Dr Juliana Leite (right), Research Officer, showing Dr John Roche, the Prime Minister's Chief Science Advisor, the Human Gastric Simulator in December. Dr Roche visited Te Rourou in Palmerston North and had a tour of the research laboratories.

Dr Roche, with his knowledge in nutritional biochemistry, noted how the simulator enables significant advances in monitoring both physical and chemical digestion in 3D and tracking nutrient absorption from food.



BUILDING A SUSTAINABLE FUTURE FOR KENYA'S FOOD SYSTEM



Workshop participants at the ILRI headquarters in Nairobi, October 2025.

The Institute's Sustainable Nutrition Initiative® (SNI®) is applying its expertise in sustainable food system modelling to develop an interactive scenario model for Kenya (KelFSM).

The three-year, \$3.4 million project is funded by the Gates Foundation and delivered in partnership with the International Livestock Research Institute (ILRI) in Kenya. The model will support the transformation of Kenya's national food systems and ensure sustainability and nutrition security for the country's 53 million people.

Project leader Professor Warren McNabb says the contract is the result of years of work and reflects the expertise of the SNI® team.

"It's about feeding people the nutrients they require. The model will look at the foods that can be produced on the land that they have, complemented by the food they can import, to result in a nutrient flow to Kenyans that provides adequate nutrition."

The model will simulate present and future food system scenarios at the sub-national and national levels, and inform evidence-based planning for a more inclusive, resilient and sustainable food future. At a workshop in Nairobi in October 2025, Mr Collins Marangu, Agriculture Secretary from the State Department for Agriculture, Kenya,

thanked the stakeholders for the important role they play in the development of the model.

"The efficacy of this model hinges on a truly inclusive and participatory co-design process. This engagement today will lay the groundwork for a living tool that evolves with our national priorities and stakeholder insights."

The workshop hosted over 60 delegates from the government, civil society, private sector, research institutes, and development partners. Ten desired outcomes for food system transformation in Kenya were identified, including enhanced food sovereignty, equitable access to nutritious diets, reduction of non-communicable diseases, sustainable agroecological production, and increased farmer productivity and income.

"This process moves us from talking about transformation to building the tools that make transformation measurable," said one workshop participant from the Ministry of Agriculture.

The model will capture the interconnections between agricultural and food production, food trade, human nutrition, environmental impacts, and economic outcomes.

In the future, the model has the potential to inform land use planning, food trade policy, public health strategies, and investment decisions. The SNI® team is collaborating closely with its Kenyan-based research



The Sustainable Nutrition Initiative's Dr Dorisel Torres-Rojas presenting in Kenya.

"THE EFFICACY OF THIS MODEL HINGES ON A TRULY INCLUSIVE AND PARTICIPATORY CO-DESIGN PROCESS... THIS ENGAGEMENT TODAY WILL LAY THE GROUNDWORK FOR A LIVING TOOL THAT EVOLVES WITH OUR NATIONAL PRIORITIES AND STAKEHOLDER INSIGHTS."

partners, who contribute critical data, contextual insights and deep local expertise. Their on-the-ground knowledge is central to ensuring the model accurately reflects Kenya's realities and supports decision making that is both relevant and impactful.

The KelFSM aligns closely with other models developed by the Riddet Institute, helping to create a better understanding of the food system and opportunities for improvement to sustainably feed the global population with the nutrients required.

AN INTERNATIONAL “OLYMPICS OF NUTRITION” SHOWS RIDDET INFLUENCE



Riddet Institute Scientists in Paris, from left: Dr Nick Smith, Distinguished Professor Paul Moughan, Patricia Soh, Dr Mahya Tavan, Dr Sylvia Chungchunlam, and Shien Ping Ong.

In August, over 3,800 delegates from 117 countries attended the 23rd International Congress of Nutrition of the International Union of Nutritional Sciences (IUNS-ICN) in Paris, France. Several Riddet Institute researchers spoke at this influential forum focusing on sustainable food for global health, highlighting the Institute's leadership in sustainable nutrition research.

“It’s the Olympics of nutrition that anyone who’s anyone is at,” says Dr Nick Smith, making the conference a great exposure event for Riddet Institute research.

Distinguished Professor Paul Moughan was the organiser and invited chair of a session on diet optimisation to nourish a healthy, sustainable world featuring multiple Riddet Institute researchers. This session considered optimising regional, culturally relevant diets with consideration for not only food security and nutrition, but also economic, social, and environmental sustainability. It was attended by around 300 delegates.

Dist. Prof Moughan’s presentation focused on protein quality and sustainability through the lens of dairy. With pressures mounting to transition to more sustainable sources of protein, the issue of protein quality remains of utmost importance.

“Dairy foods may sometimes be considered expensive on a weight basis, but they are power packed with nutrients, such that based on the cost of key nutrients, for example the amino acid lysine, they are very cost competitive. Our work has shown that dairy foods have an important position in future sustainable dietary patterns, and New Zealand is a very efficient producer of grass-fed dairy,” said Dist. Prof Moughan.

Professor Barbara Burlingame looked at the UN 2030 agenda and beyond, and what that means for global food sustainability. Prof Burlingame also chaired and presented at several other sessions during the conference.

Dr Smith shared The Riddet Institute’s iOTA Model®, a diet optimisation model for advancing the transition toward

more sustainable diets and food systems. Dr Smith also chaired and presented in a session focusing on the unique challenges and opportunities for sustainable diets and food systems in Oceania, sharing the New Zealand perspective and the Kai Anamata mō Aotearoa project.

Dr Mahya Tavan and Patricia Soh from the Institute’s SNI® team also shared insights from their research at the conference, considering environmental impact and nutrition quality.

Research Officer Dr Sylvia Chungchunlam gave two presentations at the conference, looking at the respective roles of animal- and plant-sourced foods for sustainable lowest-cost nutrient security in developing countries, as well as the valuable role of beef and its bioavailable nutrients.

PhD researcher Shien Ping Ong presented on the effects of daily consumption of ruminant milk on digestive comfort in older women, as part of a session on public health and nutrition throughout the life cycle.

THE RIDDET INSTITUTE IS SUPPORTING R&D FOR BUSINESS

The Riddet Institute aims to generate impact and catalyse innovation to ultimately benefit the New Zealand food industry. This involves transferring knowledge and capability for industry outcomes.

Professor David Everett and Melanie Ruffell, as Stakeholder Relationship Managers, facilitate the interaction with our stakeholders, with Ms Ruffell having a greater focus on Māori food companies and entities.

The Riddet Institute has several currently active research programmes with its Strategic Industry Partners. The Alpha Group is working with the Riddet Institute on a new biotech research project focusing on Shiitake mushrooms. The Institute is collaborating with Oceania Dairy (Yili) and Zhejiang Gongshang University on proprietary cheese cultures for the Chinese market.

The Institute also supports Oceania Dairy with fundamental work on the amino acid composition of breast milk. It has a long-standing relationship with Fonterra and currently works in the areas of complementary nutrition and probiotics, and hosts the Fonterra-Riddet Chair in Consumer and Sensory Science.

The Riddet Institute CoRE formally partners or aligns with other relevant networks to promote research and innovation by the NZ food industry. In addition, the Riddet Institute contributes to several programmes funded by MBIE in which there is significant industry involvement.

THE RIDDET INSTITUTE WORKS WITH KEY STAKEHOLDERS TO ACHIEVE IMPACT, INCLUDING ITS STRATEGIC INDUSTRY PARTNERS:

MĀORI AND PACIFIC RESEARCH HIGHLIGHTS

PACIFIC RESEARCHER WINS EXCELLENCE AWARD FOR PHD

Salanieta Naliva won one of three Excellence Awards at the Massey Pacific Postgraduate Conference 2025 for her presentation on “Key influencers of nutrition risk in older Fijian iTaukei.”

The conference was held to celebrate the research of Massey University’s Pacific postgraduate researchers. There was a total of 32 postgraduate presenters at the two-day conference.

The Excellence Awards were sponsored by Ala Le Manuia Ltd and included a cash prize of \$500. Salanieta was recognised for her outstanding presentation and contribution to Pacific research.

Salanieta’s preliminary findings indicate a significant proportion of the population of Fiji are at risk of malnutrition, with key factors including ethnicity, living conditions, and coexisting health conditions.

Salanieta Naliva



Dr Summer Rangimaarie Wright (right) at her graduation with supervisor Professor Joanne Hort.

THESIS PUTS MĀORI SCHOLAR ON DEAN’S LIST

Doctoral researcher Summer Rangimaarie Wright (Ngāti Maniapoto) graduated in 2025 from Massey University, with her thesis making the Dean’s List of Excellent Theses. An excellent communicator, Dr Wright also won the Ainsley Te Hiwi Student Communicator Award in 2024 at the Riddet Institute Colloquium. Dr Wright’s research explored Māori future foods.

NEW ZEALAND BANANA CULTIVARS HAVE POTENTIAL FOR PREMIUM BABY FOOD PRODUCT



New Zealand-grown banana varieties, from left, High Noon, a mixture of Ducasse and High Noon ready for market, and Goldfinger.

A new PhD study is looking at Northland-grown bananas as first foods for weaning infants.

Doctoral researcher Simone Frame (Ngāti Maniapoto) aims to help far north grower Austenz Ltd who is working on a baby food product made from New Zealand bananas. Austenz Ltd’s Toni-Nere Austen (Te Rawawa, Ngāti Kahu, Ngāti Hine) is also one of Simone’s PhD supervisors.

Simone’s work is investigating how the infant gut responds to specific prebiotic structures in New Zealand-grown bananas. Currently the only commercial bananas available are imported from overseas, and the market is dominated by one variety, Cavendish.

In Aotearoa a wide array of different banana cultivars are grown. Simone says she wants to be a part of research science that can be used to achieve Māori aspirations, and she is grateful her PhD project gives her the agency to do so.

“I want to be able to do the sort of science that can make a real-world difference in my community,” Simone says.

Another of Simone’s supervisors is the Bioeconomy Science Institute’s Dr Jane Mullaney (Ngāti Porou/Ngāti Raukawa), who says Simone’s study will benefit Māori.

“It’s bridging the gap for Māori that haven’t got access to research resources and don’t know who to trust in this field.

She is taking science and using her skills and knowledge to help Māori develop a new industry.”

The theory is that New Zealand’s cooler climate will produce the distinct starch profiles they are targeting and be different to bananas grown in tropical zones in the world.

“When babies transition to solid food, bananas are a good weaning food,” Dr Mullaney says. “We think New Zealand bananas have characteristics that make them superior to those grown overseas to make them more nutritious, based on our climate and their slower growing.”

For her PhD, Simone will be monitoring specific climate conditions where New Zealand growers are cultivating banana plants, to better understand how New Zealand growing conditions impact prebiotic components. From this the scientists and growers can determine which banana variety is best suited to baby food.



Simone Frame



RESEARCH COLLABORATION MARKS 20 YEARS

The Alpha Group celebrates 20 years with the Riddet Institute and Massey University.

Professor Yihuai Gao, founder of the multi-million-dollar nutraceutical company Alpha Group Ltd, was honoured by Massey University for his 20-year research partnership with the Riddet Institute.

Prof Gao is a globally recognised expert in fungi research, establishing the Alpha-Massey Natural Nutraceutical Research Centre after discovering and proving the powerful health benefits of reishi mushroom medicinal extracts more than two decades ago.

The Alpha Group toured the Riddet Institute's newly equipped food bioprocessing laboratories, and had lunch at the historic Turitea House,

where Prof Gao was presented with a framed letter to acknowledge his two-decade research collaboration by Massey University Provost Professor Giselle Brynes. Prof Brynes said through high-quality scientific research the collaboration has unlocked the power of specific ingredients for health benefits, while also opening up a global audience through Prof Gao's connections with a customer base in China and wider Asia.

The collaboration is now embarking on a new biotech research project with the Riddet Institute focusing on Shiitake mushrooms.



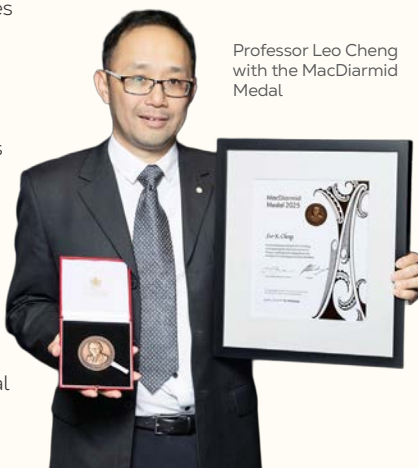
GASTROINTESTINAL RESEARCH REWARDED AND RECOGNISED

Professor Leo Cheng had a very good November. In one week, he was bestowed the MacDiarmid Medal from the Royal Society Te Apārangi and awarded a \$941,000 research grant from the Marsden Fund.

Prof Cheng leads the Gastrointestinal Motility Research Group at the Auckland Bioengineering Institute at the University of Auckland and is a Principal Investigator at the Riddet Institute.

The MacDiarmid Medal recognises his outstanding scientific research developing world-leading techniques to record and analyse electrical activity in the body, opening new frontiers for diagnosing and treating gut-motility disorders.

By combining mathematical modelling with experimental research, Prof Cheng's team has revealed how disordered electrical signals in the gut cause debilitating symptoms such as chronic nausea. His research has informed the creation of new diagnostic biomarkers and therapies, including gastric electrical pacing. The Marsden Funding will go towards Prof Cheng's project "lighting up the dark side of the stomach", furthering research into the electromechanical mapping of stomach function.



Professor Leo Cheng with the MacDiarmid Medal

INTERNATIONAL SCIENCE EXCELLENCE

RESEARCH COLLABORATION AND CONSORTIA

International University Consortium of Food Science & Nutrition (IUCoFSN)

This consortium is a formal research collaboration between the world-leading schools in food science including the University of Leeds (UK), Riddet Institute (Massey University, NZ), Wageningen University (the Netherlands), Zhejiang Gongshang University (China), Kyoto University (Japan), University of Guelph (Canada), and University of Massachusetts (USA).

PROTEOS Research Consortium

Proteos is an international collaboration to characterise the nutritional quality of dietary food proteins based on the DIAAS methodology developed in a large part at the Riddet Institute.

National Alternative Protein Innovation Centre (NAPIC)

The Riddet Institute joined as a Research Partner of the National Alternative Protein Innovation Centre (NAPIC) based in the UK in 2024. In 2025 the first (online) meeting of the International Scientific and Engagement Board (ISEB) of the NAPIC was held, attended by Prof David Everett on behalf of the Riddet Institute.

New Zealand Singapore Future Foods Research Programme

A notable new hybrid meat collaboration on the MBIE-funded NZ-Singapore Future Foods programme called "A Scalable, novel process for affordable, market-ready hybrid meat production" is being co-led by the University of Canterbury (Prof Ren Dobson, Principal Investigator) and the National University of Singapore, involving several Riddet Investigators and PhD researchers.

INFOGEST

This programme involves researchers from around the globe and seeks to provide a focal point for research and methodologies in digestion models.

CSIRO, Australia

The Institute continues to collaborate with CSIRO in mounting the highly successful Food Structures Digestion and Health (FSDH) international conferences held alternately in New Zealand and Australia. The 2025 conference was held in Werribee, Australia.

INRAE & Institut Agro, France

INRAE is France's national research institute for Agriculture, Food and Environment and has long-standing links with the Riddet Institute. In 2025, an intern from L'Institut Agro came to Aotearoa New Zealand for six months, and there are plans to welcome another two interns for five months each in 2026.

Wageningen University & Research, the Netherlands

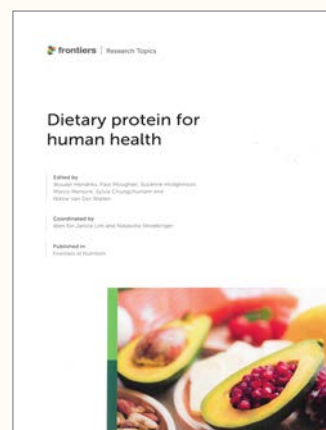
The Riddet Institute is a long-standing preferred research partner of this prestigious European University and Research Centre.

SPECIAL EDITION PUBLISHED ON PROTEIN CONFERENCE PROCEEDINGS

A special 216-page Research Topic of the *Frontiers in Nutrition* journal has been published to bring together the original scholarship presented at the 2023 International Symposium on Dietary Protein for Human Health at Utrecht in the Netherlands.

This symposium was organised by the Riddet Institute in collaboration with the Food and Agriculture Organization (FAO) and Wageningen University and Research.

It brought together the world's leading experts in protein to discuss ways to address the nutritional needs of a burgeoning world population. The 2025 special research topic edition *Dietary protein for human health* contains 25 scholarly journal articles and was jointly edited by three researchers from Massey University's Riddet Institute and three from Wageningen University and Research, the Netherlands. It provides a comprehensive update of recent advances in protein research and knowledge.



UNITED STATES HUNGRY FOR PROTEIN EXPERTISE

DIST. PROF MOUGHAN SAID THE CONFERENCE WAS A TESTAMENT TO THE QUALITY OF THE RESEARCH AND LEADERSHIP OF THE RIDDET INSTITUTE IN NEW ZEALAND.

The Riddet Institute's global reputation in dietary protein research is so significant that its scientists were asked to organise an international conference, not once, but twice.

Building on the success of the 2023 International Symposium on Dietary Protein for Human Health in the Netherlands (as described above), the Riddet Institute, in collaboration with the University of Illinois, was asked to replicate the symposium in the United States for the benefit of American scientists.

Held in May 2025, the Dietary Protein for Global Human Health event was a satellite programme of the four-day annual Nutrition 2025 conference in Orlando, Florida, hosted by the American Society of Nutrition.

Riddet Institute protein expert Distinguished Professor Paul Moughan said the invite was a demonstration of

New Zealand's expertise in the specialised area of protein digestibility and metabolism.

"Why not ask Harvard or Oxford? They asked us.

"It garners us a lot of attention. This is a very high level of recognition of our prowess in that area."

Dist. Prof Moughan chaired the Utrecht meeting and said it was rare for a conference to be repeated somewhere else.

"To be invited to replicate the earlier conference in the United States – at the behest of the United States – that's not usual. It shows we have a real influence on both sides of the Atlantic."

Dist. Prof Moughan said the conference was a testament to the quality of the research and leadership of the Riddet Institute in New Zealand.

ALIGNED

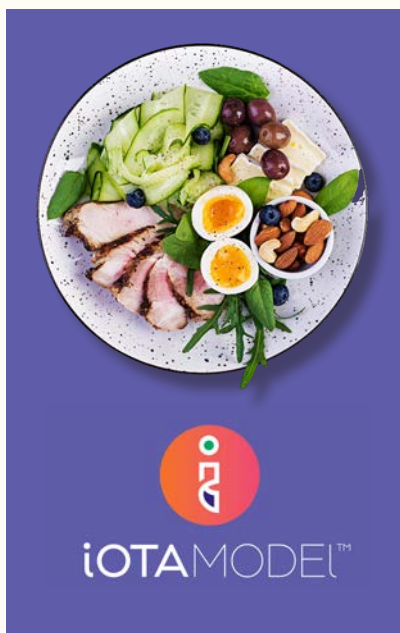


In 2025, The Institute's Sustainable Nutrition

Initiative (SNI®) team launched the iOTA Model®.

The model is a New Zealand-specific dietary optimisation tool designed to bring the various aspects of diet sustainability together and provide evidence-based knowledge on both the environmental impact of food and its economic and nutritional sustainability.

In a study of eight optimisation scenarios for adult males and females, results showed that reducing dietary greenhouse gas emissions (GHGE) or price by approximately 80% was possible while meeting nutrient adequacy requirements.



However, such diets deviated substantially from the baseline eating patterns, indicating lower consumer acceptability, and only included a limited variety of foods. On the contrary, diets with minimum deviation from baseline remained realistic while adhering to nutrient targets and reducing GHGE by 10 and 30% in female and male consumers aged 19–30 years, respectively, and weekly price remained below the baseline.

The model is available as an open-access tool and allows users to explore various dimensions of a sustainable diet.

The team are actively expanding the model to other countries, including the Netherlands and Denmark, and its open-access nature will allow independent dietary sustainability research through optimisation.



The KAMA team at the Adaptation Futures 2025 Conference in Ōtautahi, Christchurch, October 2025.

KAMA

The Kai anamata mō Aotearoa (KAMA) project is a collaboration between the Riddet Institute and iwi group Wakatū Incorporation. It is a five-year, \$10M MBIE-funded programme, and builds on the DELTA Model®, a world-leading global food system model.

KAMA explores future food system scenarios and impacts in New Zealand grounded in mātauranga Māori (Māori knowledge systems) and practical application. The programme's modelling team, which also includes researchers from Fonterra, Bioeconomy Science Institute, the University of Canterbury, and Lincoln University, aims to offer practical solutions for a more sustainable food sector.

This year, Dr Nick Smith published a report summarising the outcomes of two KAMA stakeholder engagement

workshops held in 2024. The report highlights key insights into the challenges, scenarios, and potential measures for improving Aotearoa's food system.

KAMA team members also gave a panel session at the Adaptation Futures 2025 Conference in Christchurch, bringing together practitioners, policymakers, and researchers from across the world.

A significant milestone in 2025 was the special harvest at Te Māra o Puanga Kairau on Wakatū-owned land in June.

The team cultivated nine varieties of kūmara and six varieties of taewa (Māori potato).





Plant-Based Food Ingredients

A Systems Approach to Sustainable Design

This five-year MBIE and industry-supported Plant-based Food Ingredients programme is validating new models of food processing as a way to produce nutritious, sustainable, high-performing ingredients from local crops.

Led by the Bioeconomy Science Institute (BSI), the programme is a collaboration with the Riddet Institute, BSI, Massey University, NZIER, and CSIRO (Australia).

In 2025, the Riddet Institute team, led by Associate Professor Alejandra Acevedo-Fani, focused on defining functionality in plant-based ingredients. Peas, oats, and hempseed were chosen as exemplar plants for their protein value, suitability to New Zealand

conditions, and relevance to global food systems. These ingredients are usually utilised as concentrates or isolates in plant-based foods.

The team collected a library of commercial pea and oat ingredients and developed a toolbox of analytical techniques to investigate the materials across multiple length scales. These provide correlated insights into ingredients at the molecular, meso, and macro-scale

that together describe what drives ingredient functionality in foods.

The research found that commercial products exhibit a wide range of properties despite similarities in composition labelling.

The project is continuing to develop novel and sustainable designs for processing peas, oats, and hempseed to optimise these ingredients.



RIDDET INSTITUTE PROTEOS CONTINUES WITH PROTEOS

Distinguished Professor Paul Moughan and Dr Suzanne Hodgkinson lead Proteos, an international collaborative research team.

The aim of the Proteos programme is to establish a global database of foods based on their protein quality.

The challenge to provide a burgeoning global population with sufficient high-quality dietary protein drives the need to better understand the nutritional value and physiological roles of dietary protein.

The first phase of the Proteos programme to establish international protocols for the DIAAS method was completed in 2019. The second phase

to establish a database of a wider range of dietary protein sources, including those in developing regions, was completed in 2023.

Since then, there have been several activities and events aimed at promulgating the results and their implications, including the Dietary Protein for Global Human Health conference in Orlando in May 2025, and the special issue journal Dietary Protein for Human Health from Frontiers in Nutrition (see page 35).

Dr Suzanne Hodgkinson

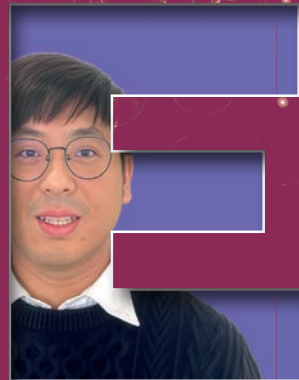


Dist. Prof Paul Moughan



PROGRAMMES

OUR



The Riddet Institute seeks to celebrate diversity at all levels of our organisation.

We are committed to the proactive development of staff and students in the Institute and the inclusion of people from under-represented groups.

We consider that a culture embracing equity and diversity is intrinsic to better science and innovation.

RIDDET INSTITUTE DIRECTOR CONFERRED WITH CNZM



Distinguished Professor Harjinder Singh and Governor General Dame Cindy Kiro at Government House in Wellington on Tuesday September 16.

Pioneering Massey University food scientist Harjinder Singh received his New Zealand Order of Merit honour at a special investiture ceremony in Wellington in September.

Distinguished Professor Singh was made a Companion of the New Zealand Order of Merit (CNZM) for services to food science in the 2025 New Year's Honours list.

At the ceremony the citation reading highlighted Dist. Prof Singh's outstanding contributions to food science and technology over a career spanning more than 30 years.

"He has investigated structure-function relationships in food colloids, providing new insights into molecular interactions in food systems and how they alter following food processing. His prolific publications have ranked him as Oceania's number one food scientist."

It particularly noted his research breakthroughs of significant economic and social importance.

"With his team he invented an encapsulation technology for omega-three fatty acids, which allows the incorporation of fish oil into foods at high levels.

"His FerriPro™ technology brings affordable iron nutrition to the developing world and has been commercialised by the Nestlé-Riddet institute partnership, earning significant royalties for Massey University and the Riddet Institute, of which he is Director."

The New Year's Honour is the latest of several awards Dist. Prof Singh has received, including last year's prestigious Pickering Medal awarded by the Royal Society Te Apārangi, and a Lifetime Achievement Award bestowed by the international Institute of Food Technologists, also in 2024.

Dist. Prof Singh stepped down as Director of the Riddet Institute in December, moving to a new role in 2026 as Fellow Laureate concentrating on research leadership.

In a statement, Massey University Provost Professor Giselle Byrnes acknowledged Dist. Prof Singh's outstanding achievements to food science and food nutrition research, his immense and ongoing contributions to postgraduate supervision, and his excellent leadership of the Riddet Institute, Centre of Research Excellence, since 2008.

FAREWELL TO PROFESSOR ROY

In 2025, we said a very sad farewell to Professor Nicole Roy, an integral part of the Riddet Institute community since 2008. Prof Roy passed away after a short illness.

Dr Roy was a Professor in Human Nutrition at the University of Otago, and a Principal Investigator in the Riddet Institute's CoRE programme in her specialist areas of gastrointestinal physiology and the effect of food on gut health.

Prof Roy supervised many doctoral researchers at the Riddet Institute and led projects in nutrition and the intestinal microbiome.



Her ground-breaking research on the microbiome and gut health has been the subject of several television documentaries and news articles about her human clinical studies. She dedicated much of her career to improving intestinal health and finding the cause of disease. She also had various science leadership roles in several research programmes including theme leader in the High-Value Nutrition Science Challenge.

GRADUATE DESTINATIONS

**MARIERO
GAWAT**



S&T Fellow, Department of Science and Technology, Philippines.

Dr Mariero Gawat completed her Bachelor and Master of Science in Food Science and Technology in the Philippines, and was awarded the New Zealand Manaaki Scholarship to pursue her PhD in Food Technology at Massey University. Her PhD focused on the impact of processing methods on meat protein digestibility, research that sparked a strong interest in food structure and digestion.

Dr Gawat is now a Science and Technology Fellow at the Department of Science and Technology, Philippines, where she leads the Food Innovation Programme in the Caraga Region. Her academic experience at the Riddet Institute exposed her to advanced food processing techniques and significantly broadened her understanding of the relationship between food structure, processing, and health.

In her current role, Dr Gawat bridges academia, government, and local industry. She works closely with researchers and food innovators providing technical inputs on food product development, envisioning and contributing to a future for Philippine food research.

**ANA
MARSHALL**



Animal Breeding Scientist, Focus Genetics, New Zealand

Dr Ana Marshall's PhD at the Riddet Institute investigated the genetic basis of the cheese-making ability of sheep milk. Dr Marshall holds a Bachelor of Veterinary Science from the University of Brasilia, Brazil, and a Master of Science (animal breeding and genetics) from Massey University. Her diverse academic background enabled her to integrate animal genetics with food technology, and link on-farm selection to product quality.

Dr Marshall's PhD evaluated detailed milk composition, protein profiles, and cheese-making traits of milk from individual animals. Her research also involved statistical analyses including estimation of heritability of traits, and genome-wide association studies, to identify genes associated with milk production and milk quality traits.

Dr Marshall now works as an Animal Breeding Scientist at Focus Genetics, New Zealand, contributing to breeding programmes for sheep, deer, and cattle. Her background supports selection strategies that enhance meat eating quality, and overall product value within the terminal breeding programmes.

**AYLIN
ŞEN**



Postdoctoral Fellow, Miruku, New Zealand

Dr Aylin Şen holds a Bachelor of Science in Food Engineering from the Middle East Technical University and a master's degree in food technology from Wageningen University and Research. She completed her PhD at the Riddet Institute, investigating the extraction and functionality of coconut-derived oil body materials and proteins. This work strengthened her expertise in protein chemistry, emulsions, and advanced analytical techniques, and supported her transition into food innovation and product development.

Dr Şen is currently a Postdoctoral Fellow at the New Zealand-based start-up company Miruku, which works closely with the Riddet Institute. She contributes to the development of plant-based dairy alternatives through process optimisation and ingredient functionality. Her work focuses on oil bodies from oil crops, food formulation design, and supporting scale-up from laboratory to pilot level.

**GEOFF
ANG**



Technologist, Tatua Dairy, New Zealand

Dr Geoff Ang is now a Technologist at Tatua Dairy Company, focusing on new protein-based product development. His role involves developing and optimising formulations, supporting scale-up from lab to production, and ensuring products meet quality and regulatory standards. He works closely with cross-functional teams to translate technical insights into commercially viable products, particularly in applications involving proteins and functional ingredients.

His time at the Riddet Institute provided a strong foundation in both fundamental and applied food science. Through his PhD, he developed expertise in lipid functionality, emulsions, and advanced analytical techniques, alongside strong problem-solving skills. The collaborative and interdisciplinary environment also strengthened his ability to communicate complex science clearly and work across teams. This experience has been instrumental in enabling him to bridge the gap between research and industry and contribute effectively to innovation in his current role.

SUMMER STUDENTS DEVOUR FOOD RESEARCH

Perception of how sweet food is can vary wildly among individuals, which could be an important factor in product taste testing in sensory food research.

This and many other scientific findings were uncovered by student interns in the 2025–26 summer semester in Palmerston North in February.

Eight students had a taste of food research at the Riddet Institute in Palmerston North over the summer. Four others worked at the University of Otago.

The students were all using the summer break from their university degree studies to take part in the programme. The students enjoyed a wide array of projects, including those about sensory studies, digestibility, modelling food data, and how to engage higher numbers of Māori research participants.

In Palmerston North, Arlo Rea's research used eye-tracking technology to evaluate sensory science participants when undertaking a food tasting experiment. The eye-tracking glasses calculated eye movements and indicated when particular words in a food description chart caught the attention of participants. This adds another tool to sensory science response data.

Francesca Armstrong was another investigating the senses. Her research, noted above, tried to understand how individual perceptions of sweetness affected whipped cream acceptability with consumer/participants. Another angle on consumer studies was the focus of Psychology major Alex Robbins, who looked at strategies to attract more Māori participants to consumer studies, a demographic currently underrepresented.

Enhancing the nutrition of plant-based foods and emerging hybrid foods is a growing area of scientific research. Students Georgia Perilli and Laine Mefiposeta-Satano were involved in some experiments with alternative flours to make bread, scones, pasta and biscuits while increasing the nutritional value of the foods. Amy Trieu was also researching hybrid foods, this time the digestion of plant-based high-protein drinks.

Engineering student Fletcher Lochhead applied engineering principles to biological systems in his research on gastric juice effects on breaking down foods. Dallas Belbin focused on a mathematical model for building food production data, adding more foods to a growing database.

The summer students receive a scholarship to do their research, and often significantly



01: Massey University summer students 2025–2026, from left, Fletcher Lochhead, Alex Robbins, Arlo Rea, Frankie Armstrong, Lanie Satno, Dallas Bebin, Amy Trieu and Georgia Perilli.

02: Sophie Lewis at the University of Otago.

03: Otago summer students, from left, Maia Hetutu, and Tūpou Kaufononga.

contribute to a wider research programme. Four of the eight students were supported by Massey University, four by the University of Otago, and four were supported by Pūhoro STEM Academy.

*** IN PALMERSTON NORTH:** Francesca Armstrong studied individual variation in sweetness perception and cream acceptability in ecologically valid contexts. Dallas Belbin (*Ngāpuhi, Ngāti Wai, Tainui*) added new foods to a mathematical model of food systems. Fletcher Lochhead (*Ngāti Mutunga*) researched the modelling of food digestion. Lainétusitala (Laine) Mefiposeta-Satano (*Taranaki, Te Atiawa*) studied the development of alternative dairy products using pulses. Georgia Perilli worked on a project developing a novel plant-based food product. Arlo Rea developed eye tracking to understand consumer perception of foods.

Alex Robbins (*Ngāti Raukawa, Rangitāne*) considered strategies to attract more Māori to participate in consumer studies. Amy Trieu worked on *in vitro* digestion of plant-based protein-rich drinks using a dynamic human gastric simulator.

*** IN DUNEDIN:** Maia Hetutu (*Ngāti Ranginui, Ngāti Tūwharetoa, Niue*) looked at AI literacy amongst undergraduate Physical Education, Sport and Exercise Science students. Tūpou Kaufononga (*Tonga*) researched sleep disturbances following sports-related concussion. Sophie Lewis (*Ngāti Porou*) worked on the science of milk supply contributing to the Mama and Baby Breastfeeding Study research team. Jorjia Vanisi (*Tonga, Samoa*) conducted a survey of food insecurity in the environment of rising food prices putting food choices under pressure.

POSTGRADUATE SUCCESS

Riddet Institute communicators win at the NZ Institute of Food Science & Technology (NZIFST) Conference 2025



Three-minute pitch winners, from left: Steffi Thomas (University of Otago), Nyasha Makaza (Riddet Institute), Esra El Shall (NZIFST President), Sheba Culas (Riddet Institute).

- 1 Norma Cecille Bagarinao (University of Otago): first place, Student Poster Awards.
- 2 Nyasha Makaza (Massey University): second equal, Student Poster Awards; second place, Three-minute Pitch Competition.
- 3 Sheba Culas (Massey University): third place, Three-minute Pitch Competition.



NZIFST Poster Competition] Poster competition winners, from left: Norma Cecille Bagarinao (Riddet Institute), Esra El Shall (NZIFST President), Nyasha Makaza (Riddet Institute), Thi-Van Nguyen (Massey University).

Research leads to new job impacting NZ child nutrition

Doctoral researcher Asher Regan has started a new role, alongside his PhD studies at the Riddet Institute, as Development Chef for the Healthy School Lunches programme at the Ministry of Education. Asher creates recipes and resources for schools with the goal of making healthy, tasty, and affordable meals that are also easy to make. His PhD explores how Māori chefs can influence the future discourse of food in Aotearoa and improve Māori wellbeing. This research has given him insights into kai Māori and te ao Māori which enables him to tailor his recipes and advice to be culturally appropriate for schools.

Four International Dairy Federation wins in four years

Dr Mengxiao Yang received second place in the international Dairy Federation (IDF) Professor Pavel Jelen Early Career Scientist Prize in 2025.

Dr Yang's achievement brings the Riddet Institute's tally to four wins in four years in this prestigious international award. Dr Yang won the prize from research she did during her PhD at the Riddet Institute on "Milk Protein-Enzyme Interactions: Mechanistic Insights into Gastric Digestion and Implications for Dairy Processing".

She presented her research at an awards ceremony in Chile in October and received an honorarium of €200.

The Early Career Scientist Prize honours outstanding early-career scientists. Eligible candidates include graduate and postgraduate students who have completed their highest degree within the past three years. The prize celebrates innovation and scientific excellence.

Mengxiao Yang



Researchers make their university Dean's Lists

Nicholas Horlacher (University of Otago) and Summer Wright (Massey University) both made their respective universities' Dean's Lists for Excellent Theses. Nicholas' research focused on "Pulsed electric field technology to pasteurise plant-based dairy alternatives and enhance protein quality." Summer's thesis was on "Place, Provenance, Protection: Alignments, Challenges, and Opportunities for Māori Future Foods."

Summer Wright and Nicholas Horlacher



Novel hybrid cheese talk wins communication competition

Di Lu was named the 2025 Student Communicator at the Riddet Institute Colloquium, impressing judges with her succinct research on using a novel combination of confocal Raman spectroscopy with machine learning to investigate the structure of hybrid plant-milk protein cheese.

Runner-up was Bi Xue Patricia Soh, showcasing her research on improving the protein quality of vegan diets using innovative data modelling tools. Crisline Alhambra received a special mention for her presentation comparing the different gastric emptying rates of specific protein-carbohydrate combinations.

In the poster competition, postgraduates were judged on their graphical abstract, poster, and 2-minute oral presentation. Vitor Geniselli Da Silva took out this year's competition, with Manfred Goh Hongyi coming second.

Di Lu also had further success in 2025, garnering an opportunity to conduct infrared (IR) spectroscopy experiments at the Australian Synchrotron, operated by Australia's Nuclear Science and Technology Organisation (ANSTO). Here she explored protein-protein interactions and further developed her research. Di's thesis focuses on macrostructural design rules and requirements for plant protein-based food products. An article based on Di's trials at ANSTO was published in the *Food Structure* journal in January 2026.

Ansley Te Hiwi Student Communicator 2025 winner Di Lu (centre) with her PhD supervisors, Prof Aiqian Ye and Assoc Prof Alejandra Acevedo-Fani.



AWARDS AND ACHIEVEMENTS



Our investigators are high-achieving researchers in their fields. The following investigators, students, and other personnel gained recognition during 2025.

NAME	AWARD
Dr Alejandra Acevedo-Fani	Promoted to Associate Professor (Massey University), 1 January 2026.
Dr Mike Boland	J C Andrews Hall of Fame Award at the NZIFST conference, 24- 26 June 2025.
Prof Phil Bremer	2025 Significant Contribution to Food Safety Award at the NZIFST Conference.
Prof Leo Cheng	MacDiarmid Medal for outstanding scientific research that demonstrates the potential for application to human benefit.
Dr Sylvia Chungchunlam	Appointed the co-chair of the ILSI SEA Region Working Group on Protein Needs and Sustainable Solutions for SUB-COMMITTEE 2: Sustainable Protein Sources Working Group.
Dr Sylvia Chungchunlam	Invited to join the newly established ILSI SEA Region Working Group on Protein Needs and Sustainable Solutions in ASEAN. This initiative aims to assess protein intakes, sources, and their health and environmental impacts across Southeast Asia, with the goal of developing a future roadmap for sustainable and nutritious diets in the region.
Dr Stefan Clerens	Appointed to the Steering Committee for E Tipu 2026.
Prof Cathryn Conlon	Supervisor Research Medal from Massey University.
Prof Renwick Dobson	Fellow of the Royal Society Te Apārangi (March 2025) for his advances in molecular interactions critical to biological function.
Dr Amanda Dupas de Matos	Invited to be part of the organising committee for the Pangborn Sensory Symposium 2027 in Merida, Mexico.
Dr Amanda Dupas de Matos	Invited to serve as President of the Jury Panel for the “Cutò” Award, as part of the International Festival of Artisan Ice Cream (Sherbeth) in Palermo (Italy) in November, as an international expert in sensory science.
Dr Amanda Dupas de Matos	Appointed as the SFTNS (School of Food Technology and Natural Sciences) Emerging Researcher COS Representative.
Dr Amanda Dupas De Matos	Appointed as Committee Member of Brazilian Association of Technical Standards to support consensus feedback processes and translations of ISO standardisation, and the revision of ABNT-NBR-ISO5492-2017 (Sensory analysis – vocabulary) within the framework of the Special Study Committee on Sensory Analysis (ABNT/CEE-174).
Prof David Everett	Elected as President of the American Dairy Science Association and chairman of the board, starting 25 June 2025.
Dr Karl Fraser	Promoted to Principal Scientist at Bioeconomy Science Institute.
Prof Joanne Hort	Honoured as one of Aotearoa New Zealand’s Top 50 Most Influential & Inspiring Women in Food & Drink for 2026.

AWARDS AND ACHIEVEMENTS



NAME	AWARD
Prof Joanne Hort	Appointed to the Advisory Board of Nectar (Nectar.org), part of Food System Innovations, California, USA (A non-profit initiative of the climate philanthropy Food System Innovations who accelerate the protein transition with a focus on taste, Nectar is on a mission to accelerate the protein transition with taste).
Prof Joanne Hort	Appointed Associate Director of <i>Food Quality and Preference</i> Q1 journal (top Journal in Consumer Sensory science).
Prof Geoff Jameson	Charles Fleming Senior Scientist award by the Royal Society of NZ/Te Āparangi.
Dr Jennifer Miles-Chan	Promoted to Professor (University of Auckland), 1 January 2026
Dist. Prof Paul Moughan	Companion of the NZ Order of Merit in the 2026 New Years Honours for services to science.
Prof Indrawati Oey	Appointed a councillor of the International Society for Precision Health (ISPH). She will serve three terms from October 2025 – October 2028.
Dr Olivia Ogilvie	Named in the 40 under 40 list at the University of Auckland for Opo-Bio
Dr Ali Rashidinejad	Promoted to Associate Professor (Massey University), 1 January 2026.
Dr Ali Rashidinejad	Appointed as Editor-in-Chief for a new Journal, <i>AgriFood</i> (Wiley Publishers). Dr Rashidinejad was invited to visit China to attend editorial meetings and the official journal launch.
Dr Ali Rashidinejad	Appointed as Editorial Board Member for the journal <i>Food as Medicine</i> .
Assoc Prof Andrew Reynolds	Rowheath Trust Award and Carl Smith Medal at the University of Otago. It recognises the outstanding research performance of early career staff.
Prof Emeritus Elaine Rush (Riddet Fellow)	Appointed Guest Editor for a Special Issue of the <i>Journal of the Royal Society of New Zealand</i> exploring both the obstacles and opportunities to transform the food system from farm to fork (included contributions from Riddet Institute researchers).
Dist. Prof Harjinder Singh	Made a Companion of the New Zealand Order of Merit in recognition of his services to food science in the New Year Honours.
Dist. Prof Harjinder Singh	Invited to join Sigma Xi, The Scientific Research Honor Society (May 2025), in recognition of Harjinder's scholarly achievements and contributions to the advancement of knowledge in his science field.
Dist. Prof Harjinder Singh	Attended an Investiture Ceremony at Government House on 16 September 2025 to receive Companion of the New Zealand Order of Merit (for services to food science), presented by the Governor General Dame Cindy Kiro.
Professor Lisa Te Morenga	Tū Rangatira Mō te Ora Award 2025 from the Public Health Association of New Zealand (November 2025).
Dr Mengxiao Yang	Came second in the IDF Professor Pavel Jelen Early Career Scientist Prize, 2025 for her thesis: "Milk Protein-Enzyme Interactions: Mechanistic Insights into Gastric Digestion and Implications for Dairy Processing". She won an honorarium of €200.



NAME	AWARD
Postgraduate Researcher Achievements	
Norma Cecille Bagarinao	Won first place for the Student Poster Awards at the NZIFST Conference.
Sheba Culas	Won third place for the 3-minute pitch competition at the NZIFST Conference.
Vitor Geniselli Da Silva	Was awarded a Massey Doctoral Travel Grant worth \$2,000 to give an oral presentation at the NuGo week 25 in September in Ireland.
Nicholas Horlacher	Placed on the Dean's list of Exceptional Theses at Otago University.
Di Lu	Made an application for Australian synchrotron beamtime, "Investigating the spatial and microstructural distribution of plant protein, rennet casein and lipid in hybrid processed cheese products using synchrotron macro ATR-FTIR microspectroscopy". Out of many applications, she was selected for the opportunity to conduct infrared (IR) spectroscopy experiments at the Australian Synchrotron, operated by ANSTO, to explore protein-protein interactions and further develop her research (February 2025).
Nyasha Makaza	Won second equal place for the Student Poster Awards at the NZIFST Conference.
Nyasha Makaza	Won second place for the 3-minute pitch competition at the NZIFST Conference.
Salanieta Naliva	Won an excellence award at the Pasifika Postgraduate Research Conference (Massey University) at the end of October. The \$500 prize was sponsored by Ala Le Manuia, a Pacific-led social enterprise and community organisation dedicated to improving the health and wellbeing of Pacific peoples in Aotearoa New Zealand.
Jervee Punzalan	Won best oral presentation at the 20th Asian Chemical Congress June 2025.
Jervee Punzalan	Elected OPTICA-Otago student representative in March and took part in the Day of Light SPIE sponsored event at the Tuhura Otago Museum.
Jervee Punzalan	Won a speaker prize at the Dodd Walls Symposium in Wellington, 27 November 2025.
Callum Tatton	Won the People's Choice Award at the School of Veterinary Science Postgraduate Symposium in December for his presentation "Isolation of sphingomyelin from milk via re-usable Functionalized Bioparticles".
Summer Wright	Placed on the Dean's list of Exceptional Theses at Massey University.

KEYNOTE AND INVITED PRESENTATIONS

Investigators gave several keynote and invited presentations at international and domestic conferences and events, as follows:

NAME	TITLE	EVENT	VENUE/DATE
Prof Joanne Hort	Measuring cross-cultural differences: A current perspective. Chair for the following sessions: → The power of context: how to better reflect consumer experience in the sensory lab? → Developing a Novel Sensory and Consumer Tool to Support Business Success in the Dairy Industry	NZOZ Sensory Symposium Conference	19-21 February, Palmerston North
Dr Sylvia Chungchunlam	The role of beef for the affordable and adequate provision of bioavailable nutrients	2nd International Online Symposium for Meat Chemistry, Processing and Nutrition	20-21 February (Online)
Assoc Prof Jennifer Miles-Chan	Host & Convenor	12th International Symposium on In Vivo Body Composition Studies	20-22 February 2025, Auckland
Prof Joanne Hort	Why we might be arguing over the taste of wine at dinner?	Grape Day	8 April, Oregon, USA
Prof Joanne Hort	Tasting notes	Lactanol Ethanol Day	8 May 2025, Auckland
Prof Munish Puri	The future of cellular agriculture	Cellular Agriculture Symposium	9 April, Nelson
Dist. Prof Paul Moughan	What is the role of dairy in feeding the world?	Annual GDP-IMP meeting	27-29 April, Melbourne, Australia
Dist. Prof Paul Moughan	Protein quality and sustainable food systems	Canadian Nutrition Society (CNS) 2025 Annual Conference	8-10 May, Montreal, Quebec, Canada
Prof David Everett	The structural matrix of milk determines the bioaccessibility of nutrients	9th International Symposium on Dairy Cow Nutrition and Milk Quality	9-11 May, Beijing, China
Prof Joanne Hort	Whenua haumanu: Nurturing the land, unlocking its potential.	E Tipu, The New Zealand Future Food and Fibre Summit	26-28 May, Palmerston North
Dist. Prof Paul Moughan	Protein quality: Fundamentals of DIAAS	Nutrition 2025 (ASN Meeting)	31 May-3 June, Orlando, Florida, USA
Prof Joanne Hort	Considering cross-cultural differences in sensory and consumer science	A*STAR Industry Talk	13 June 2025, Singapore
Prof Joanne Hort	Consumer dimensions of future foods	Inaugural International Future Foods Congress	16-18 June, Singapore
Prof David Everett	Adhesion of probiotic cells to the surface of milk fat globules	American Dairy Science Association Annual Meeting	22-25 June, Kentucky, USA
Dr Andrew Fletcher	Nourishing an ageing world	NZIFST Conference	24-26 June, Palmerston North
Dist. Prof Paul Moughan	Protein quality and sustainable food systems	2nd U.S. Dairy Nutrition Conference	16-17 July, Bangkok, Thailand
Assoc Prof Jennifer Miles-Chan	The impact of exogenous sex hormones on energy metabolism & appetite: myths, misogyny, and myriad opportunities	2nd Energy Metabolism & Appetite (EMA) Network Symposium: Dietary, physiological and sensory insights in energy metabolism and appetite control – A multidisciplinary symposium to explore cutting-edge research and innovation.	18-20 August, Leeds, UK
Dist. Prof Paul Moughan	→ Chair of session: Diet optimisation to nourish a healthy, sustainable world → Protein Quality and Sustainability – through the lens of Dairy	IUNS-ICN 2025 International Congress of Nutrition	24-29 August, Paris, France
Dr Barbara Burlingame	→ The power of nutrition in bridging science and policy for sustainable food systems transformation → The future of nutrition recommendations → A rights-based perspective on a Mediterranean Diet code of conduct. → Global food sustainability: the protein dilemma. → Special lecture: Saving the planet with nutrition science. → Nutrition is a critical driver for science-policy convergence in food systems transformations. → Ultra processed food vs Indigenous Peoples' food systems.	IUNS-ICN 2025 International Congress of Nutrition	24-29 August, Paris, France
Dr Nick Smith	→ Diet optimisation with the iOTA model for advancing the transition toward more sustainable diets and food systems → Co-chair of session: Unique challenges and opportunities for sustainable diets and food systems in Oceania → Sustainable diets and food systems in New Zealand	IUNS-ICN 2025 International Congress of Nutrition	24-29 August, Paris, France
Dist. Prof Paul Moughan	→ The sustainability of animal production	International Food Information Council (IFIC) Conference	13-17 October, Bangkok, Thailand
Assoc Prof Jennifer Miles-Chan	→ Organising committee	RACMEM 2025 (Recent Advances and Controversies in the Measurement of Energy Metabolism)	13-17 October 2025, Shenzhen, China
Dr Barbara Burlingame	→ Impacts of ultra processed foods on Indigenous peoples. → Indigenous peoples' food systems and genetic resources pathways.	Third Session of the Global-Hub on Indigenous Peoples' Food and Knowledge Systems	16 October 2025, Rome, Italy
Assoc Prof Alejandra Acevedo-Fani	Nature-assembled structures from oilseeds for the next generation of ingredients: A case study of hempseed	11th International Symposium on Delivery of Functionality in Complex Food Systems	5-7 November, Santiago, Chile
Prof David Everett	Structural nutrition: Digestibility and bioavailability of micronutrients in milk and dairy products	Food Science Frontier Research Conference	7 November, Zhejiang Gongshang University in Hangzhou, China
Dr Amanda Dupas de Matos	Information and awareness of the gelato contemporary	Sherbeth - International Festival of Artisan Ice Cream	7-10 November, Palermo, Italy

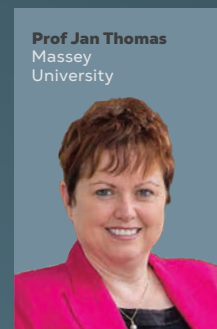
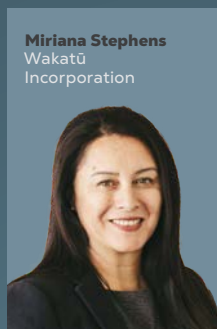
Prof David Everett	Session chair for Topic 1: Food structure characterisation	8th International Food Structure, Digestion and Health Conference	17-20 November, Melbourne, Australia
Prof Gail Bornhorst	Classifying food digestion behaviour: Links between food structure and breakdown	8th International Food Structure, Digestion and Health Conference	17-20 November, Melbourne, Australia
Dr Barbara Burlingame	Food and food systems rights' violations in conflict zones	Annual International Humanitarian Law Seminar	28 November 2025, Wellington
Dr Dulantha Ulluwishewa	Validating foods for healthy cognitive ageing – a gut-brain axis cell model approach	Symposium of Emerging Technologies and Dairy Innovation	22 December, Shanghai, China

OTHER ORAL PRESENTATIONS

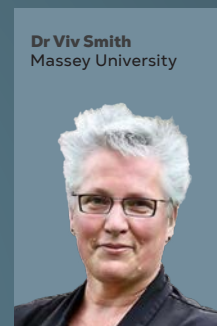
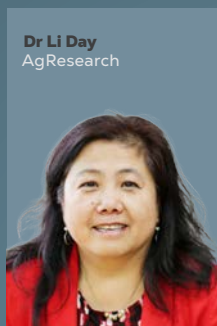
NAME	TITLE	EVENT	VENUE/DATE
Dr Mahya Tavan	The iOTA model	Agriculture, Nutrition, and Health Academy	22 January 2025, Online
Dr Amanda Dupas de Matos	Transitioning to a plant-based diet: Understanding consumer perception of plant-based milk alternatives in a realistic meal context	NZOZ Sensory Symposium Conference	19-21 February, Palmerston North
Dr Simone Poggesi	Understanding consumers to increase product success: The impact of context and segmentation on sensory and emotional responses	NZOZ Sensory Symposium Conference	19-21 February, Palmerston North
Jennifer Wagner (co-authors: Dr Simone Poggesi, Robyn Maggs & Prof Joanne Hort)	Sounds about right: Testing the effect of emotional music on JAR and speeded consumer responses to chocolate	NZOZ Sensory Symposium Conference	19-21 February, Palmerston North
Ai Ting Goh	Meat the Future: Unpacking attitudes toward plant-based proteins across cultures	NZOZ Sensory Symposium Conference	19-21 February, Palmerston North
Stephanie McLeod	No food for thought? Investigating effects of intermittent fasting on cognitive performance in women	NZOZ Sensory Symposium Conference	19-21 February, Palmerston North
Summer Rangimaarie Wright	Jars and ladders: Unwrapping cross-cultural critical consumer perceptions of Māori provenance and environmental messaging on food packaging using a laddering approach	NZOZ Sensory Symposium Conference	19-21 February, Palmerston North
Dr Suzanne Hodgkinson	Transitioning to a plant-based diet: Protein quality	International Dairy Federation Health and Nutrition Symposium	20 May, Online
Qayyum Shehzad	Interfacial rheology of plant proteins	99th ACS Colloid & Surface Science Symposium and the 18th International Association of Colloid and Interface Scientists Conference	22-26 June, University of Alberta, Canada
Jervee Punzalan	From zap to map: how vibrational spectroscopy characterizes PEF-induced changes and rapidly predicts protein content in semi-refined flaxseed extract	20th Asian Chemical Congress	23-27 June 2025, Bangkok, Thailand
Prof Phil Bremer	→ Global megatrends impacting on food safety → The future: Challenges and opportunities in food safety (Panel) → Let the consumer beware: Who is responsible for food safety? (Kim Hill Panel)	NZIFST Conference	24-26 June, Palmerston North
Prof Joanne Hort	Smarter sensory: Digital technologies herald better data for product success	NZIFST Conference	24-26 June, Palmerston North
Prof Jaspreet Singh	Hybrid meats: Next generation of plant-based and hybrid (plant-animal) sustainable food analogues	NZIFST Conference	24-26 June, Palmerston North
Prof Skelte Anema	Modern vs. Shackleton's milk powder: A century of change	NZIFST Conference	24-26 June, Palmerston North
Dr Gert-Jan Moggré	Building a library of commercial pea- and oat-based ingredients: A benchmarking tool	NZIFST Conference	24-26 June, Palmerston North
Dr Jocelyn Eason	Let the consumer beware: Who is responsible for food safety? (Kim Hill Panel)	NZIFST Conference	24-26 June, Palmerston North
Dr Karl Fraser	Molecular sensomics: Blending fundamental flavour chemistry with the future	NZIFST Conference	24-26 June, Palmerston North
Dr Marlon dos Reis	Does generative AI have a role in food science?	NZIFST Conference	24-26 June, Palmerston North
Dr Thomas Do	Building a library of commercial pea- and oat-based ingredients: A benchmarking tool	NZIFST Conference	24-26 June, Palmerston North
Catarina Ferreira	Oat proteins: A sustainable food ingredient with functional potential	NZIFST Conference	24-26 June, Palmerston North
Summer Rangimaarie Wright	Jars and ladders: Unwrapping cross-cultural consumer perceptions of Māori place branding	NZIFST Conference	24-26 June, Palmerston North
Assoc Prof Mei Peng	The role of multisensory mental imagery in shaping eating behaviour	16th Pangborn Sensory Science Symposium	17-21 August, Philadelphia, USA
Dr Amanda Dupas de Matos	→ Exploring emotional response and sensory interactions to composite beverages and menu information: a case study of verjuice in a mojito mocktail → Utilising a contextual approach to investigate consumer perception of plant-based milk alternatives in a realistic meal scenario (co-authors Sara Jaeger, Joanne Hort (Core, project 2.3))	16th Pangborn Sensory Science Symposium	17-21 August, Philadelphia, USA
Dr Simone Poggesi (co-author Prof Joanne Hort)	The scent of change: How congruent ambient scents in virtual environments affects 'ice cream' tasting	16th Pangborn Sensory Science Symposium	17-21 August, Philadelphia, USA
Jennifer Wagner (co-authors: Dr Simone Poggesi, Robyn Maggs & Prof Joanne Hort)	When size matters: The impact of portion size on consumer responses to products tested at home	16th Pangborn Sensory Science Symposium	17-21 August, Philadelphia, USA
Ai Ting Goh	Meat the future: Unpacking attitudes toward plant-based proteins across cultures	16th Pangborn Sensory Science Symposium	17-21 August, Philadelphia, USA
Yunfan Mo	The relationship between chemosensory perception and macronutrient choices based on a female cohort study	16th Pangborn Sensory Science Symposium	17-21 August, Philadelphia, USA
Dr Mahya Tavan	Environmental impact and price of nutrient adequate diets: Insights from optimisation modelling using the iOTA Model®	IUNS-ICN 2025 International Congress of Nutrition	24-29 August, Paris, France

Dr Sylvia Chungchun Lam	→ The respective roles of animal- and plant-sourced foods for sustainable lowest-cost nutrient security in developing low- and middle-income countries → The role of beef for the affordable and adequate provision of bioavailable nutrients in sustainable diets throughout the lifespan	IUNS-ICN 2025 International Congress of Nutrition	24-29 August, Paris, France
Patricia Soh	Evaluating protein intake and quality in New Zealand vegans: Insights from temporal patterns and dietary clusters	IUNS-ICN 2025 International Congress of Nutrition	24-29 August, Paris, France
Runji Zhao	Multimodal sensors integration in robotic mastication simulator for comprehensive food texture analysis	31st Mechatronics and Machine Vision in Practice (M2VIP) Conference	29 August, Bonifacio Global City, Philippines
Vitor Geniselli da Silva	To model or not to model? Lessons on using an in silico-in vitro approach to identify foods that support the infant colonic microbiota	NuGo week 2025 conference	22-25 September, Dublin, Ireland
Dr Thomas Do	Plant-based food ingredients: A systems approach to sustainable design	FoodHQ October Protein Connect Forum	9 October, Palmerston North
Dr Rajesh Sathyamoorthy	Synthetic biology for future proteins	FoodHQ October Protein Connect Forum	9 October, Palmerston North
Assoc Prof Lovedeep Kaur	Processing and formulation strategies to enhance nutritional quality across protein systems	FoodHQ October Protein Connect Forum	9 October, Palmerston North
Di Lu	Distinguishing plant and milk proteins and their interactions in hybrid cheese using confocal Raman microscopy with machine learning	4th Food Chemistry Conference	14-16 October, Glasgow, UK
Prof Skelte Anema	Novel cross-linking of milk proteins using modified sugars	14th NIZO Dairy Conference: Innovations in Dairy Ingredients	14-17 October, Papendal, The Netherlands
Salanieta Naliva	Key influencers of nutrition risk in older Fijian iTaukei	Pasifika Postgraduate Research Conference	30-31 October, Massey University
Assoc Prof Ali Rashidinejad	Rutin-casein composites for enhanced rutin delivery in dairy beverages: Bioaccessibility, cytotoxicity, absorption, and intestinal integrity	11th International Symposium on Delivery of Functionality in Complex Food Systems	5-7 November, Santiago, Chile
Dr Thomas Do	Dynamic in vitro digestion of hempseed proteins: Does the structure of native protein bodies matter?	11th International Symposium on Delivery of Functionality in Complex Food Systems	5-7 November, Santiago, Chile
Dr Rachel Bennie	Materials matter: How plant proteins shape satellite cell growth in cultivated meat	The International Scientific Conference on Cultured Meat (ISCCM)	9-11 November, Maastricht, the Netherlands
Prof Munish Puri	Precision fermentation of smart fats: Unlocking sustainable lipid ingredients for future foods	8th International Food Structure, Digestion and Health Conference	17-20 November, Melbourne, Australia
Prof Indrawati Oey	Use of pulsed electric field technology to modify the texture and digestibility of chickpea flour – based gels for people with dysphagia	8th International Food Structure, Digestion and Health Conference	17-20 November, Melbourne, Australia
Assoc Prof Alejandra Acevedo-Fani	Emulsifying performance and thermal stability of hemp-whey microparticulated protein in oil-in-water emulsion systems	8th International Food Structure, Digestion and Health Conference	17-20 November, Melbourne, Australia
Prof Mark Waterland	Raman spectroscopy meets food structure and digestion: The perfect match	8th International Food Structure, Digestion and Health Conference	17-20 November, Melbourne, Australia
Dr Juliana Leite	Investigating the digestion of carbohydrate- and protein-rich food combinations using a dynamic in vitro gastrointestinal digestion model	8th International Food Structure, Digestion and Health Conference	17-20 November, Melbourne, Australia
Dr Linda Nezbedova	Structural and physicochemical changes in human milk during in vitro dynamic infant gastric digestion	8th International Food Structure, Digestion and Health Conference	17-20 November, Melbourne, Australia
Dr Noha Nasef	Evidence-based food and nutrition strategies for better management of ulcerative colitis	8th International Food Structure, Digestion and Health Conference	17-20 November, Melbourne, Australia
Dr Sylvia Chungchun Lam	Comparative study of amino acid profile and protein quality of animal and plant protein isolates	8th International Food Structure, Digestion and Health Conference	17-20 November, Melbourne, Australia
Dr Thomas Do	Unravelling process – structure – function relationships in commercial oat protein ingredients	8th International Food Structure, Digestion and Health Conference	17-20 November, Melbourne, Australia
Dr Xinya Wang	How food structure modulates calcium release from food into the GI tract	8th International Food Structure, Digestion and Health Conference	17-20 November, Melbourne, Australia
Dr Natascha Stroebinger	Feeding mixed diets alters gastric digestion of protein from haloumi in growing pigs as an adult human model	8th International Food Structure, Digestion and Health Conference	17-20 November, Melbourne, Australia
Hao Cui	In vitro digestion behaviour and in vivo true ileal amino acid digestibility of high-moisture extruded meat analogues	8th International Food Structure, Digestion and Health Conference	17-20 November, Melbourne, Australia
Reza Vaseghi Bakhshayesh	Structural impact of cholesterol depletion and β -sitosterol substitution in the milk fat globule membrane	8th International Food Structure, Digestion and Health Conference	17-20 November, Melbourne, Australia
Sukanya Chakraborty	Mechanical and thermal processing of barley: In vitro insights into glycaemic control and microbiome research	8th International Food Structure, Digestion and Health Conference	17-20 November, Melbourne, Australia
Sheba Culas	Optimising cinnamon extraction and encapsulation for enhanced bioavailability	8th International Food Structure, Digestion and Health Conference	17-20 November, Melbourne, Australia
Prof Joanne Hort	Understanding cross-cultural differences in sensory perception	Japanese Society for Sensory Evaluation Annual Conference	23 November, Japan Women's University, Tokyo
Dr Noha Nasef	Evidence-based nutritional strategies as part of optimal management of ulcerative colitis in NZ	Joint Annual Scientific Meeting of the New Zealand Society of Gastroenterology (NZSG) Conference	26-28 November, Palmerston North
Jervée Punzalan	Spectroscopy for plant-based protein analysis	Dodd Walls Symposium	27 November, Wellington
Salanieta Naliva	Dietary intake of older adults in Fiji	NZ Association of Gerontology Conference	3-5 December, Dunedin

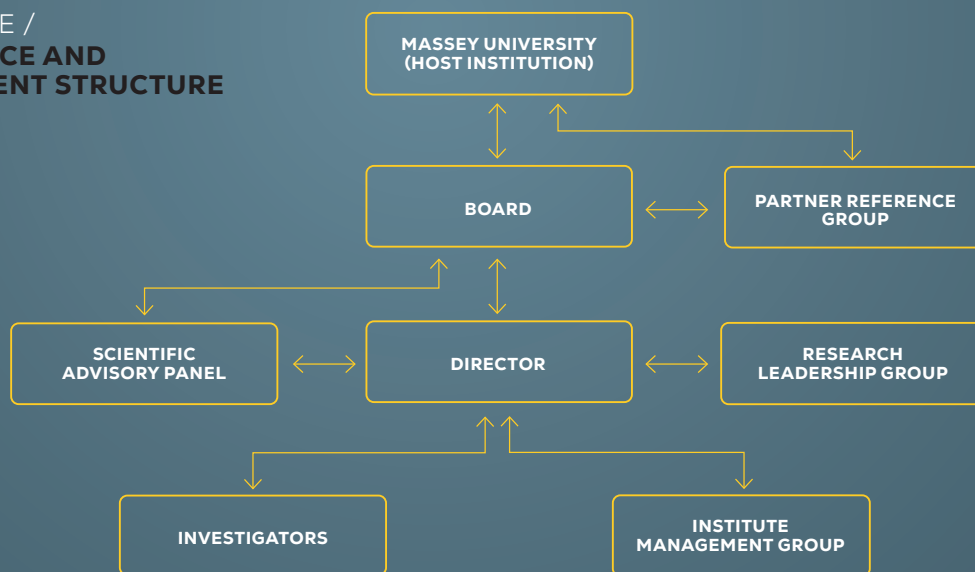
OUR PEOPLE / BOARD



OUR PEOPLE / PARTNER REFERENCE GROUP



OUR PEOPLE / GOVERNANCE AND MANAGEMENT STRUCTURE



OUR PEOPLE / SCIENTIFIC ADVISORY PANEL



Board

Prof Jim Metson
University of Auckland

Mark Piper
Plant & Food Research

**Rt. Hon. Sir
Lockwood Smith**
Independent Chair

Miriana Stephens
Wakatū Incorporation

Prof Jan Thomas
Massey University

Management & administration

Dr Amelia Barker¹
Communications Officer
(Digital)
Massey University

Hilde Celie
Events Coordinator
Massey University

Prof David Everett
Stakeholder Relationship
Manager
Massey University

Meka Faamanu Mapuilehua
Finance Administrator
Massey University

Michelle Heayns
PA to Director
Massey University

John Henley-King
Associate Director
Operations
Massey University

Prof Joanne Hort
Associate Director EDI
Massey University

Krishna Makwana
Communications Officer
(Digital)
Massey University

Dist. Prof Paul Moughan
Acting Director
Massey University

Terri Palmer
Office Manager
Massey University

Hannah Ramsay²
Business Manager
Massey University

Melanie Ruffell³
Stakeholder Relationship
Manager
Massey University

Wendy Shailer-Knight
Communications Officer
Massey University

Dist. Prof Harjinder Singh⁴
Director
Massey University

Deborah Stewart
Project Manager SNI
Massey University

Alex Wood
Administrator
Massey University

Scientific Advisory Panel

Prof José Miguel Aguilera
Pontificia Universidad
Católica de Chile

Prof Tracey McIntosh
University of Auckland,
Aotearoa

Prof Manny Noakes
ex-CSIRO, Australia

Prof Alastair Robertson
(Chair)
ex-CSIRO, Australia

Prof Oded Shoseyov
Hebrew University of
Jerusalem, Israel

Prof Rickey Yada
University of Alberta, Canada

Riddet Fellows⁵

Dr Mike Boland
Massey University

Prof John Bronlund
Fonterra

Prof David Cameron-Smith
Massey University

Prof Clive Davies
Massey University

Prof Dame Juliet Gerrard
University of Auckland

Prof Matt Golding
Fonterra

Dist. Prof Peter Hunter
University of Auckland

Dr John Monro
BSI Plant & Food Research

Prof Emer Elaine Rush
AUT

Prof Emer R. Paul Singh
University of California, Davis

Prof Emer Gerald Tannock
University of Otago

Prof Bob Wolfe
University of Arkansas for
Medical Sciences

Principal Investigators

Dr Alejandra Acevedo-Fani
Massey University

Prof Gail Bornhorst
University of California, Davis

Prof Leo Cheng
University of Auckland

Prof Jillian Cornish
University of Research

Prof Renwick Dobson
University of Canterbury

Prof David Everett
Massey University

Prof Manohar Garg
University of Newcastle,
Australia

Dr Pramod Gopal
BSI Plant & Food Research

Prof Joanne Hort
Massey University

Prof Lisa Houghton
University of Otago

Dr Sara Jaeger
Aarhus University

Prof Geoffrey Jameson
Massey University

Dr Evelynne Maes
BSI AgResearch

Prof Jim Mann
University of Otago

Prof Warren McNabb
Massey University

Dist. Prof Paul Moughan
Massey University

Prof Indrawati Oey
University of Otago

Prof Emily Parker
Victoria University of
Wellington

Prof Munish Puri
Massey University

Prof Siew-Young Quek
University of Auckland

Dr Andrew Reynolds
University of Otago

Prof Nicole Roy
University of Otago

Dist. Prof Harjinder Singh
Massey University

Prof Jaspreet Singh
Massey University

Dr Kevin Sutton
BSI Plant & Food Research

Prof Lisa Te Morenga
Massey University

Prof Mark Waterland
Massey University

Prof Peter Xu
University of Auckland

Prof Aiqian Ye
Massey University

Associate Investigators

Assoc Prof Eric Altermann
Massey University

Dr Skelte Anema
Fonterra

Dr Tim Angeli-Gordon
University of Auckland

Dr Matthew Barnett
BSI AgResearch

Prof Phil Bremer
University of Otago

Prof Hugh Campbell
University of Otago

Dr Stefan Clerens
BSI AgResearch

Prof Cath Conlon
Massey University

Assoc Prof Graham Eyres
University of Otago

Dr Bruno Fedrizzi
University of Auckland

Dr Meika Foster
Edible Research

Dr Karl Fraser
BSI AgResearch

Prof Keith Gordon
University of Otago

Dr Roger Harker
BSI Plant & Food Research

Prof Palatasa Havea
Massey University

Dr Suzanne Hodgkinson
Massey University

Assoc Prof Lovedeep Kaur
Massey University

Dr Esther Kim
BSI Plant & Food Research

Prof Marlana Kruger
Massey University

Dr Simon Loveday
CSIRO, Australia

Prof Duncan McGillivray
University of Auckland

Dr Marlon Martins dos Reis
BSI AgResearch

Dr Davide Mercadante
University of Auckland

**Assoc Prof Jennifer
Miles-Chan**
University of Auckland

Prof Miranda Miroso
University of Otago

Dr Gert-Jan Moggré
BSI Plant & Food Research

Dr Carlos Montoya
BSI AgResearch

Marco Morgenstern
BSI Plant & Food Research

Dr Jane Mullaney
BSI AgResearch

Assoc Prof Mei Peng
University of Otago

Prof David Rowlands
Massey University

Dr Debashree Roy
Massey University

Dr Nick Smith
Massey University

Dr Caroline Thum
BSI AgResearch

**Assoc. Prof Catherine
Whitby**
Massey University

Prof Brent Young
University of Auckland

Key Researchers⁶

Dr Natalie Ahlborn
Postdoctoral Fellow
Massey University

Dr Mariam al Hattab
Postdoctoral Fellow
Massey University

Dr Rachel Anderson
Senior Research Scientist
BSI AgResearch

Dr Akashdeep Beniwal
Postdoctoral Fellow
Massey University

Dr Rachel Bennie
Postdoctoral Fellow
University of Canterbury

Dr Amanda Board
Postdoctoral Fellow
University of Canterbury

Dr Ryan Chanyi
Senior Research Officer
Massey University

**Dr Sylvia Chungchunlam
Lawrence**
Research Officer
Massey University

Dr Julie Dalziel
Senior Research Scientist
BSI AgResearch

Dr Thomas Do
Postdoctoral Fellow
Massey University

**Dr Amanda
Dupas De Matos**
Senior Research Officer
Massey University

Dr Andrew Fletcher
Honorary Industry Fellow
Fonterra

Dr Yinxuan Hu
Postdoctoral Fellow
Massey University

Assoc Prof Abigail Johnson
Associate Professor (SNI)
Massey University

Dr Jessica King
Postdoctoral Fellow
University of Otago

Dr Juliana Leite
Research Officer
Massey University

Dr Sze Ying Leong
Postdoctoral Fellow
University of Otago

Dr Janice Lim
Postdoctoral Fellow
Massey University

Dr Raquel Lozano
Postdoctoral Fellow
Massey University

Dr Arup Nag
Food Innovation Manager
Massey University

Dr Noha Ahmed Nasef
Research Officer
Massey University

Dr Linda Nezbedová
Junior Research Officer
Massey University

Dr Olivia Ogilvie
Research Officer
University of Auckland

Dr Jake Oh
Research Fellow
University of Auckland

Dr Nadun Palmada
Research Fellow
University of Auckland

Dr Zheng Pan
Postdoctoral Fellow
Massey University

Dr Ali Rashidinejad
Senior Research Officer
Massey University

Dr Nikki Renall
Postdoctoral Fellow
Massey University

Dr Linda Samuelsson
Senior Research Scientist
BSI AgResearch

Dr Rajesh Sathyamoorthy
Research Officer
Massey University

Dr Aylin Şen
Postdoctoral Fellow
Miruku

Dr Ivana Sequeira-Bisson
Senior Research Officer
University of Auckland

Michelle Smit
Junior Research Officer
Massey University

¹ On parental leave for some of 2025, covered by Krishna Makwana. ² On parental leave for some of 2025, covered by Deborah Stewart who then continued on as Project Manager. Hannah stepped into Business Manager role in September 2025. ³ Contract ended December 2025. ⁴ On sick leave for some of 2025 – Dist. Prof Paul Moughan appointed as Acting Director.

⁵ Riddet Fellows are senior researchers who have been Riddet Institute investigators and whose contribution to the Institute is recognised through this special status. They may retain involvement in the CoRE programme through advisory or supervisory roles. ⁶ Affiliated Researchers contribute significantly to the CoRE research programme and other aligned research programmes but do not hold investigator status.

Dr Mahya Tavan
Postdoctoral Fellow
Massey University

Dr Rob Taylor
Research Officer
Massey University

Dr Dorisel Torres Rojas
Senior Research Officer
Massey University

Dr Dulantha Ulluwishewa
Research Scientist
BSI AgResearch

Dr Xinya Wang
Postdoctoral Fellow
Massey University

Xudong Wang
Junior Research Officer
Massey University

Prof Michelle Yoo
Professor
Auckland University of
Technology

Technicians/ Technologists

Estelle Qian Cong
Research Technician
Massey University

Jian (Jack) Cui
Senior Technologist
Massey University

Eve Hands
Research Technician
Massey University

Agnes Hutchings
Senior Food Technologist
Massey University

Alice Mao
Food Technologist
Massey University

Briana Nelson
Research Technician
Massey University

Barry Scott
Research Technician
Massey University

Dr Natascha Stroebinger
Technical Manager
Massey University

Callum Tatton
Research Technician
Massey University

Yiran Wang
Food Technologist
Massey University

Yu Zhang
Research Technician
Massey University

Dr Peter Zhu
Senior Technologist
Massey University

Doctoral Researchers

Ejovi Abafe
Massey University
Continuing study

Abhilasha Abhilasha
Massey University
Completed qualification

Isurie Akarawita
University of Auckland
Continuing study

Crisline Alhambra
Massey University
Continuing study

Safira Andayani
University of Otago
Continuing study

Geoff Ang
University of Auckland
Completed qualification

Jin Ang
University of Canterbury
Continuing study

Ayşenur Arslan
Massey University
Continuing study

Norma Cecille Bagarinao
University of Otago
Continuing study

Marc Alex Bailie
Massey University
Completed qualification

Amrita Behera
Massey University
Continuing study

Ethan Cain
Massey University
Continuing study

**Giovanna Castillo-
Fernandez**
Massey University
Withdrawn

Catarina Castro-Ferreira
Massey University
Continuing study

Sukanya Chakraborty
University of Otago
Continuing study

Jingwen Chen
Massey University
Continuing study

Saniga Clance
University of Otago
Continuing study

Justine Coomson
Massey University
Continuing study

Hao Cui
Massey University
Continuing study

Sheba Culas
Massey University
Continuing study

Mina Cullen
University of Auckland
Continuing study

Sam Duanmu
University of Auckland
Completed qualification

Simone Frame
Massey University
Continuing study

Hayleigh Frost
Massey University
Continuing study

Laura Gake Ombasa
University of Otago
Continuing study

Mariero Gawat
Massey University
Completed qualification

Vitor Geniselli da Silva
Massey University
Continuing study

Ai Ting Goh
University of Otago
Continuing study

Manfred Goh Hongyi
Massey University
Continuing study

Annelise Halafihi
Massey University
Continuing study

Maryam Hesabirad
Massey University
Continuing study

Nicholas Horlacher
University of Otago
Completed qualification

Md Altaf Hossain
University of Otago
Continuing study

Ian Howson
University of Canterbury
Continuing study

Nan Hu
University of Otago
Continuing study

Yinxuan Hu
Massey University
Completed qualification

Shraddha Mangesh Jadhav
Massey University
Continuing study

Ali Jamshidi
University of Auckland
Continuing study

Kalmees Pramoda
Kariyawasam
Massey University
Continuing study

Mona Kaspal
Massey University
Continuing study

Li Ying Lau
University of Auckland
Completed qualification

Kimberley Lim
University of Waikato
Continuing study

Yilin Liu
University of Auckland
Continuing study

Di Lu
Massey University
Continuing study

Sihan Ma
Massey University
Continuing study

Catherine Maidment
Massey University
Completed qualification

Nyasha Makaza
Massey University
Continuing study

Mb Devi Marhendraswari
Massey University
Continuing study

Ana Carolina Marshall
Massey University
Completed qualification

Nicholas McGrath
University of Canterbury
Continuing study

Stephanie McLeod
University of Otago
Continuing study

Yaxin (Yasmine) Mei
Massey University
Continuing study

Selda Meneses
University of Waikato
Continuing study

Yunfan Mo
University of Otago
Continuing study

Annet Mukagatsenzi
Massey University
Continuing study

Prishanthini Muthulingam
Massey University
Continuing study

Salanieta Naliva
Massey University
Continuing study

Robin Nielsen
Massey University
Continuing study

Shien Ping Ong
University of Otago
Continuing study

Esther Onguta
Massey University
Continuing study

Supannikar Pakkethati
Massey University
Continuing study

Anurag Pathak
Massey University
Continuing study

Thelge Chamodi
Ushenya Peiris
Massey University
Continuing study

Ruwanthi Premathilaka
Massey University
Continuing study

Peter Prendergast
University of Canterbury
Continuing study

Aleise Puketapu
Massey University
Continuing study

Jervee Malabanan
Punzalan
University of Otago
Continuing study

Yusi (Barbara) Qin
Massey University
Continuing study

Charitha Rangani
Massey University
Continuing study

Asher Regan
Massey University
Continuing study

Shiyi Ren
University of Auckland
Continuing study

Mohammadsadeh
Salimian (Rizi)
University of Auckland
Continuing study

Szofia Schonberger
Massey University
Continuing study

Aylin Şen
Massey University
Completed qualification

Aysu Shahin
University of Otago
Completed qualification

Navratan Sharma
University of Otago
Continuing study

Qayyum Shehzad
Massey University
Continuing study

Bi Xue Patricia Soh
Massey University
Continuing study

Mohadeseh Soleimani
Damaneh
Massey University
Continuing study

Kai Steinmetz
University of Auckland
Completed qualification

Litian Su
University of Auckland
Continuing study

Rushikesh Tamhane
Massey University
Continuing study

Callum Tatton
Massey University
Continuing study

Jacqueline Tonkie
Massey University
Continuing study

Hamish Trlin
University of Canterbury
Completed qualification

Katherine Trought
Lincoln University
Continuing study

Christine Xiaoqiong Tu
Massey University
Continuing study

Syed Ubaid Ullah Shah
Massey University
Continuing study

Reza Vaseghi Bakhshayesh
Massey University
Continuing study

Xudong Wang
University of Auckland
Completed qualification

Yuan Wang
University of Auckland
Continuing study

Prasadini Wasana
Withanage
Massey University
Continuing study

Jie Long Jerome Wong
Massey University
Continuing study

Summer Rangimaarie
Wright
Massey University
Completed qualification

Angela Wulansari
University of Otago
Continuing study

Chengyi Yang
University of Otago
Completed qualification

Runji Zhao
University of Auckland
Continuing study

Master's Degree Researchers

Treesa Antony
Massey University
Completed qualification

Haig Bishop
University of Canterbury
Continuing study

Kartik Lakra
Massey University
Completed qualification

Thomas Liebrechts
Massey University
Continuing study

Seethapathi Akash
Rachapudi
University of Otago
Continuing study

Miku Sciascia
Massey University
Continuing study

Scylla Sundheim
University of Auckland
Continuing study

Ahotau Tohi
Massey University
Continuing study

FINANCIAL REPORT

INCOME AND EXPENDITURE OF CoRE FUNDS

		BUDGET 2025 \$000	ACTUAL 2025 \$000
Income			
	CoRE Funding	5,100	5,100
	Surplus/Deficit carried forward	4,072	4,072
	Funds contributed by collaborative partners	0	455
	Total Income	9,172	9,627
Expenditure			
Salaries	Total Salaries & Salary-related costs	1,993	1,541
	<i>as % of Total Expenditure</i>	30%	25%
Other Costs			
Indirect Costs	Overheads	1,725	1,756
	<i>as % of Total Expenditure</i>	26%	29%
Direct Costs	Project Costs	788	739
	<i>as % of Total Expenditure</i>	12%	12%
	Travel	114	200
	<i>as % of Total Expenditure</i>	2%	3%
	Postgraduate researchers	1,723	1,564
	<i>as % of Total Expenditure</i>	26%	26%
	Equipment depreciation/rental	1	0
	<i>as % of Total Expenditure</i>	0%	0%
	Subcontractor(s) specified	282	291
	<i>as % of Total Expenditure</i>	4%	5%
	Extraordinary Expenditure	0	0
	<i>as % of Total Expenditure</i>	0%	0%
	Total Other Costs	4,634	4,550
	<i>as % of Total Expenditure</i>	70%	75%
Total CoRE Expenditure	Total Expenses	6,627	6,091
<i>Net Surplus/(Deficit) - annual</i>		(1,527)	(536)
<i>Net Surplus/(Deficit) - cumulative</i>		2,546	3,536

CO-FUNDING

		2025 (\$000)
Government Funding	National Science Challenges	-*
	Other MBIE	2,734
	Health Research Council	99
	Non-vote	39
Non-Government Funding	Domestic	1,103
	International - Private Sector	225
	International - Public Sector	-
	University/Host/Partner support	-
Total		4,199

*The funding for National Science Challenges ended in 2024. However, work has still been ongoing in 2025.

SUMMARY OF DATA

VALUE OF CoRE FUNDING FROM TEC		\$5.1 MILLION
FTEs by category	Principal Investigators	4
	Associate Investigators	1.2
	Postdoctoral Fellows	8.5
	Research technicians	1.8
	Administrative/support	2.5
	Research students	58.7 (approx.)
	TOTAL	76.7
Headcounts by category	Principal Investigators	41
	Associate Investigators	36
	Postdoctoral Fellows	19
	Research technicians	1
	Administrative/support	11
	Research students	107
	TOTAL	215
Peer-reviewed research outputs by type	Books	3
	Book chapters	10
	Journal articles	209
	Invited conference/keynote presentations	42
	Prizes and distinctions	See pgs 43 and 44
Students studying at CoRE by level	Doctoral degree	98
	Other	9
	TOTAL	107
Number of students completing qualifications by category	Doctoral degree	16
	Master's degree	1
	Other	-
	TOTAL	17
Number of graduates by immediate post-study destination	Further study in NZ	-
	Further study overseas	-
	Employed in NZ in Māori organisation	-
	Employed in NZ other	14
	Employed overseas	3
	Unknown	-
	Other	-
	TOTAL	17



PEER-
REVIEWED
JOURNAL
ARTICLES

SCIENTIFIC PUBLICATIONS 2025

- Adadi, P., Harris, A., Bremer, P., Silcock, P., Ganley, A. R. D., Jowett, T., Jeffs, A. G., & Eyres, G. T. (2025). Audible sound decreased beer fermentation time with minimal effects on the abundance of volatile organic compound production. *Food Research International*, 212.
- Agbor Epse Mulu, E., McCormack, J. C., McLeod, S. C., Abeywickrema, S., Hooton, J., Garratt, M., Halberstadt, J., & Peng, M. (2025). Exploring comfort food cravings during pregnancy: A cross-sectional survey study. *Appetite*, 210, 12.
- Ahmad, R., Singh, A., Purba, A., & Rashidinejad, A. (2026). Novel rutin-casein composites as functional dry ingredients for the delivery of high concentration of rutin in dairy beverages: in vitro bioaccessibility, cytotoxicity, absorption, and intestinal barrier integrity. *Food Hydrocolloids*, 170.
- Akarawita, I., Chen, B., Dhupia, J. S., Stommel, M., & Xu, W. (2025). ChewNet: A multimodal dataset for in vivo and in vitro beef and plant-based burger patty boluses with images, texture, and force profiles. *Data in Brief*, 62.
- Akpojevwe Abafe, E., Smith, N. W., Maxwell, T. M. R., & McNabb, W. C. (2025). Trends in micronutrient research since the SDGs: a global perspective. *Critical Reviews in Food Science and Nutrition*.
- Alhattab, M., Lebeau, J., Singh, S., & Puri, M. (2025). Mutagenesis treatment of *Mortierella alpina* for PUFA production enhancement for future food development. *Future Foods*, 11.
- Amoah, I., Charles Cobbinah, J., Tawiah, P., Jiet Lim, J., Afua Yeboah, J., & Rush, E. (2025). Glycaemic and satiety responses associated with the consumption of parboiled and braised rice: a systematic review and meta-analysis. *Cogent Food and Agriculture*, 11(1).
- Anema, S. G. (2025). Spontaneous interactions between α -lactalbumin and native or heat-denatured lactoferrin. *International Dairy Journal*, 167.
- Ang, X., Chen, H., Xiang, J., Wei, F., & Quek, S. Y. (2025). Preparation, digestion, and storage of microencapsulated nervonic acid-enriched structured phosphatidylcholine. *Molecules*, 30(9).
- Ashaolu, T. J., Karaça, A. C., Rashidinejad, A., & Jafari, S. M. (2025). Recent advancements in curcumin extraction, chemical/bio-synthesis, purification, and food applications. *Critical Reviews in Food Science and Nutrition*, 65(14), 2714–2730.
- Asioli, D., & Jaeger, S. R. (2025). Online consumer research: more attention needs to be given to data quality. *Current Opinion in Food Science*, 63.
- Askari Vasselabadi, S., Gharibzahedi, S. M. T., Greiner, R., Vale, J. M., Oveneri, A. C., Rashidinejad, A., & Roohinejad, S. (2025). Advancements in spray-drying for the microencapsulation of fat-soluble vitamins: stability, bioavailability, and applications. *Journal of Food Biochemistry*, 2025(1).
- Athavale, O. N., Avci, R., Clark, A. R., Cheng, L. K., & Du, P. (2025). Acute cervical vagus nerve stimulation modulates gastric slow waves in the distal rat stomach. *Neurogastroenterology and Motility*, 37(7).
- Athavale, O. N., Paskaranandavadivel, N., Cheng, L. K., & Du, P. (2025). Markerless recurrence analysis of gastric electrophysiology during vagus nerve stimulation. *Computers in Biology and Medicine*, 196.
- Austin, G., Ferguson, J. J. A., Eslick, S., Oldmeadow, C., Wood, L. G., & Garg, M. L. (2025). Dietary intakes and nutritional adequacy of Australians consuming plant-based diets compared to a regular meat-eating diet. *European Journal of Clinical Nutrition*.
- Bagheri, H., Akhavan-Mahdavi, S., Sarabi-Aghdam, V., Mirarab Razi, S., Singh Beniwal, A., & Rashidinejad, A. (2025). Targeted dairy fortification: leveraging bioactive compounds to enhance nutritional value. *Critical Reviews in Food Science and Nutrition*.
- Bennie, R. Z., Ogilvie, O. J., Loo, L. S. W., Zhou, H., Ng, S. K., Jin, A., Trlin, H. J. F., Wan, A., Yu, H., Domigan, L. J., & Dobson, R. C. J. (2025). A risk-based approach can guide safe cell line development and cell banking for scaled-up cultivated meat production. *Nature Food*.
- Bisht, A., Goh, K. K. T., Monro, J., & Matia-Merino, L. (2025). Correction: The fate of mamaku gum in the gut: Effect on *in vitro* gastrointestinal function and colon fermentation by human faecal microbiota (Food and Function (2023) 14 (7024-7039)). *Food and Function*, 16(18), 7455.
- Boland, M., Kaur, L., & Acevedo-Fani, A. (2025). Food proteins: processing, interactions, functionality and bioavailability. *Foods*, 14(5).
- Butowski, C. F., Dixit, Y., Reis, M. M., & Mu, C. (2025). Metatranscriptomics for understanding the microbiome in food and nutrition science. *Metabolites*, 15(3).
- Cain, E., Hodgkinson, S. M., McNabb, W., Brodkorb, A., Giblin, L., & Waters, M. (2025). Protein extraction from buckwheat, *Chondrus crispus*, and spelt and assessment of nutritional benefits and limitations in vitro. *npj Science of Food*, 9(1).
- Charton, E., Fraser, K., Moughan, P. J., Montoya, C. A., Francis, M., Bellanger, A., Roy, N. C., Dupont, D., Deglaire, A., & Le Huërou-Luron, I. L. (2025). Impact of infant nutrition on gut and brain nitrogenous metabolomes: Comparison of human milk and infant formula feeding in the minipiglet model. *Journal of Nutritional Biochemistry*, 145.
- Chavan, J. J., Gaikwad, N. B., Jagtap, U. B., Santa-Catarina, C., & Kaur, L. (2025). Salacia as a functional bioactive food ingredient: Insights into dietary phytonutrients, phytochemistry, health-promoting attributes and innovation potential. *Food Bioscience*, 71.
- Chen, C., Wang, H., Wang, Q., Wang, M., Everett, D. W., Huang, M., Zhai, Y., Li, T., & Fu, Y. (2025). Amyloid fibrils for β -carotene delivery – Influence of self-assembled structures on binding and *in vitro* release behavior. *Food Chemistry*, 464.
- Chungchunlam, S. M., & Moughan, P. J. (2025). The role of beef for the lowest cost and adequate provision of bioavailable nutrients in modeled diets at a population level in the United States. *Current Developments in Nutrition*, 9(12).
- Coomson, J. B., Smith, N. W., & McNabb, W. (2025). Impacts of food fortification on micronutrient intake and nutritional status of women of reproductive age in Africa—A narrative review. *Advances in Nutrition*, 16(7).
- Cui, H., Hodgkinson, S. M., Stroebeinger, N., Roy, D., Li, S., Guo, Q., & Ye, A. (2025). Effect of high moisture extrusion on true ileal amino acid digestibility and DIAAS of quinoa-pea protein-based meat analogues. *Food and Function*, 16(24).
- Cui, H., Roy, D., Li, S., Loo, T. S., Guo, Q., & Ye, A. (2025). Recovery and characterisation of quinoa protein via neutral to alkaline extraction: protein profiles and heat-induced aggregation behaviour. *Current Research in Food Science*, 11.
- Culas, M. S., Kaur, L., Popovich, D. G., & Rashidinejad, A. (2025). Comparative efficiency of extraction techniques for bioactive compounds in *Cinnamomum zeylanicum*. *Food Chemistry*, 493.
- de Bhowmick, G., Plouviez, M., Gomes Reis, M. G., Guieysse, B., Everett, D. W., Agnew, M. P., Maclean, P., & Thum, C. (2025). Enhancing sn-2 specific fatty acid accumulation in microalgae: Impact of nutrient limitation on different methods: triacylglycerol profiles. *International Journal of Food Science and Technology*, 60(2).
- Deen, C., Sherriff, S., Shelling, M., Gall, A., Cubillo, B., Te Morenga, L., Brimblecombe, J., & Matthews, V. (2025). Measuring Indigenous food security—A case for Indigenous designed tools. *Health Promotion Journal of Australia*, 36(1).
- Dixit, Y., & Reis, M. M. (2025). From farm to fork: Spectroscopy in meat quality and safety assurance. In *Advances in Food and Nutrition Research*. Academic Press Inc.
- Do, D. T., Ye, A., Singh, H., & Acevedo-Fani, A. (2025). Heat-induced dissociation and association of proteins in hempseed protein bodies. *Food Hydrocolloids*, 166.
- Dong, X., Bi, X., & Quek, S. Y. (2025). Integrative approach to assessing bioactivity from hempseed protein isolate extracted and dehydrated by different methods: Synergising in silico prediction and in vitro validation. *Food Chemistry*, 463.
- Dörner, R., Hägele, F. A., O'Donovan, S. D., Miles-Chan, J. L., Müller, M. J., & Bosy-Westphal, A. (2025). Diurnal differences in postprandial glucose and triglyceride metabolism reveal metabolic flexibility and resilience. *American Journal of Physiology - Cell Physiology*, 328(5).
- Drudi, F., Oey, I., Leong, S. Y., King, J., Sutton, K., & Tylewicz, U. (2025). New opportunity of using pulsed electric field (PEF) technology to produce texture-modified chickpea flour-based gels for people with dysphagia. *Food Hydrocolloids*, 168.
- Duan, M., Che, L., Wu, X., Quek, S. Y., Zhang, B., Lin, H., & He, N. (2025). Incorporation of probiotics with pressure-sensitive pectin-fructooligosaccharide hydrogel for potential intestinal delivery. *Carbohydrate Polymers*, 359.
- Duanmu, Z., Kazemi, S., Cheng, L. K., Stommel, M., & Xu, W. (2025). Real-time, FEM-based control of a soft actuator with force sensing for gastric contraction simulation. *IEEE/ASME Transactions on Mechatronics*.
- Dupas de Matos, A., Chen, A., Maggs, R., Godfrey, A. J. R., Weerawarna N.R.P, M., & Hort, J. (2025). Cross-cultural differences and acculturation in affective response and sensory perception: a case study across Chinese immigrants and local consumers in New Zealand. *Food Quality and Preference*, 122.
- Erhard, A. L., Andersen, G. B. H., Cardello, A. V., & Jaeger, S. R. (2026). Protein in context: Exploring the content and context of meat-free and meat-based eating occasions among UK adults. *Appetite*, 217.
- Eslick, S., Austin, G., Ferguson, J., J Oldmeadow, C., Garg, M., & Martins, R. N. (2025). Comparison of blood-based biomarkers of AD in individuals following plant-based diets compared to regular meat eaters. *Alzheimer's and Dementia*, 21.
- Eslick, S., Austin, G., Ferguson, J. J. A., Garg, M., J Oldmeadow, C., & Martins, R. N. (2025). Blood biomarkers of Alzheimer's disease in Australians habitually consuming various plant-based diets. *Journal of Alzheimer's Disease*, 106(3), 1120–1129.
- Everett, D. W. (2025). Dairy foods: A matrix for human health and precision nutrition—The impact of the dairy food matrix on digestion and absorption. *Journal of Dairy Science*, 108(4), 3070–3087.
- Fanning, E., Eyres, G. T., Frew, R., & Kebede, B. (2025). Near-infrared spectroscopy combined with multivariate analysis for the geographical origin traceability of New Zealand hops. *Food and Bioprocess Technology*.
- Faraj, S., Joblin-Mills, A., Sequeira, I. R., Leiu, K. H., Tung, T., Wallbank, J. A., Fraser, K., Miles-Chan, J. L., Poppitt, S. D., & Taylor, M. W. (2025). Investigating multi-omic signatures of ethnicity and dysglycaemia in Asian Chinese and European Caucasian adults: Cross-sectional analysis of the TOFI Asia Study at 4-year follow-up. *Metabolites*, 15(8).
- Fardet, A., Boland, M., Hong-Minh, H., Delgado, A., Halawany-Darson, R., Germond, A., Nedelciu, C. E., Kopsahelis, N., Diemer, A., Baritoux, V., Galli, F., & Rock, E. (2025). Food processing and sustainability: Exploring new multidisciplinary perspectives. *Global Food Security*, 45.
- Feng, Y., Reis, M. M., Tu, C., Soni, A., Brightwell, G., Chen, M., Zhang, J., Wang, J., Wu, Q., & Ding, Y. (2025). High-throughput, rapid, and non-destructive detection of common foodborne pathogens via hyperspectral imaging coupled with deep neural networks and support vector machines. *Food Research International*, 202.

- Feng, Z., Morton, J. D., Maes, E., Kumar, L., & Serventi, L. (2025). Exploring faba beans (*Vicia faba* L.): bioactive compounds, cardiovascular health, and processing insights. *Critical Reviews in Food Science and Nutrition*, 65(22), 4354–4367.
- Feng, Z., Morton, J. D., Maes, E., Kumar, L., & Serventi, L. (2025). Proximate composition, peptide characterization and bioactive properties of faba bean blanching water. *Food Research International*, 200.
- Fernando, M. G., Chen, J., Castro, C. B., Fuller, S. J., Gardener, S. L., Naismith, S. L., Baker, L. D., Kivipeltö, M., Villemagne, V. L., Grieve, S., Yates, P. A., Armstrong, N., Anstey, K. J., Sohrabi, H. R., Garg, M., & Martins, R. N. (2025). Baseline diet quality and adequacy of AU-ARROW participants - Preliminary findings. *Alzheimer's and Dementia*, 21.
- Frost, H., Te Morenga, L., MacKay, S., McKechar, C., & Egli, V. (2025). Impact of unhealthy food/drink marketing exposure to children in New Zealand: A systematic narrative review. *Health Promotion International*, 40(2).
- Fryer, J. A., Dupas de Matos, A., Hort, J., & Tomasino, E. (2025). Consumer responses to smoke-impacted pinot noir wine and the influence of label concepts on perception. *Food Research International*, 203.
- Geniselli da Silva, V., Mullaney, J. A., Roy, N. C., Smith, N. W., Wall, C., Tatton, C. J., & McNabb, W. C. (2025). Complementary foods in infants: an in vitro study of the faecal microbial composition and organic acid production. *Food and Function*, 16(9), 3465–3481.
- Geniselli da Silva, V., Roy, N. C., Smith, N. W., Wall, C., Mullaney, J. A., & McNabb, W. C. (2025). Dietary patterns influencing the human colonic microbiota from infancy to centenarian age: a narrative review. *Frontiers in Nutrition*, 12.
- Geniselli da Silva, V., Smith, N. W., Mullaney, J. A., Roy, N. C., Wall, C., & McNabb, W. C. (2025). Mathematical models of the colonic microbiota: an evaluation of accuracy using in vitro fecal fermentation data. *Frontiers in Nutrition*, 12.
- Geniselli da Silva, V., Tonkie, J. N., Roy, N. C., Smith, N. W., Wall, C., Kruger, M. C., Mullaney, J. A., & McNabb, W. C. (2025). The effect of complementary foods on the colonic microbiota of weaning infants: a systematic review. *Critical Reviews in Food Science and Nutrition*, 65(29), 6294–6309.
- Ghosh, S., Melton, L. D., Kihara, S., Xu, A. Y., Mata, J., Whitten, A. E., Rekas, A., & McGillivray, D. J. (2025). Measured effect of encapsulation and freeze-drying on the structural organisation of β -Lactoglobulin–pectin complex coacervates with curcumin and folic acid. *Food Chemistry*, 491.
- Giezenaar, C., Mehta, A., Orr, R. E., Godfrey, A. J. R., Foster, M., & Hort, J. (2025). Exploring the association of personal factors with affective responses to plant-based meat alternatives with consideration of their perceived similarity to meat. *Food Quality and Preference*, 133.
- Giezenaar, C., Orr, R. E., Godfrey, A. J. R., Maggs, R., Foster, M., & Hort, J. (2025). Corrigendum to “Profiling the novel plant-based meat alternative category: Consumer affective and sensory response in the context of perceived similarity to meat” [Food Research International 188 (2024) 114465] [Food Research International (2024) 188, (S0963996924005350), (10.1016/j.foodres.2024.114465)]. *Food Research International*, 209.
- Gito, D. A. D., Akbarinejad, A., Dixon, A., Loho, T., Nieuwoudt, M., Chen, Q., Domigan, L. J., & Malmström, J. (2025). Self-assembled piezoelectric films from aligned lysozyme protein fibrils. *Biomacromolecules*, 26(1), 514–527.
- Gopal, P. K. (2025). Editorial for the gut microbiota section. *Microorganisms*, 13(6).
- Green, S., Eyres, G. T., Agyei, D., Horlacher, N., Di Stefano, E., & Kebede, B. (2025). Dynamic volatile insights of solid-state fermented oats with *Lactiplantibacillus plantarum*: a future food sustainable development strategy. *Sustainable Food Technology*.
- Grundy, M. M. L., Deglaire, A., Le Feunteun, S., Reboul, E., Moughan, P. J., Wilde, P. J., McClements, D. J., & Marze, S. (2025). Bioaccessibility and associated concepts: Terminology in the context of in vitro food digestion studies. *Food Chemistry*, 485.
- Harju, E. A., Tomberg, T., Wurr, L., van Rijckeghem, A., Arbiol Enguita, A. M., Dordovic, V., Johansson, N. G., Räikkönen, H., Isomäki, A., Saarinen, J. K. S., Gordon, K. C., van Veen, B., & Strachan, C. J. (2025). Characterization of solid-state complexities in pharmaceutical materials via stimulated Raman scattering microscopy. *Analytical Chemistry*, 97(18), 9627–9637.
- Hodgkinson, S. M., Stroebinger, N., Montoya, C. A., Stein, H., de Vries, S., van der Wielen, N., Hendriks, W., & Moughan, P. J. (2025). Repeatability of pig true ileal amino acid digestibility coefficients: Among and within laboratories. *Journal of Nutrition*, 155(5), 1398–1407.
- Hodgkinson, S. M., Stroebinger, N., Stein, H. H., Fanelli, N. S., De Vries, S., Van Der Wielen, N., Hendriks, W. H., & Moughan, P. J. (2025). True ileal amino acid digestibility of human foods classified according to food type as determined in the growing pig. *Journal of Nutrition*, 155(10), 3384–3400.
- Hoogveen, A. M. E., Butts, C. A., Kim, C. C., Jobsis, C. M. H., Parkar, S. G., Stoklosinski, H. M., H Sutton, K., Davis, P., Hedderley, D. I., Johnston, J., & Gopal, P. K. (2025). The effect of apple and pear cultivars on in vitro fermentation with human faecal microbiota. *Microorganisms*, 13(8).
- Horlacher, N., King, J., Leong, S. Y., Agyei, D., Moggré, G. J., Sutton, K., & Oey, I. (2025). Synergistic effects of PEF treatment and lactic acid fermentation on protein digestibility and texture in a blended oat and pea yogurt alternative. *LWT*, 220.
- Horlacher, N., Punzalan, J., King, J., Leong, S., Agyei, D., Gordon, K., Moggré, G. J., H Sutton, K., & Oey, I. (2025). Pulsed electric field processing modifies protein and nonprotein components in a blended oat-pea model milk and yoghurt alternative: Molecular insights and impacts on key functionalities. *Food and Bioprocess Technology*.
- Hossain, M. A., Soni, K., Agyei, D., Kebede, B., & Reynolds, A. N. (2025). Legume intakes on cardiometabolic profile and gut microbiome function: systematic review and meta-analyses of randomised controlled trials. *European Journal of Nutrition*, 64(1).
- Hu, Y., Acevedo-Fani, A., Singh, H., & Ye, A. (2025). Colloidal properties of milk and plant-based milk alternatives: A structural perspective. *Current Opinion in Colloid and Interface Science*, 80.
- Hu, Y., Ye, A., Cheng, L., Lee, S. J., & Yang, Z. (2025). Recent progress in fabrication, characterization and application of functional protein aggregates derived from plant proteins. *Critical Reviews in Food Science and Nutrition*.
- Huang, Z., Xue, B., Zhang, M., Rooney, J. S., Gordon, K. C., & Killeen, D. P. (2025). Designing new data augmentation functions for fish spectral data by genetic programming. *Association for Computing Machinery*.
- Hunter, P., De Bono, B., Brooks, D., Christie, R., Hussan, J., Lin, M., & Nickerson, D. (2025). The physiome project and digital twins. *IEEE Reviews in Biomedical Engineering*.
- Hunter, R. J., & Anema, S. G. (2026). Cross-linking milk proteins with glyceraldehyde. *International Dairy Journal*, 172.
- Jaeger, S. R., Andersen, G. B. H., & Ares, G. (2025). Product names and descriptions matter for consumer perceptions of plant-based alternatives to meat and fish: Insights from the United Kingdom. *Food Quality and Preference*, 133.
- Jaeger, S. R., Chheang, S. L., & Ares, G. (2025). How do omnivore consumers perceive plant-based alternatives to yoghurt, cheese, eggs and salmon? Comparison with animal-based counterparts and consideration of the effect of nutrition and ingredient information. *Food Quality and Preference*, 130.
- Jaeger, S. R., Chheang, S. L., & Llobell, F. (2026). Applications of the ErrVarNorm index in case 1 best-worst scaling and data quality insights. *Food Quality and Preference*, 136.
- Jaeger, S. R., Chheang, S. L., & Schouteten, J. J. (2025). Consumer expectations for cream cheese: A category appraisal study in the United Kingdom with dairy and plant-based variants in various flavours. *Foods*, 14(3).
- Jaeger, S. R., Jin, D., Roigard, C. M., & Cardello, A. V. (2025). Consumer evaluations of commercially available plant-based cheddar cheese alternatives reveal inferior taste, nutrition and emotional appeal. *Food Research International*, 200.
- Jaeger, S. R., Johannesson, H., Svensson, J., Jönsson, M., Calvén, A., & Wendin, K. (2025). Perceived food saltiness vs actual NaCl content – An inspiration for innovation of reduced-salt foods. *Science Talks*, 14.
- Jaeger, S. R., Meiselman, H. L., & Giacalone, D. (2025). Reply to three commentaries on the definition of sensory and consumer science by Jaeger et al. (2024). *Food Quality and Preference*, 129.
- Jaeger, S. R., Meiselman, H. L., & Giacalone, D. (2025). Sensory and consumer science: A complex, expanding, and interdisciplinary field of science. *Food Quality and Preference*, 122.
- Jalili-Moghaddam, S., Mearns, G., Plank, L. D., Tautolo, E. S., & Rush, E. (2025). Pacific Islands families study: Serum uric acid in Pacific youth and the associations with free-sugar intake and appendicular skeletal muscle mass. *Nutrients*, 17(1).
- Jayawardana, I. A., Boland, M. J., Stroebinger, N., Hodgkinson, S. M., Loo, T. S., McNabb, W. C., & Montoya, C. A. (2025). Digestion of gluten-derived immunogenic peptides along the gastrointestinal tract of the growing pig as a model for the adult human is enhanced with simultaneous consumption of exogenous proteases. *Journal of Nutrition*.
- Jia, D., Jin, S., Zhang, J., Luo, S., Li, X., Quek, S. Y., Dong, X., & Yan, D. (2025). Dynamic changes in metabolites and transformation pathways in Diqing Tibetan pig hams during fermentation determined by widely targeted metabolomic analysis. *Foods*, 14(14).
- Jiao, W., Mittelstädt, G., Richardson, A. T., Allison, T. M., Berney, M., & Parker, E. J. (2025). Mechanistic insights into homoserine O-acetyltransferase from *Mycobacterium tuberculosis*. *Biochemistry*, 64(15), 3299–3310.
- Jobichen, C., Saharan, K., Samal, A., Choong, Y. K., Jagdev, M. K., Mohapatra, C., Jian, S., Babbar, R., Dobson, R. C. J., Grover, A., Vasudevan, D., & Sivaraman, J. (2025). Cryo-EM structure provides insights into the unusual heptameric assembly of rice (*Oryza sativa* L.) ClpB1 AAA+ ATPase. *International Journal of Biological Macromolecules*, 311.
- Kar, A., & Bornhorst, G. M. (2025). Ultrasound-treated hybrid protein gels from pea and whey: A comparison of gastric breakdown mechanisms with commercial protein-based foods. *Food Research International*, 203.
- Katiferis, I., Smith, C., Haszard, J. J., Styles, S. E., Leong, C., Taylor, R. W., Conlon, C. A., Beck, K. L., von Hurst, P. R., Te Morenga, L. A., Daniels, L., Brown, K. J., Rowan, M., Casale, M., McLean, N. H., Cox, A. M., Jones, E. A., Bruckner, B. R., Jupiterwala, R., . . . Heath, A. L. M. (2025). Household food insecurity and novel complementary feeding methods in New Zealand families. *Maternal and Child Nutrition*.

- Katugampala Appuhamilage, D., Jelley, R. E., Sherman, E., Pilkington, L. I., Pinu, F. R., & Fedrizzi, B. (2025). Development of a dispersive liquid-liquid microextraction method for quantification of volatile compounds in wines using gas chromatography-mass spectrometry. *Metabolites*, 15(2).
- Krebs, J. D., Parry-Strong, A., Braakhuis, A., Worthington, A., Merry, T. L., Geary, R. B., Foster, M., Weatherall, M., Davies, C., Mullaney, J., Ross, C., Conroy, D., Rolleston, A., & Lithander, F. E. (2025). A Mediterranean dietary pattern intervention does not improve cardiometabolic risk but does improve quality of life and body composition in an Aotearoa New Zealand population at increased cardiometabolic risk: A randomised controlled trial. *Diabetes, Obesity and Metabolism*, 27(1), 368–376.
- Lassen, R. S., Sant'Anna, V., Leães, F. L., Filho, T. L., & Dupas de Matos, A. (2025). Exploring the use of verjuice for reduced sodium pickle production: Determination of hedonic and rejection thresholds. *Journal of Sensory Studies*, 40(2).
- Lau, L. Y. J., Huang, K., & Quek, S. Y. (2025). Impact of phenolic-rich feijoa (*Acca sellowiana* 'Kakariki') peel extract on the mucin-adhesive properties of selected probiotic strains. *Food Bioscience*, 67.
- Lau, L. Y. J., Huang, K., & Quek, S. Y. (2025). Unlocking the potential of leaf extracts in promoting probiotic growth. *Food Bioscience*, 64.
- Lau, L. Y. J., & Quek, S. Y. (2025). Proteomic insights into stress responses and adhesion markers of co-encapsulated *Lactobacillus reuteri* DPC16 with *Cyclocarya paliurus* leaf extracts during in vitro gastrointestinal tract simulation (GITS). *Food Bioscience*, 66.
- Lau, L. Y. J., Woo, M. W., & Quek, S. Y. (2025). Co-encapsulation of *Lactobacillus reuteri* DPC16 and *Cyclocarya paliurus* leaf extracts in plant proteins for probiotic viability improvement. *Food Chemistry*, 482.
- Li, B., Wu, Y., Ye, A., & Guo, Q. (2025). Emulsifying properties of quinoa protein fibrillar aggregates and their influence on quinoa protein emulsion gel formation. *International Journal of Biological Macromolecules*, 285.
- Li, D., Ma, Y., Acevedo-Fani, A., Lu, W., Singh, H., & Ye, A. (2025). Heat-induced modifications of pea protein: Implications for solubility and digestion behaviour. *Current Research in Food Science*, 11.
- Li, J., Zhang, Y., Wen, Z., Shuai, J., Zhang, X., Zhou, J., Ye, A., & Fu, L. (2025). Mechanisms and applications of convection PCR utilizing trimmed β -lactoglobulin aptamers for ultra-fast detection of milk allergens. *Sensors and Actuators B: Chemical*, 444.
- Lim, W. X. J., Moughan, P. J., Von Hurst, P., Cathryn, C. A., Singh, H., & Garg, M. (2025). Application of the New Zealand pine bark extract on sucrose uptake responses to composite meals in healthy adults – a randomized, controlled, crossover trial. *Food and Function*, 16(21), 8584–8593.
- Lim, W. X. J., Page, R. A., Gammon, C. S., & Moughan, P. J. (2025). The hypoglycaemic effects of the New Zealand pine bark extract on sucrose uptake and glycaemic responses in healthy adults—A single-blind, randomised, placebo-controlled, crossover trial. *Nutrients*, 17(14).
- Lin, Q., Sun, T., Sang, M., Wang, Y., Han, J., Singh, H., & Ye, A. (2025). Structure and protein digestibility of textured vegetable proteins (TVPs)-based meat analogs: effect of corn starch. *Food Hydrocolloids*, 167.
- Liu, S., Quek, S. Y., & Huang, K. (2025). A phage-favorable one-pot biomimetic mineralization approach for incorporating living phages into hybrid nanoflowers to enhance delivery, stability, and biocidal efficacy. *Chemical Engineering Journal*, 522.
- Liu, S., Quek, S. Y., & Huang, K. (2025). Phage-inorganic hybrid magnetic nanorobots for enhanced antibacterial and antibiofilm activities. *Chemical Engineering Journal*, 521.
- Llobell, F., Choisy, P., Chheang, S. L., & Jaeger, S. R. (2025). Measurement and evaluation of participant response consistency in Case 1 Best-Worst-Scaling (BWS) in food consumer science. *Food Quality and Preference*, 123.
- Lu, D., Roy, D., Acevedo-Fani, A., Singh, H., Waterland, M., & Ye, A. (2026). Physical properties and microstructure of hybrid processed cheeses formulated with plant protein and milk protein ingredients. *Food Hydrocolloids*, 170.
- Lu, D., Roy, D., Acevedo-Fani, A., Singh, H., & Ye, A. (2025). Investigation of various plant protein ingredients for processed cheese analogues: physical properties and microstructure compared with milk proteins. *International Journal of Food Science and Technology*, 60(1).
- Luo, J., Ye, C., Wen, Y., Bao, Y., & Quek, S. Y. (2025). Investigation of solid-state fermentation of red seaweed (*Pyropia* spp.) with lactic acid Bacteria: Effects on protein profile and in vitro digestibility. *Food Chemistry*, 469.
- Luo, N., Wolber, F. M., Singh, H., & Ye, A. (2025). Secretion of inflammatory mediators by human intestinal epithelial cells incubated with gastric digesta of emulsion gels containing capsaicinoids: Implication on gastric irritation. *Food Hydrocolloids for Health*, 7.
- Ma, S., Ye, A., Singh, H., & Acevedo-Fani, A. (2025). Heat-induced interactions between microfluidized hemp protein particles and caseins or whey proteins. *Food Chemistry*, 463.
- Ma, S., Ye, A., Singh, H., & Acevedo-Fani, A. (2026). Emulsifying properties of hemp and whey protein complexes achieved by microparticulation. *Food Hydrocolloids*, 171.
- Manners, S. H., van Leeuwen, K. A., Gaw, S., Panicker, K., Gill, S., Dhami, M. K., Warden, N., Dobson, R. C. J., Fedrizzi, B., & Stott, M. B. (2025). Volatile sulfur compounds in New Zealand Sauvignon blanc: An inter-regional survey. *Food Chemistry*, 495.
- Marshall, A. C., Lopez-Villalobos, N., Loveday, S. M., Weeks, M., & McNabb, W. (2025). Animal factors affecting the cheese-making properties and the heat coagulation time of milk from dairy sheep in a New Zealand flock. *New Zealand Journal of Agricultural Research*, 68(3), 630–647.
- Marshall, A. C., Lopez-Villalobos, N., Loveday, S. M., Weeks, M., & McNabb, W. (2025). Estimation of genetic parameters for production, composition and processability of milk from dairy sheep in a New Zealand flock. *New Zealand Journal of Agricultural Research*, 68(5), 1107–1124.
- Marshall, A. C., Lopez-Villalobos, N., Vigolo, V., Marchi, M. D., Loveday, S. M., Weeks, M., & McNabb, W. (2025). Candidate gene search for milk production and composition, milk coagulation properties, and milk protein profile in dairy sheep from a New Zealand flock. *Animal Biotechnology*, 36(1).
- Marshall, A. C., Vigolo, V., Marchi, M. D., Lopez-Villalobos, N., Loveday, S. M., Weeks, M., & McNabb, W. (2025). Effect of protein polymorphisms on milk composition, coagulation properties, and protein profile in dairy sheep. *International Dairy Journal*, 160.
- Matthews, J. J., Arentson-Lantz, E. J., Moughan, P. J., Wolfe, R. R., Ferrando, A. A., & Church, D. D. (2025). Understanding dietary protein quality: Digestible indispensable amino acid scores and beyond. *Journal of Nutrition*, 155(10), 3152–3167.
- McCoard, S., Stevens, D., Selbie, D., Day, L., Young, W., Bekhit, A. E. D., & Samuelsson, L. (2025). Supporting the growth of the dairy sheep industry in New Zealand – Industry update and review of a programme linking industry and science. *New Zealand Journal of Agricultural Research*, 68(2), 183–217.
- McLeod, S. C., McCormack, J. C., Wratten, J., Davies, L., Mosley-Martin, Y., Oey, I., Conner, T. S., & Peng, M. (2025). PregNut survey: knowledge, attitude, and practices of midwives regarding plant-based diets during pregnancy. *BMC Pregnancy and Childbirth*, 25(1).
- Melz, T. C., Rossi, R. C., Ziegler, V., & Dupas de Matos, A. (2025). Understanding consumer acceptability and sensory drivers of liking in Montepulciano wines from Brazil and beyond. *Beverages*, 11(3).
- Montoya, C. A., Ulluwishewa, D., Ahlborn, N. G., Roy, N. C., & McNabb, W. C. (2025). Heat treatment of bovine milk influences gastric emptying of lactose but not its apparent small intestinal disappearance in the growing pig as a model for the adult human. *Journal of Nutrition*, 155(2), 533–539.
- Muhl, J. R., Pilkington, L. I., Fedrizzi, B., & Deed, R. C. (2025). Investigating the factors driving concentrations of volatile thiols and their precursors in white wines: The impact of Botrytis cinerea and grape variety. *Food Chemistry*, 479.
- Muthulingam, P., Popovich, D. G., Nimal Punyasiri, P. A., Nanayakkara, C. M., Mesarich, C. H., & Rashidinejad, A. (2025). Development of a validated efficient HPLC-DAD analysis for assessing polyphenol transformation during black tea processing. *Journal of Food Composition and Analysis*, 148.
- Nagahawatte, N. D., Agrawal, S., Zhang, H., Rogers, J. M., Avci, R., Du, P., Paskaranandavadi, N., & Cheng, L. K. (2025). Electro-mechanical mapping of the small intestine and the influence of high-energy pacing. *Neuromodulation*.
- Nagahawatte, N. D., Du, P., Zhang, H., Patton, H. N., Rogers, J. M., Paskaranandavadi, N., & Cheng, L. K. (2025). Influence of isoflurane and propofol on gastric slow wave patterns and pacing efficacy in pigs. *American Journal of Physiology - Gastrointestinal and Liver Physiology*, 329(3), G457–G468.
- Nezbedova, L., McGhie, T., Mehta, S., Christensen, M., Nasef, N. A., & Heyes, J. (2025). Using the orchard-to-fork approach in designing nutritional trials: the apple phenolics case. *Analytical Methods*, 17(14), 2878–2886.
- Ng, H. M., Maggo, J., Wall, C. L., Bayer, S. B., Mullaney, J. A., Cabrera, D., Fraser, K., Cooney, J. M., Günther, C. S., McNabb, W. C., Foster, M., Frampton, C., Geary, R. B., & Roy, N. C. (2025). Effects of defatted rice bran-fortified bread on gut microbiome, cardiovascular risk, gut discomfort, wellbeing and gut physiology in healthy adults with low dietary fibre intake. *Clinical Nutrition ESPEN*, 67, 362–376.
- Ng, H. M., Wall, C. L., Bayer, S. B., Geary, R. B., & Roy, N. C. (2025). The interconnection between dietary fibre, gut microbiome and psychological well-being. *Proceedings of the Nutrition Society*.
- Ni Mhurchu, C., Rosin, M., Shen, S., Kidd, B., Umali, E., Jiang, Y., Gerritsen, S., Mackay, S., & Te Morenga, L. (2025). Is a voluntary healthy food policy effective? Evaluating effects on foods and drinks for sale in hospitals and resulting policy changes. *BMC Medicine*, 23(1).
- Ombasa, L., Miller, J., Ware, L., Abbotts-Holmes, H., Tang, J., Gasser, O., Fraser, K., Bayer, S., Kemp, R., Costello, R., Highton, A., Evans, J., Merry, T., Schultz, M., Frampton, C., Geary, R., McNabb, W., & Roy, N. (2025). Impact of mānuka honey on symptoms and quality of life in individuals with functional dyspepsia: Protocol for a feasibility randomized controlled trial. *JMIR Research Protocols*, 14.
- Palmada, N., Cater, J. E., Cheng, L. K., & Suresh, V. (2025). Quantifying the role of duodenal shape in flow and mixing: A computational fluid dynamics study on anatomically diverse models. *IEEE Transactions on Biomedical Engineering*.
- Peng, M., McCormack, J. C., Abeywickrema, S., Wang, Q. J., Roberts, R., & Spence, C. (2025). Craving what you imagine: How sensory mental imagery relates to trait food craving and BMI. *Appetite*, 210.
- Perera, T. S. H., Rush, E., Wham, C., & Rowlands, D. S. (2025). Reliability of a modified 24 h dietary recall and veggie meter to assess fruit and vegetable intake in New Zealand children. *Nutrients*, 17(20).
- Punzalan, J., Hartono, P., Fraser-Miller, S., Leong, S., Sutton, K., Moggie, G. J., Oey, I., & Gordon, K. (2025). Fingerprinting of semi-refined flaxseed protein using Raman spectroscopy and multivariate analysis: Pulsed electric field (PEF)-assisted alkali and aqueous extraction methods alter composition and protein conformation. *Journal of Raman Spectroscopy*.

- Punzalan, J. M., Hartono, P., Fraser-Miller, S. J., Leong, S. Y., Sutton, K., Moggre, G. J., Gordon, K. C., & Oey, I. (2025). MicroNIR spectroscopy with chemometric analysis provides rapid protein content evaluation and prediction of semi-refined flaxseed protein extract produced via pulsed electric field (PEF)-assisted extraction. *Food Chemistry*, 473.
- Qazi, H. J., Ye, A., Acevedo-Fani, A., & Singh, H. (2025). Delivery of encapsulated bioactive compounds within food matrices to the digestive tract: recent trends and future perspectives. *Critical Reviews in Food Science and Nutrition*, 65(15), 2921–2942.
- Rajendran, S., Khomenko, I., Silcock, P., Betta, E., Biasioli, F., & Bremer, P. (2025). The use of proton-transfer-reaction time-of-flight mass spectrometry (PTR-ToF-MS) to determine the volatile organic compounds (VOCs) produced by different lactic acid bacterial strains growing in defined media. *Applied Microbiology (Switzerland)*, 5(1).
- Ren, S., Chen, B., Dhupia, J. S., Stommel, M., & Xu, W. (2025). Analyzing food bolus formation during chewing through image segmentation. *Engineering Applications of Artificial Intelligence*, 160.
- Renall, N., & te Morenga, L. (2025). Māori food culture and wellbeing on TikTok: a content and thematic analysis. *Kotuitui*, 20(4), 763–780.
- Reynolds, A. N., Lang, J., Brand, A., & Mann, J. (2025). Higher fiber higher carbohydrate diets better than lower carbohydrate lower fiber diets for diabetes management: Rapid review with meta-analyses. *Obesity Reviews*, 26(1).
- Roy, D., Montoya, C. A., Stroebinger, N., Hodgkinson, S. M., Ye, A., McNabb, W. C., Moughan, P. J., & Singh, H. (2025). Gastric protein digestion of cow, goat, and sheep milk is not reflected in the amino acid appearance in the blood of suckling piglets. *Journal of Dairy Science*, 108(6), 5598–5610.
- Rush, E., Curran-Cournane, F., & McDowell, R. (2025). Feeding Aotearoa New Zealand people better: from farm to fork. *Journal of the Royal Society of New Zealand*.
- Salehi, M., & Rashidinejad, A. (2025). Multifaceted roles of plant-derived bioactive polysaccharides: A review of their biological functions, delivery, bioavailability, and applications within the food and pharmaceutical sectors. *International Journal of Biological Macromolecules*, 290.
- Sequeira-Bisson, I. R., Fraser, K., Leiu, K. H., Penhaligan, J., Joblin-Mills, A., Plank, L. D., Murphy, R., Taylor, M. W., Gasser, O., Conroy, D. M., Jiang, Y., Lu, L. W. W., Poppitt, S. D., & Miles-Chan, J. L. (2025). Design and conduct of a full diet-controlled, parallel, 2-week residential trial for diabetes prevention without weight loss in Asian Chinese and European Caucasian adults with prediabetes: the New Zealand SYNERGY study. *Frontiers in Nutrition*, 12.
- Shahin, A., Ross, A., Green, S., Mann, J., & Reynolds, A. N. (2025). Are metabolite markers of food intake ready for real-world application? Systematic review with dose response meta-analyses. *Trends in Food Science and Technology*, 163.
- Shippey, D., Vignes, M., McNabb, W., & Smith, N. W. (2025). Sensitivity analysis of global food and nutrition modelling. *Food Security*.
- Silva, B., Sringarm, K., Potikanond, S., Tangjaidee, P., Buacheen, P., Rachtanapun, P., Donlao, N., Singh, J., Kaur, L., Issara, U., Kingwascharapong, P., & Phongthai, S. (2025). Unveiling anti-inflammatory peptides from Lion's Mane mushroom (*Hericium erinaceus*): Preparation, bioactivity assessment, and peptides identification. *Applied Food Research*, 5(2).
- Simmonds, S., Huizinga, J. D., Taberner, A. J., Du, P., & Angeli-Gordon, T. R. (2025). Electromechanical coupling across the gastroduodenal junction. *Acta Physiologica*, 241(3).
- Simmonds, S., Wang, T. H. H., Matthee, A., Dowrick, J. M., Taberner, A. J., Du, P., & Angeli-Gordon, T. R. (2025). Pharmaceutical prokinetic and surgical interventions have opposing effects on gastroduodenal electromechanical coupling. *Acta Physiologica*, 241(5).
- Singh, J., Ajomiwe, N., & Kaur, L. (2025). Physico-chemical, microstructural, and cooking characteristics of faba bean (*Vicia faba*) varieties from New Zealand. *Legume Science*, 7(3).
- Smith, N. W., & Beal, T. (2025). Micronutrient density of the global food supply. *Food Frontiers*, 6(3), 1588–1592.
- Smith, N. W., Fletcher, A. J., & McNabb, W. (2025). Alternative protein-based foods must contribute to micronutrient adequacy. *Journal of the Royal Society of New Zealand*, 55(6), 1511–1521.
- Smith, N. W., McDowell, R. W., Smith, C., Foster, M., Eason, C., Stephens, M., & McNabb, W. C. (2025). Gaps in environmental and social evidence base are holding back strategic action on our national food system. *Journal of the Royal Society of New Zealand*.
- Soh, B. X. P., Smith, N. W., Von Hurst, P. R., & McNabb, W. C. (2025). Achieving high protein quality is a challenge in vegan diets: A narrative review. *Nutrition Reviews*, 83(7), e2063–e2081.
- Soh, B. X. P., Vignes, M., Smith, N. W., von Hurst, P. R., & McNabb, W. C. (2025). Evaluation of protein intake and protein quality in New Zealand vegans. *PLoS ONE*, 20 (4 April).
- Soh, B. X. P., Vignes, M., Smith, N. W., von Hurst, P. R., & McNabb, W. C. (2025). Protein intake and protein quality patterns in New Zealand vegan diets: An observational analysis using dynamic time warping. *Nutrients*, 17(11).
- Solanki, D., Punzalan, J. M., Oey, I., Meriaux, A., Gordon, K. C., Bhandari, B., Sahu, J. K., & Prakash, S. (2026). Non-thermal extraction and modification of chia seed mucilage using pulsed electric field. *Food Hydrocolloids*, 172.
- Starck, C. S., Wolfe, R. R., & Moughan, P. J. (2025). Toward a dynamic model of indispensable amino acid requirements of the adult human: A factorial estimate of oxidative amino acid losses. *Journal of Nutrition*, 155(1), 338–352.
- Strom, J., Te Ao, B., Rush, E., & Mackay, S. (2025). How has the cost of feeding New Zealand children well changed from 2018 to 2023? Monthly price changes of a modelled lower-cost healthy diet. *Journal of the Royal Society of New Zealand*, 55(6), 2319–2333.
- Sullivan, J. V., Currie, M. J., Morris, V. K., Sethi, A., Panjikar, S., Smith, G. R., Meisrimler, C. N., & Dobson, R. C. J. (2026). Expression and purification of *Austropuccinia psidii* effector proteins in *Escherichia coli*. *Protein Expression and Purification*, 237.
- Swackhamer, C., Doan, R., Lu, Y., Nitin, N., & Bornhorst, G. M. (2025). Fracture and rheological properties of standardized, model solid foods influence their breakdown mechanisms during in vitro gastric digestion with simulated peristalsis. *Food Hydrocolloids*, 168.
- Tao, M., Abdollahi, A., Willmott, G. R., Quek, S. Y., & Huang, K. (2026). Surface engineering of yeast microcarriers to enhance droplet retention and antimicrobial efficacy on hydrophobic plant surfaces. *Colloids and Surfaces B: Biointerfaces*, 257.
- Tarhan, Ö., Venerando, A., Falsafi, R., Rostamabadi, H., Rashidinejad, A., Capanoglu, E., Tomas, M., Can Karaca, A., Lee, C. C., Pourjafar, H., & Jafari, S. M. (2025). Minimization of protein allergenicity in food products through conventional and novel processes: A comprehensive review on mechanisms, detection, and applications. *Food Reviews International*.
- Tavan, M., Smith, N. W., Fletcher, A. J., Hill, J. P., & McNabb, W. C. (2025). Nutrient-adequate diets with the lowest greenhouse gas emissions or price are the least acceptable – insights from dietary optimisation modelling using the iOTA model®. *Frontiers in Nutrition*, 12.
- Tavan, M., Smith, N. W., McNabb, W. C., & Wood, P. (2025). Reassessing the sustainability promise of cultured meat: a critical review with new data perspectives. *Critical Reviews in Food Science and Nutrition*.
- Thongkong, S., Rakairiyatham, K., Tangjaidee, P., Unban, K., Klangpetch, W., Phimolsiripol, Y., Rachtanapun, P., Rawdkuen, S., Singh, J., Kaur, L., Issara, U., Kingwascharapong, P., & Phongthai, S. (2025). Partial hydrolyzed protein as an alternative stabilizer for peanut (*Arachis hypogaea*) butter. *Food Chemistry: X*, 29.
- Tian, C., Punzalan, J. M., Becker, P., Bohaty, L., Gordon, K. C., Blaikie, R., Schwefel, H. G. L., & Sedlmeir, F. (2025). Cascaded Raman lasing in a lithium tetraborate whispering gallery mode resonator. *Photonics Research*, 13(8), 2232–2239.
- Tonetto, M. L., Lopes Teixeira, G., Amboni, R. D. D. M. C., Block, J. M., Bornhorst, G. M., Laurindo, J. B., & Feltes, M. M. C. (2025). Upcycling Brazil nut press cake as an ingredient of an innovative spread and evaluation of its nutritional, functional, and sensory properties. *Journal of the Science of Food and Agriculture*, 105(8), 4306–4316.
- Tonetto, M. L., Taha, A. Y., Laurindo, J. B., Feltes, M. M. C., & Bornhorst, G. M. (2025). Brazil nut press cake-enriched spread: unveiling in vitro gastrointestinal digestion behavior and its effects on nutrient release. *Food Research International*, 221.
- Uchizawa, A., & Miles-Chan, J. L. (2025). Practical applications and challenges of bioelectrical impedance when strict standardization of measurement conditions is not feasible. *European Journal of Clinical Nutrition*, 79(12), 1233–1234.
- Van Der Wielen, N., Zhang, H., Schouten, P. J. C., Meulenbroeks, E., Stroebinger, N., Hodgkinson, S. M., Mensink, M., Hendriks, W., & Capuano, E. (2025). Exploring in vitro production of colonic microbial metabolites from diverse protein sources using human ileal digesta. *Food Chemistry*, 495.
- Wagner, J., & Hort, J. (2025). A practical evaluation of biometric measures for understanding the consumer experience during direct product evaluation: current and future perspectives. *Current Opinion in Food Science*, 63.
- Wagner, J., Poggesi, S., Maggs, R., & Hort, J. (2026). The effect of emotional music on Just-About-Right and speeded-responses to chocolate. *Food Quality and Preference*, 136.
- Walallawita, U. S., Wolber, F. M., Ziv-Gal, A., Kruger, M. C., & Heyes, J. A. (2025). Small daily doses of orange heirloom (“Moonglow”) tomatoes dose-dependently increase plasma and liver lycopene concentrations in rats. *Bioscience, Biotechnology and Biochemistry*, 89(6), 876–883.
- Wang, X., Chen, B., Dhupia, J., Morgenstern, M. P., & Xu, W. (2025). In vitro robotic chewing studies of food texture changes during mastication. *Journal of Texture Studies*, 56(5).
- Wang, X., Chen, B., Dhupia, J. S., Bronlund, J. E., Han, J., & Xu, W. (2025). Conceptualization and mechanical design of a cam-follower-based chewing robot with three oral chambers. *IEEE Access*, 13, 26752–26764.
- Wang, X., Zhang, L., Mao, Y., McGillivray, D. J., & Wang, Z. (2025). ChEdu: A guided AI teaching assistant for chemistry education and exam support. *Journal of Chemical Education*, 102(12), 5347–5354.
- Wang, X., Zhu, P., Ye, A., Singh, H., & Acevedo-Fani, A. (2025). Interfacial composition of coenzyme Q10 emulsions impacts coagulation of fortified milk during gastric digestion. *Food Research International*, 203.
- Wang, Y., Liu, H., Sun, L., Dou, B., Zhang, S., Xin, J., Chen, F., Quek, S. Y., & Zhang, N. (2025). Molecular mechanism of taurine promotes the interaction between rice starch and soy lecithin. *International Journal of Biological Macromolecules*, 310.

Wang, Y., Liu, T., Han, T., Xie, J., Sun, L., Zhang, S., Dou, B., Xin, J., Quek, S. Y., & Zhang, N. (2025). Construction and characterization of novel starch-oleic acid conjugates catalyzed by microwave-assisted lipase reaction. *International Journal of Biological Macromolecules*, 306.

Wang, Y., Song, W., Liu, T., Sun, L., Dou, B., Zhang, S., Xin, J., Quek, S. Y., & Zhang, N. (2025). An effective method to synergistically regulate the physicochemical and digestive properties of starch-fatty acid complexes: Change the ratio of SDS and RS. *Carbohydrate Polymers*, 353.

Wasana, W. P., Waterland, M., Everett, D. W., & Thum, C. (2025). Functional significance of probiotic bacterial interactions with milk fat globules in a human host. *Microorganisms*, 13(2).

Wijenayaka, S., Clark, A. R., Gerneke, D., Avci, R., Cheng, L. K., & Du, P. (2025). Detailed microCT imaging protocol for ex vivo rat stomachs with comparative analysis. *Scientific Reports*, 15(1).

Wilson, B. C., Zuppi, M., Derraik, J. G. B., Albert, B. B., Tweedie-Cullen, R. Y., Leong, K. S. W., Beck, K. L., Vatanen, T., O'Sullivan, J. M., Cutfield, W. S., Wilson, B., Vickers, M., Svirskis, D., Schierding, W., Portlock, T., Pook, C., O'Sullivan, J., Leong, K., Jiang, Y., . . . Albert, B. (2025). Long-term health outcomes in adolescents with obesity treated with faecal microbiota transplantation: 4-year follow-up. *Nature Communications*, 16(1).

Wu, Y., Yan, Y., Xiong, X., Li, R., Duan, S., Tang, M., Szeto, I. M., Liu, H., Hodgkinson, S. M., Moughan, P. J., Wescombe, P., Wang, J., & Yin, Y. (2025). Effect of different ratios of α -lactalbumin to β -casein in infant formula on true ileal digestibility and intestinal morphology of suckling piglets. *Journal of Agricultural and Food Chemistry*, 73(10), 6144–6150.

Xie, A., Shen, X., Hong, R., Xie, Y., Zhang, Y., Chen, J., Li, Z., Li, M., Yue, X., & Quek, S. Y. (2025). Unlocking the potential of donkey milk: Nutritional composition, bioactive properties and future prospects. *Food Research International*, 209.

Yang, C., Leong, S. Y., King, J., Kim, E. H. J., Peng, M., Agyei, D., Morgenstern, M. P., H Sutton, K., & Oey, I. (2025). Modulating oral breakdown and digestibility of wheat pasta through pea protein incorporation. *Food Research International*, 221.

Yang, M., Yang, Z., Everett, D. W., Gilbert, E. P., Singh, H., & Ye, A. (2025). Digestion of food proteins: the role of pepsin. *Critical Reviews in Food Science and Nutrition*.

Yang, M., Ye, A., Yang, Z., Everett, D. W., de Campo, L., Singh, H., & Gilbert, E. P. (2025). Probing structural modification of milk proteins in the presence of pepsin and/or acid using small- and ultra-small-angle neutron scattering. *Food Hydrocolloids*, 159.

Yin, H., Fang, E. S., Kearny, T., Miroso, M., & Guenther, P. (2026). The role of consumer involvement in cue use during food purchasing decisions: The moderating effect of consumer familiarity. *Journal of Retailing and Consumer Services*, 88.

Yu, H., Shi, H., Ye, A., Liu, J., Han, J., & Liu, W. (2025). Calcium supplementation strategies for older people: calcium fortification in whole grain beverages. *Trends in Food Science and Technology*, 164.

Yu, J., Muhl, J. R., Zhai, X., Wan, X., Jelley, R. E., & Fedrizzi, B. (2025). Insights into the presence and distribution of polyfunctional thiols and their conjugates in different types of tea. *Food Chemistry*, 492.

Zhang, J., Plowman, J., Clerens, S., Vanhanen, L., & On, S. L. W. (2025). Decoding brewing yeast signatures: a MALDI-TOF MS approach to strain identification and beer style correlation. *Journal of Applied Microbiology*, 136(12).

Zhang, Q., Song, Y., Jiang, Y., Ye, A., Gao, Z., Jiang, K., & Fu, L. (2025). Molecular mechanism of glycation structure-mediated immune recognition and sensitization by typical milk allergens. *Journal of Agricultural and Food Chemistry*, 73(34), 21566–21577.

Zhang, R., Farouk, M. M., Realini, C. E., & Thum, C. (2025). Hybridization in meat-based dual protein foods: Mechanisms, challenges, and consumer insights. *Comprehensive Reviews in Food Science and Food Safety*, 24(4).

Zhang, R., Jacob, N., Thum, C., Realini, C. E., & Farouk, M. M. (2026). Hybridisation of yearling beef mince with *Chlorella* biomass and nutritional yeast in patty and soft jerky model systems. *Meat Science*, 232.

Zhang, R., Khan, A., Singh, J., & Kaur, L. (2025). Phlorotannins from New Zealand brown seaweeds: Extraction, antioxidant activity, and food applications. *Food Chemistry Advances*, 9.

Zhang, R., Zhang, W., Dong, X., Woo, M. W., & Quek, S. Y. (2025). Modification of hempseed protein isolate using a novel two-stage method applying high-pressure homogenization coupled with high-intensity ultrasound. *Ultrasonics Sonochemistry*, 112.

Zhang, Y., Burrow, K., Kim, E. H. J., Morgenstern, M. P., Chelikani, V., & Serventi, L. (2025). Effect of pea (*Pisum sativum*) cooking water on the in vitro predicted glycaemic response of wheat pasta. *Journal of the Science of Food and Agriculture*.

Zheng, H., Jiménez-Flores, R., & Everett, D. W. (2025). The impact of sphingomyelin and cholesterol on ordered lipid domain formation in the bovine milk fat globule membrane using artificial giant unilamellar vesicles as a model. *JDS Communications*, 6(4), 485–489.

Zheng, L., Di, Q., Xu, X., Liu, L., Qu, C., Bremer, P., & Zhou, X. (2025). Phenotypic and WGS-derived antibiotic resistance patterns of *Salmonella enteritidis* isolates from retail meat and environment during 2014 to 2019 in China. *Frontiers in Microbiology*, 16.

→ BOOKS

Gunasekaran, S., Ak, M. M., Everett, D. W. (2025). *Cheese Rheology and Texture*. CRC Press.

McSweeney, P. L. H., Cotter, P. D., & Everett, D. W., Govindasamy-Lucey, R., (2025). *Cheese: Chemistry, Physics and Microbiology*. (5th Ed). Elsevier.

Moughan, P. J., Verstegen, M. W. A., & Visser-Reyneveld, M. I., Eds. (2025). *Feed evaluation: Principles and practice*. Brill.

→ BOOK CHAPTERS

Abhilasha, A., Kaur, L., & Singh, J. (2025). Wheat grain microstructure and starch digestion. In Vega-Castro, O. A., et al. (Eds), *Selected Topics in Food Process Engineering*. ICEF 2023. *Food Engineering Series*. Springer, Cham.

Ajala, A., Yolacaner, E. T., Colussi, R., Kaur, L., & Singh, J. (2025). Digestibility and glycaemic features of starches. In Miao, M., Chen, L., and BeMiller, J. N. (Eds), *Handbook of Starch Science and Technology* (pp. 317–335). CRC Press.

Bunyameen, N., Zhang, R., Singh, J., & Kaur, L. (2025). Impacts of pulsed electric field treatment on protein structure and functionality. In Falsafi, S. R., Rostamabadi, H., and Rastogi, N. K. (Eds), *Non-thermal Processing of Major Food Macromolecules* (pp. 119–139). Elsevier.

Hodgkinson, S. M. (2025). Protein sources and determining ileal amino acid digestibility. In Preedy, V. R. (Ed), *Protein Intake in Health and Disease* (pp. 172–183). CRC Press.

Hodgkinson, S. M., & Moughan, P. J. (2025). Amino acids: Digestibility, availability and metabolism. In Moughan, P. J., Verstegen, M. W. A., and Visser-Reyneveld, M. I. (Eds), *Feed Evaluation: Principles and Practice*, (pp. 125–132). Brill.

Hodgkinson, S. M., & Moughan, P. J. (2025). Amino acids: The collection of ileal digesta and characterisation of the endogenous component. In Moughan, P. J., Verstegen, M. W. A., and Visser-Reyneveld, M. I. (Eds), *Feed Evaluation: Principles and Practice* (pp. 105–124).

Rutherford, S. M., & Moughan, P. J. (2025). Developments in the determination of protein and amino acids. In Moughan, P. J., Verstegen, M. W. A., and Visser-Reyneveld, M. I. (Eds), *Feed Evaluation: Principles and Practice* (pp. 45–56). Brill.

Rutherford, S. M., & Moughan, P. J. (2025). Principles of chemical analysis. In Moughan, P. J., Verstegen, M. W. A., and Visser-Reyneveld, M. I. (Eds), *Feed Evaluation: Principles and Practice* (pp. 33–43). Brill.

Whitby, C. P. (2025). Recent advances in controlling emulsion stability. In Miller, R., and Eduardo Guzmán-Solis (Eds), *Emulsions* (pp. 263–295). CRC Press.

Wonglek, S., Abhilasha, A., Kaur, L., & Singh, J. (2025). Starch modification with cold plasma treatment. In Falsafi, S. R., Rostamabadi, H., and Rastogi, N. K., (Eds), *Non-thermal Processing of Major Food Macromolecules* (pp. 269–291). Elsevier.

→ CONFERENCE PROCEEDINGS

Feng, J., Corfe-Tan, N., Wallace, S., Ha, B., Cho, J., Pidakala, P., Seymour, S., Orchard, S., Anson, J., Guo, L., White, A., Currie, M., Currie, A., Langdon-Arms, S., Popowski, E., & Harker, R. (2025). Developing rationalised methods to measure and interpret kiwifruit firmness. *International Society for Horticultural Science*. Proceedings from the XI International Symposium on Kiwifruit, Mount Maunganui, NZ, 2024, pp. 79-86.

Ha, B., Jaeger, S. R., Hunter, D., & Harker, F. R. (2025). Sensory research of kiwifruit: a journey. *International Society for Horticultural Science*. Proceedings from the XI International Symposium on Kiwifruit, Mount Maunganui, NZ, 2024, pp. 265-270.

Jiang, S., Kazemi, S., Stommel, M., Cheng, L. K., & Xu, W. (2025). Towards a robotic in vitro testing of intragastric balloons – Challenges and opportunities from a robotics perspective. *Institute of Electrical and Electronics Engineers Inc*. Proceedings from 2025 31st International Conference on Mechatronics and Machine Vision in Practice (M2VIP), Taguig, Philippines, 2025, pp. 14-18.

Zhao, R., Wang, X., Dhupia, J. S., & Xu, W. (2025). Multimodal sensors integration in robotic mastication simulator for comprehensive food texture analysis. *Institute of Electrical and Electronics Engineers Inc*. Proceedings from 2025 31st International Conference on Mechatronics and Machine Vision in Practice (M2VIP), Taguig, Philippines, 2025, pp. 327-334.

Zhou, Y., Chen, G., Xue, B., Zhang, M., Rooney, J. S., Gordon, K. C., & Killeen, D. P. (2025). Genetic programming for high-level multi-spectral data fusion in fish biochemical analysis. *Institute of Electrical and Electronics Engineers Inc*. Proceedings from 2025 IEEE Congress on Evolutionary Computation (CEC), Hangzhou, China, 2025, pp. 1-8.

Zhou, Y., Chen, G., Xue, B., Zhang, M., Rooney, J. S., Lagutin, K., MacKenzie, A., Gordon, K. C., & Killeen, D. P. (2025). Machine learning for Raman spectroscopy-based cyber-marine fish biochemical composition analysis. *Springer Science*. In *Neural Information Processing*. Proceedings, Part VII, from 31st International Conference, ICONIP 2024, Auckland, New Zealand, December 2–6, 2024.



Riddet Institute

ADVANCING FRONTIERS IN FOOD SCIENCE

A NEW ZEALAND CENTRE OF RESEARCH EXCELLENCE
HOSTED BY MASSEY UNIVERSITY

Riddet Institute / Massey University, Private Bag 11 222 / Palmerston North / New Zealand

Tel: +64 6 951 7295 / email: info@riddet.ac.nz / web: www.riddet.ac.nz



This publication uses vegetable based inks and environmentally responsible paper produced from Forest Stewardship Council® (FSC®) certified, Mixed Source pulp from Responsible Sources.



Paper produced using Elemental Chlorine Free (ECF) and manufactured under the strict ISO14001 Environmental Management System.