



EMPOWERING EMCRS TO LEAD THE FUTURE OF THE SCIENCE OF NUTRITION

A THEO MURPHY INITIATIVE

26 JULY 2023

COLLINS SQUARE EVENTS CENTRE, MELBOURNE

SUMMARY REPORT

Contents

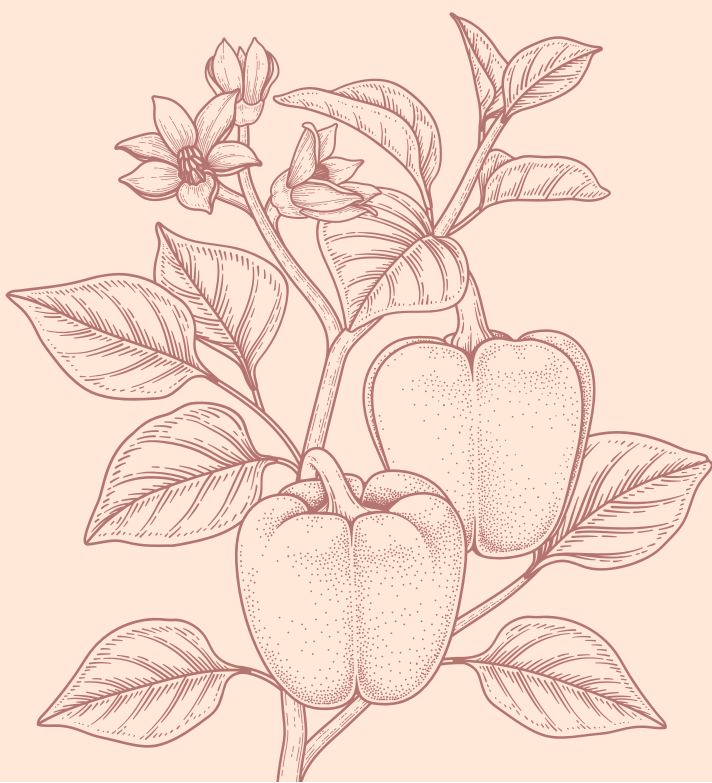
Foreword	01
Reflection	02
Program of events	03
Introduction	04
Working group summaries	
National Capability for Nutrition Data	05
Trusted Voice for Nutrition	08
Nutrition Mechanisms	11
Nutrition Education and Research Training	14
Societal Determinants	17
Skills sessions presenters	20
Speakers	22
Next steps	23
References	24

The Australian Academy of Science acknowledges and pays respects to the Traditional Owners and the Elders past, present and emerging of all the lands on which the Academy operates and its Fellows live and work. They hold the memories, traditions, cultures and hopes of Aboriginal and Torres Strait Islander peoples of Australia. This event was held in Naarm, the traditional lands of the Kulin Nation.

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How to cite this report: National Committee for Nutrition (2023). Empowering EMCRs to lead the future of the science of nutrition summary report (Australian Academy of Science).



Foreword

It is hard to believe that *Nourishing Australia: A decadal plan for the science of nutrition* is almost five years old. Since its publication in 2019, our society and environment have evolved significantly, highlighting the food-related challenges Australia faces and our distance from meeting the *Sustainable Development Goals* set out by the World Health Organization.

The recent experience of COVID-19 exposed the vulnerability of our food system. Climate change dominates our newsfeeds, revealing its far-reaching effects on the agri-food system, energy prices, and underscoring the urgent need to safeguard our environment. We have grown more aware of health disparities, particularly the gap between Indigenous and non-Indigenous Australians. There is a heightened awareness of the need to listen and learn from Indigenous ways of being, knowing and doing that has enabled Aboriginal and Torres Strait Islanders to live in harmony with their environment for millennia.

The National Committee for Nutrition (NCN) acknowledges the need to adapt in our ever-changing world to achieve the decadal plan's goals effectively. It is the role of the NCN to foster collaboration among key stakeholders to realise *Nourishing Australia's* objectives. This has required governance changes, including inviting prominent peak bodies to hold ex-officio positions on the NCN. As of 2024, an Implementation Sub-committee will oversee actionable goals arising from this Theo Murphy symposium.

We have prioritised providing opportunities for early- and mid-career researchers (EMCRs) to assume leadership roles on the NCN and the working groups that will operationalise the implementation plans. EMCRs now comprise 50% of NCN members, reflecting the commitment of the Australian Academy of Science to support EMCRs in engaging with decision-makers, including government policymakers.

The *discussion papers* constructed by EMCRs at the 2017 Theo Murphy Think Tank form the background to the logic models which will be developed by working groups following conversations held at this year's symposium. For many EMCRs, understanding and applying implementation science methods is a new skill that may be applied to their own research.

At this Theo Murphy symposium, we envisioned a world where we can harness and activate the food and nutrition system from readiness to change into action. By refocusing our efforts and defining achievable goals, we will propel nutrition science forward and create the environment and infrastructure required to support EMCRs in their research journeys.



Professor Helen Truby, PhD, AdvAPD, FNSA, FAFN
Chair, National Committee for Nutrition
Professorial Research Fellow, University of Queensland
Professor (Research) Monash University

Reflection

Nutrition science is a relatively young and rapidly evolving scientific discipline with profound implications for human health and the Australian economy. Therefore, it is of paramount importance to empower early- and mid-career researchers (EMCRs) to spearhead and execute strategic plans for the future, including the implementation of *Nourishing Australia*. The development of the decadal plan, from its inception to publication, has been significantly shaped by EMCRs. Thanks to the support from the Theo Murphy Initiative (Australia), a new generation of EMCRs has been equipped with enhanced skills and connected to the strategic vision for the future of our field.

The symposium brought together approximately 70 participants, including PhD candidates, post-doctoral researchers, academics, practitioners, policymakers, and other stakeholders, along with the National Committee for Nutrition at the Australian Academy of Science. The value of this opportunity to create connections across different sub-disciplines, workplaces, and geographical locations cannot be overstated, especially as we move forward with the implementation of the decadal plan. The diverse array of attendees has fostered a rich tapestry of perspectives, which will result in a multitude of innovative pathways and avenues for implementation.

The skill-building portion of the day was an opportunity for EMCRs to develop the skills required to lead our field and drive the successful execution of the decadal plan. This involved demystifying policy practices, emphasising the significance of effective communication, and featuring insights from panelists representing various roles within the community, all of whom offered unique perspectives on building trust in our science.

The workshop component of the symposium provided EMCRs with a platform to delve into the specifics of the decadal plan's pillars and explore strategies for their implementation. This included active listening, learning from others, and sharing individual visions for the most appropriate and optimal implementation strategies. The working groups that emerged from these sessions now stand empowered and inspired, ready to take the lead in driving the plan's successful implementation.

At this symposium, EMCRs who attended the 2017 Theo Murphy High Flyers Think Tank had the opportunity to reflect on the remarkable progress we have made since then, both as individuals and as a discipline. The Theo Murphy experience has yielded numerous benefits, including expanded networks, improved core skills, and an ability to strategise for the future.



Dr Emma Beckett

Member, National Committee for Nutrition
Senior Lecturer, University of Newcastle

Program of events

8.30 AM	Registration
9:00 AM	Acknowledgement of Country Professor Helen Truby Symposium opening and overview Professor Rachel Webster AO FAA Associate Professor Shelley Wilkinson
9:30 AM	Skills session 1: Engaging with policymakers Dr Hayley Teasdale
10.15 AM	Skills session 2: Communicating the decadal plan Dr Tim Crowe Dr Anneline Padayachee
11.00 AM	Morning tea
11.30 AM	Skills session 3: How organisations build trust Dr Maree Ferguson Professor Vicki Flood Jane Martin Natalie Stapleton Nicole Turner
12.30 PM	Lunch
1.30 PM	Key priority working groups: Discussion session
2.45 PM	Afternoon tea
3:15 PM	Key priority working groups: Planning session
4:30 PM	Working group presentations and next steps
5:00 PM	Wrap up and close



Introduction

In 2017, the Theo Murphy High Flyers Think Tank 'Rethinking Food and Nutrition Science' convened a gathering of 60 early- and mid-career researchers (EMCRs) to discuss the future of nutrition science in Australia, with the aim of inspiring the nutrition community to action. This event served as a springboard for the development of *Nourishing Australia: a decadal plan for the science of nutrition*, published by the National Committee for Nutrition (NCN) in 2019. Five years later, it is an opportune time to revisit the plan's key goals and prepare for the next stage of implementation.

This one-day symposium focused on accelerating the implementation of *Nourishing Australia*, with EMCR participants having the chance to review the plan's progress to date, set new objectives, and collaborate with organisational influencers and stakeholders to develop implementation strategies for key recommendations and priority areas, including:

- establishing a 'trusted voice' for nutrition science in Australia;
- developing a national capability for nutrition data;
- enhancing nutrition education and research training;
- analysing nutrition mechanisms to identify the relationships between diet and health.

The primary goal of this symposium was to empower EMCRs to take an active role in leading the implementation of the plan's recommendations. The symposium encouraged EMCRs to take ownership of the promotion and execution of specific goals, with a commitment to driving progress towards achieving their respective objectives by 2030. The event was aimed at EMCRs who were interested in building the necessary skills, knowledge and confidence to manage key stakeholder organisations and devise effective implementation strategies, and invited EMCRs to contribute meaningfully towards the decadal plan implementation to shape the future of nutrition science in Australia.

The NCN encourages participants to continue the important progress made at the symposium through the ongoing initiatives of their working groups.

Working group summaries

National Capability for Nutrition Data

Background

A [discussion paper](#) from the 2017 Theo Murphy High Flyers Think Tank outlined the current systemic challenges in Australia for generating, utilising, synthesising and translating nutrition-science evidence, with a lack of connection between collected datasets. These issues lead to difficulty in timely synthesis and critical appraisal of evidence for translation into practice, and development and monitoring of policies and guidelines.

Nourishing Australia proposes that a national data capability for nutrition science would create the evidence-base necessary to underpin a trusted voice for nutrition science and enable the four pillars of the plan. After publication of *Nourishing Australia*, members of the National Committee for Nutrition continued to progress the establishment of the data capability, engaging with key stakeholder organisations that resulted in an application for funding from the Australian Research Data Commons. Further discussion with organisations involved in digital infrastructure design established a need for a requirements analysis to improve the application for funding the data capability for nutrition.

The group sought to specify the objective of the platform, to define what data will be stored, who will have access, and the purposes for which access will be granted.

Outcomes

The objective of the platform is to create a sustainable, well-funded data repository focused on food and nutrient intake in Australia, aiming to improve the translation of research into practice. Key strengths and opportunities that formed the foundation for discussions about potential platform outcomes include the standardisation of methods and data sharing, and increased collaborative opportunities between research and other nutrition sectors, both nationally and internationally. Potential weaknesses and threats include concerns about data quality, ownership, and provenance, as well as issues related to equitable access and the legal and ethical aspects of data privacy. These points have guided the formulation of ideas for inputs and activities and indicate areas that require addressing as the platform develops.

Implications

The long-term goals of the platform are to:

- improve nutrition-related health outcomes for the Australian population;
- enable faster translation of research into practice; and
- facilitate an improved understanding of long-term trends and relationships between food, nutrition, and health data.

Four project themes have been identified: scoping existing databases, models and standardisation methods; stakeholder mapping and engagement; user consultation; and the scoping of ethical and legal requirements. These projects will inform the required analysis and funding applications to further develop the platform.

SWOT Analysis: National Capability for Nutrition Data

Strengths

- Standardised Australian nutrition data: Establishing a data-sharing platform ensures standardised data from research studies, promoting reusability and interoperability.
- Efficient resource utilisation: Accessing and reusing existing data prevents duplication and enhances the value of collected information.
- Timely nutrition data usage: Easy data access facilitates swift review and analysis, informing translational research, nutrition guidelines, and policies.
- Enhanced research power: Leveraging multiple datasets strengthens results and addresses reproducibility concerns.
- Effective collaboration: A catalogue of available Australian nutrition data fosters collaboration among researchers, clinicians, public health practitioners, and government organisations for data analysis, new collections, evidence synthesis, and translation.
- Data transparency and credibility: Improved visibility, reporting standards, and metadata enhance transparency in data collection and analysis, bolstering the credibility of findings.

Weaknesses

- Data format challenges: Diverse data formats from various sources pose hurdles in data combination, reusability, and interoperability.
- Data ownership issues: Reusing data raises concerns about ownership, necessitating the establishment of protocols and guidelines for users of the platform.
- Platform scalability concerns: The expansive scope of nutrition science, covering topics from mechanisms to policies, presents challenges in terms of space, data formats, ontologies, search capabilities, and data management if all are included on the platform.
- Ensuring data quality: While the platform aims to standardise metadata reporting and data formats, there is a risk that uploaded data may not meet quality standards.
- Achieving equitable data access: Determining who has access to the data and under what conditions is essential. Exploring a fee-for-access model for long-term platform maintenance should be considered, though it may introduce access disparities.

Opportunities

- National project collaboration: Explore opportunities for integration with national projects (e.g., Research Data Australia, Food Security Data, Child and Youth Health Atlas).
- Harnessing real-world data: Investigate the potential to connect with existing data sources like electronic health records, wearables, and social media data routinely collected through digital infrastructure.
- Global insights: Learn from international models of nationwide databases; the platform's development offers a chance to engage with researchers and developers worldwide.
- Nutrition professional development: Use of the platform will improve the skills of nutrition scientists, fostering expertise and providing leadership and career development opportunities to enhance data collection, analysis, and interpretation capabilities.

Threats

- Legal and privacy concerns: Potential legislative barriers, data security risks, privacy breaches, and misuse across jurisdictions.
- Data provenance: Essential documentation (metadata) to acknowledge data properly, including processes, methodologies, locations, timing, and contributors.

- Data relevance and bias: Ensuring data contemporaneity and representativeness, clarifying metadata guidelines for user filtering, and acknowledging potential population representation gaps.
- Funding and sustainability: Initial funding is necessary, but a sustainable, long-term model is crucial to achieving lasting impact.

Working group

EMCR participants

Dr Paige Brooker
CSIRO

Dr Oliver Canfell
University of Queensland

Dr Virginia Chan
University of Sydney

Dr Kaitlin Day
University of Melbourne

Naomi Fitzpatrick
University of the Sunshine
Coast

Dr Rebecca Leech
Deakin University

Dr Sherly Li
Cancer Council Victoria

Dr Laura Marchese
Deakin University

Dr Elizabeth Neale
University of Wollongong

**Dr Priscila Pereira
Machado**
Deakin University

Dr Emma Ridley
Monash University

Dr Tailane Scapin
Deakin University

Dr Matthew Snelson
Monash University



Chair: Dr Aimee Dordevic

Aimee Dordevic is Senior Lecturer at Monash University and a Registered Nutritionist with the Nutrition Society of Australia and the Association for Nutrition (UK). Her research involves molecular biology techniques to study how nutrients, lifestyle and disease states are linked through nutrigenomic interactions.



Professor Sarah McNaughton

Sarah McNaughton is Deputy Associate Dean (Research) for the Faculty of Health at the Institute for Physical Activity and Nutrition at Deakin University. She is an Accredited Practising Dietitian, Fellow of Dietitians Australia and a Registered Public Health Nutritionist.

National Committee for Nutrition attendees

Dr Daniel Hwang
University of Queensland

Trusted Voice for Nutrition

Background

The Trusted Voice platform of *Nourishing Australia* recommends the establishment of a national nutrition alliance that would serve as a reputable, unbiased, and evidence-driven authority to disseminate accurate information on healthy diets, and serve to scrutinise and potentially dispel diet trends and health assertions. The goal of this symposium was to develop a model and a roadmap for this envisioned trusted voice for nutrition science in Australia.

Outcomes

The working group identified the key objective of this initiative as improving nutrition-related health outcomes for both the general population and specific groups. To achieve this, it is crucial to enhance food and nutrition literacy across society through education efforts directed at the public, and through health professionals and educators. The working group recognised that such strategies may align with pillar 4 (Nutrition education and research training), but also necessitate distinct supporting policies to create enabling environments.

The working group focused on designing a "unified nutrition science voice" to government. The aim of such an alliance is to advocate for evidence-based nutrition policies and programs that have the potential to significantly impact public health and nutrition outcomes. By harnessing collective expertise, influence, and resources, this body will advocate for evidence-based policies and initiatives that effectively address nutrition challenges by:

- achieving positive changes in government nutrition policies and programs through the promotion of evidence-based approaches and closer alignment with scientific guidance;
- strengthening government engagement and collaboration by influencing policy decisions and fostering ongoing dialogue;
- promoting collaboration and synergy among nutrition organisations for collective impact - a unified voice for government and other stakeholders is a key differentiation;
- elevating the coalition's reputation and influence in the fields of nutrition and public health through increased media coverage and acknowledgement of expertise; and
- raising public awareness, engagement, and support for evidence-based nutrition policies while establishing the alliance as a trusted information source.

Implications

The formation of a unified voice in nutrition science has the potential to significantly impact public health in Australia. This coalition, committed to evidence-based policies, would enhance food security, reduce nutrition-related diseases, and promote a healthier population. Trust, both internal and external, is essential for establishing the alliance as an authoritative voice in nutrition science. The alliance should define clear membership criteria, ensure transparent governance, align with key strategy documents, and develop an initial issue advocacy plan to ensure success. This recommendation emphasises the alliance's role as a catalyst for positive change in Australian community health. The establishment of this concept involves several critical steps, including stakeholder mapping, conceptualisation and development of the organisation, policy prioritisation, proactive advocacy, transparent communication, and fostering awareness. Above all, the success of this idea hinges on obtaining the acceptance and support of both the government and the nutrition science community.

SWOT Analysis: Trusted Voice for Nutrition

Strengths

- **Collective expertise and credibility:** The nutrition community possesses extensive expertise, providing accurate and reliable information by combining diverse knowledge sources from research, clinical settings, education and industry, and are recognised authorities in their field, enhancing trust with consumers, governments, media and others.
- **Science-based guidance:** Nutrition community recommendations are grounded in scientific research, offering evidence-based guidance.
- **Professional standards:** Nutrition community professionals adhere to strict ethical standards and guidelines, ensuring trustworthy information delivery.
- **Collaboration potential:** Knowledge sharing enables the community to advocate for government policy changes with greater collective weight and influence.
- **Motivation to improve:** The community strives to enhance trusted and unified communication to bolster advocacy efforts.

Weaknesses

- **Competing agendas:** Nutrition professionals and organisations may have conflicting motivations, requiring compromise to align their goals.
- **Bureaucratic challenges:** Coordination among multiple organisations can lead to delays and hinder swift responses to emerging nutrition issues.
- **Inconsistent messaging:** Divergent information can confuse and erode community trust.
- **Translation-evidence lag:** Emerging nutrition issues may suffer from a delay in translating evidence into practice, causing communication gaps. Conversely, the release of early data without translation may erode trust (e.g., animal data extrapolated to human).
- **Information excess:** The vast amount of nutritional information from various sources can make crafting clear, consistent, and relevant messaging challenging.
- **Lack of diverse voices:** Limited representation of nutrition professionals in diverse communities weakens message relevance.

Opportunities

- **Increasing health interest:** The growing public interest in nutrition, including First Nations knowledge, offers an opportunity to provide trusted guidance to a broader audience.
- **Multi-disciplinary nutrition messaging:** Collaborative communications between medical and allied health professionals ensures consistent nutrition messaging and boosts healthcare sector capacity.
- **Digital engagement:** Digital platforms and social media provide a large-scale reach for spreading consistent, evidence-based nutrition information.
- **Review of the Australian Dietary Guidelines:** Updated dietary guidelines and potential national nutrition policy serve as key focus points for nutrition communication.
- **Policy impact:** A unified voice empowers nutrition professionals to influence government policies related to food security, education, and access to healthy foods and information.
- **Funding:** Collaboration unlocks broader possibilities for joint funding applications and research grants.

Threats

- **Industry influence:** Competing political agendas and special interest groups, including industry lobbyists, can sway nutrition policies, impacting nutrition-related decisions.

- **Misinformation:** The proliferation of online nutrition misinformation and pseudoscience challenges the credibility and trustworthiness of nutrition professionals.
- **Public perceptions:** Conflicting messages and historical perceptions of nutrition professionals as 'enforcing' or 'dismissive' can breed skepticism among consumers.
- **Changing government priorities:** Priorities may shift away from nutrition concerns, reducing support and funding for unified, trusted nutrition advocacy efforts.
- **Erosion of trust:** Global events have eroded trust in science and institutions, posing a threat to the nutrition community's ability to convey trusted messages.

Working group

EMCR Participants

Noell Burgess
Dietitian

Dr Sharayah Carter
University of South Australia

Dr Clare Dix
University of Queensland

Dr Neha Kaul
Alfred Health
Monash University

Kathy La Macchia
Grains & Legumes
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Dr Jessica Loyer
William Angliss Institute

Jemma O'Hanlon
Dietitians Australia
Heart Foundation

Dr Rachelle Pretorius
Telethon Kids

Dr Barbara Rita Cardoso
Monash University

Dr Alison Spence
Deakin University

Dr Heidi Staudacher
Deakin University

Georgia Stewart
University of Wollongong



Chair: Professor Eleanor Beck

Eleanor Beck is the Head of School of Health Sciences and Professor of Nutrition and Dietetics at the University of New South Wales. She has more than 30 years experience in dietetics practice and education and is a Fellow of Dietitians Australia. Eleanor is Chair of the Council of Deans of Nutrition and Dietetics, Australia New Zealand.



Dr Jane Willcox

Jane Willcox is a research dietitian and adjunct Associate Professor with the Faculty of Health at Charles Darwin University. Jane has worked for more than 25 years in clinical dietetics, public health and academia.

National Committee for Nutrition attendees

Dr Anneline Padayachee
The Food Scientist

Nutrition Mechanisms

Background

Eating patterns and nutritional status play a central role in mediating interactions between genes, physiology, and the environment. In designing nutrition science studies, it is crucial to identify gaps in methodology that hinder the collection of representative dietary data at a population level that can be used to prevent, manage and treat chronic diseases.

Randomised control trials (RCTs) establish causality, but tracking long-term dietary patterns is difficult and often yields group averages rather than individual responses. Variability within groups arises from genetics and social and environmental situations that leads to complexity in interpretation of cause and effect, creating the primary challenge for nutrition scientists. For example, the microbiome and its metabolites is a rapidly growing field, offering insights into individual responses to physiology and their mental and physical health. Accurately measuring food intake in free-living individuals is challenging, but can be improved through reference methods, automated data collection, and diverse systems approaches.

Outcomes

To advance the Nutrition Mechanisms pillar, *Nourishing Australia* emphasises the need for a national dietary data repository that would facilitate the compilation of comprehensive national datasets encompassing dietary patterns, health outcomes, and biological information. Recognition of some synergies also exists with pillar 3 (Precision and personalised nutrition) and pillar 4 (Nutrition research and education training). Actions drawn from the pillars' objectives are broad ranging and include:

- consultation with Aboriginal and Torres Strait Islanders to ensure recognition of Indigenous knowledges is undertaken with cultural humility and a focus on health equity;
- enhancing awareness and developing tailored tools and models for 'omics' platforms to improve data quality and scope for health messaging;
- training in implementation science, systems approaches, and consumer engagement (co-design) for translating nutrition studies into real-world settings; and
- fostering collaboration and communication between institutions to break down silos and facilitate larger and more comprehensive studies covering nutrition, biochemical, physiological, and psychological outcomes on a broader scale.

Implications

The pillar's ambitious goals to prioritise nutrition science, boost funding success rates, and position it for the MRFF are challenging and lack simple solutions. Potential steps forward include creating policy briefs and collecting supporting data to highlight the importance of Australian nutrition science and its capabilities. The Academy can convene interdisciplinary experts to address issues, such as the role of nutrition in climate change, sustainability, and neurodegeneration, to align with the pillar's objectives. Networking initiatives, including the Nutrition Society of Australia's Special Interest Groups and collaboration with International Union of Nutritional Sciences (IUNS) can be leveraged for the development of position papers and large-scale RCTs, and partnerships with the food industry offer funding opportunities. Supporting leadership in nutrition science and developing expertise in PhD and postdoctoral scientists can transform nutrient research, leading to innovative therapies and improved human health.

SWOT Analysis: Nutrition Mechanisms

Strengths

- Broad nutritional knowledge: Extensive sector knowledge of nutrients, metabolism, and their impact on health provides a robust foundation for informed decisions.
- Understanding inter-individual variations: Knowledge of metabolism and genomics allows for the accommodation of individual nutritional needs to optimise health outcomes.
- Public nutrition awareness: A thorough understanding of the information the public requires to make healthy choices enables effective communication and education.
- Food system comprehension: The sector is equipped to adapt and respond effectively to global events, ensuring food security and resilience.
- Behavioural outcome insights: A comprehensive grasp of nutrition behaviour, food choices, and adherence fosters interventions for sustained, positive health habits.
- Health impact assessment tools: The availability of research tools enables quantitative assessment of foods and dietary patterns to support evidence-based recommendations.

Weaknesses

- Precision medicine costs: Implementation of precision medicine carries a financial burden.
- Research method standardisation: Standardising research methods faces complexity due to differing data collection priorities among diverse stakeholders.
- Cross-disciplinary collaboration: Successful research demands collaboration across multiple disciplines to foster innovation.
- Research-public gap: A disconnect exists between research objectives and the public's demand for practical dietary guidance.
- Funding shortages: Securing funding for nutrition initiatives competes with other scientific priorities, presenting ongoing challenges.
- Lack of national policies: The absence of an updated national nutrition policy and revised dietary guidelines leaves a void in strategic direction.

Opportunities

- Collaborative opportunities: Future engagement activities will enhance the impact of the discipline, including a position paper with the Nutrition Society of Australia, collaboration with the IUNS and participation in the 2023 Boden Conference to discuss an Australian version of PREDICT.
- Collaboration with industry: Clearly defined communication and outcome terms with industry collaboration provides valuable resources and expertise to advance research.
- Inclusion of Indigenous knowledges: Acknowledging and including Aboriginal and Torres Strait Islander ways of knowing and doing enriches our research perspective.
- Upcycled food research: Exploring the emerging field of upcycled food from surplus and wasted resources allows for investigation of the health impacts of recycled nutrients.
- Implementation science focus: Emphasising implementation science enhances practical research application, with consumer engagement and co-design as key elements.
- Systems approach: Applying a systems approach in resource-intensive studies enables exploration of interactions in physiology, psychology, metabolism, immunity and the brain.

Threats

- Nutrient translation and communication: A challenge lies in effectively translating nutrients into dietary guidance and communicating this information to the public.

- Undefined health outcomes: The absence of clearly defined health outcomes in research objectives can lead to ambiguity between general health and specific disease states.
- Data repetition and fragmentation: The absence of a centralised data repository increases the risk of repetitive and fragmented research efforts.
- Industry influence: The influence of industry and external interests poses a potential threat to research integrity and impartiality, potentially compromising the quality of studies.
- Competitive academic culture: An academic culture emphasising competition over collaboration may hinder the generation of knowledge for the common good.
- Slow research dissemination: The slow pace from research completion to dissemination can delay the translation of critical findings into practical applications.
- Insufficient workforce capacity: A lack of workforce capacity to initiate research projects addressing nutrition mechanism gaps may impede progress in this area.

Working group

EMCR Participants

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Deakin University

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Barbara Brayner
Deakin University

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Dr Kay Nguo
Monash University

Stephanie Resciniti
La Trobe University

Dr Erin Shanahan
University of Sydney

Dr Caroline Tuck
Swinburne University of
Technology

Dr Chu (CK) Yao
Monash University



Chair: Associate Professor Melinda Coughlan

Melinda Coughlan is a group leader at the Department of Diabetes at Monash University's Central Clinical School. Her research focuses on the molecular mechanisms driving the development of diabetic complications, with an interest in dietary mediators of disease. Melinda holds a Career Development Fellowship from the JDRF.

National Committee for Nutrition attendees

Professor Helen Truby
University of Queensland

Dr Katherine Livingstone
Deakin University

Dr Catherine Bondonno
Edith Cowan University

Nutrition Education and Research Training

Background

Poor nutrition stands as a leading modifiable risk factor contributing to the burden of disease. To effectively inform the Australian public about nutrition and health, it is vital to enhance food and nutrition literacy among health professionals and educators, who play a central role in frontline education.

Acknowledging the potential limitation in the number of trained nutrition professionals, it is essential to recognise the influence of others in shaping nutrition behaviours. For instance, general practitioners often serve as the primary source of nutrition information for patients. While some professions incorporate nutrition training, there remains ambiguity regarding curricula and competencies.

The approach of the working group involved general discussion to determine:

- professions and training institutions to be targeted;
- the definition of “food and nutrition literacy” for professionals and the public;
- the required level of nutrition knowledge for graduate health professionals;
- strategies for upskilling the existing health professional workforce and potential of leveraging existing organisations, competencies and frameworks; and
- mechanisms for incorporating nutrition into existing units, such as maths and chemistry.

Outcomes

There was a consensus that evidence-based nutrition should be integrated into curricula for health and education professionals at the tertiary level. Nutrition science should be taught alongside food literacy to facilitate practical application of knowledge. Dietitians and nutritionists should remain informed about key developments in nutrition science, such as microbiome and nutritional genomics research, to enhance their practice, and should be culturally competent to consider societal influences on nutrition.

The group proposes a plan to expand the academic nutrition workforce and establish a framework for progressing nutrition science and research training by:

- mapping existing competencies in health professional and teacher training;
- engaging relevant stakeholders;
- reviewing position statements regarding the roles of various professions in providing nutritional advice; and
- reviewing international best practices to inform future efforts.

Implications

Improving the food and nutrition literacy of professionals who disseminate nutrition science to children and the public is expected to result in a more food- and nutrition-literate Australian population. This, in turn, should lead to a healthier population, economic benefits, and opportunities for more environmentally sustainable agriculture and diets. The initial step involves mapping existing nutrition curricula and competencies of health and education professionals, with subsequent stakeholder engagement to collaboratively design food- and nutrition-inclusive training by leveraging existing education frameworks.

SWOT Analysis: Nutrition Education and Research Training

Strengths

- United voice in nutrition advocacy: Peak bodies and other influential voices deliver a consistent message, driving advocacy for evidence-based nutrition practices and policies.
- Stakeholder collaboration: Working with stakeholders, including government and education bodies, is essential for effective nutrition integration, such as in school curricula.
- General interest in nutrition: Widespread interest in food and nutrition forms a solid basis for promoting nutrition education and public awareness campaigns.
- Evidence-based guidelines: Availability of evidence-based guidelines provides a reliable foundation for promoting proper nutrition and evidence-driven policy development.
- Engaged sector involvement: Engagement of organisations responsible for promoting awareness and implementing guidelines contributes to a health-conscious society.
- Positive nutrition culture: Australian culture generally promotes nutrition values and practices, which fosters public acceptance and adherence to dietary recommendations.
- Cultural awareness in health professions: Health professionals' understanding of their cultural biases encourages patient-centred and unbiased nutrition recommendations.

Weaknesses

- Narrow focus: Overemphasising knowledge-based approaches in education and training overlooks the importance of practical strategies, systems, and stakeholder involvement needed to effectively address nutrition challenges.
- Competing lifestyle pressures: Escalating living costs, time limitations, and the necessity for multiple jobs hinder individuals and families in meal planning, shopping, and cooking.
- Underfunding of nutrition: Nutrition is not always considered a universal socioeconomic priority. As such, initiatives often suffer from inadequate funding, necessitating partnerships with better-resourced sectors to support meaningful change.
- Complexity of nutrition science: Nutrition science can be intricate and challenging to grasp, posing barriers to effective communication and understanding.
- Translating guidelines: Understanding and effectively translating evidence-based guidelines for patients and consumers is an often overlooked aspect of nutrition practice.
- Limited access to trusted sources: Trusted voices and evidence-based guidelines may not reach or be accessible to diverse groups and some healthcare professionals.

Opportunities

- National Nutrition Policy: The prospect of an updated National Nutrition Policy in Australia offers a current, comprehensive framework for addressing nutrition challenges.
- Ownership, collaboration, and integration: Involving stakeholders from various sectors, including government and industry, fosters a shared goal and understanding, avoiding a perception of dietitians imposing change. This integration extends to university courses.
- Community engagement: Identifying champions in different sectors and collaborating with organisations supporting vulnerable populations can lead to significant progress.
- Upskilling and advisory roles: Upskilling professionals from other fields and exploring advisory roles in various professions can expand the influence of nutritionists.
- Systems-based approach: A systems-based approach provides a shared understanding of the current system and allows non-nutrition professionals to source trusted information.
- Food literacy upskilling: Empowering the community with critical food literacy skills enables individuals to make informed food choices, leading to improved health outcomes.

Threats

- Limited access to nutrition information: Difficulties exist in accessing nutrition information, along with concerns regarding timely access, language and literacy barriers, visually engaging formats, and associated costs in both physical and online realms.
- Division and community fragmentation: The "us vs. them" mentality, spanning core professionals and stakeholders, and the division between dietitians and nutritionists, hinders the formation of a cohesive and unified community centred on common goals.
- Impact of social media: The influence of social media and celebrity and influencer culture on nutrition perceptions and practices threatens evidence-based messaging.
- Lack of implementation support: A risk exists of developing unrealistic implementation plans without adequate support.
- Resistance to community-centred approach: A difficulty resides in striking a balance between individuality and addressing community-centric societal needs.
- Engaging the unengaged: Individuals who are uninterested or unaware of nutrition-related issues can be difficult to reach through traditional messaging.

Working group

EMCR Participants

Dr Katherine Brain
University of Newcastle

Dr Alyse Davies
University of Sydney

Dr Kacie Dickinson
Flinders University

Jessica Kempler
Deakin University

Dr Amy Kirkegaard
University of Queensland

Dr Lucy Kocanda
University of Newcastle

Dr Anita Lawrence
University of Melbourne

Dr Gloria Leung
Deakin University

Susan McLeod
La Trobe University

Dr Carly Moores
South Australia Health

Dr Lisa Vincze
Griffith University

Dr Kristina Vingrys
Victoria University

Monica Wellington
Victoria University



Chair: Professor Margaret Allman-Farinelli

Margaret is Professor of Dietetics at the University of Sydney, Fellow of the Nutrition Society of Australia and Fellow of Dietitians Australia. She leads a state-wide study of dietary intakes and the social and environmental contexts of eating in young adults. Margaret is the leader of the Wireless Wellbeing research node for the Charles Perkins Centre.

National Committee for Nutrition attendees

Dr Emma Beckett
University of Newcastle

Societal Determinants

Background

In Australia, the COVID-19 pandemic brought attention to the vulnerabilities in the national food supply chain, which has been exacerbated in 2023 by rising post-pandemic living costs that affect food and essential utilities. While some urban Australians have experienced food insecurity for the first time in recent times, some rural and remote communities have long battled erratic food supplies and high basic food costs. Despite 14 inquiries into food insecurity over the past two decades, little systemic change is clearly apparent with food insecurity affecting 4-13% of the general population and 22-32% of Indigenous Australians.

The growing health disparity between Indigenous and non-Indigenous Australians is a clear indicator of persistent health, economic and social inequalities. Food insecurity is undeniably a complex and challenging issue, requiring substantial efforts to reform the food system and ensure affordable food access for all. It is essential to prioritise the development of a language that respects Indigenous knowledge, ways of life, understanding, and action, and to apply this knowledge respectfully across all future endeavours. Given these challenges, Australia demonstrates heightened political interest in addressing social determinants of health, with a stronger commitment and increased awareness of food insecurity.

Outcomes

The analysis from this working group has been formed by recent events, including pandemic responses, the impact of climate change on food production, and the cost-of-living crisis. The culmination of these issues has underscored the urgent need for change, along with other challenges, such as insufficient collaboration on social determinants issues within and beyond nutrition, and difficulty translating research into policy and practice. Achieving this change demands collaboration across sectors, involving the agri-food industry, state and national governments, public health bodies, and advocacy organisations. An inclusive approach is essential to convene discussions that address necessary changes. It was noted that an updated national policy on food and nutrition would help focus efforts.

Nourishing Australia may serve as a catalyst to bring various stakeholders together to address these complex challenges, prioritise comprehensive nutrition policies, foster interdisciplinary research, and advocate for healthier food environments while addressing social determinants.

Implications

Societal determinants is the first pillar of *Nourishing Australia*. The success of subsequent pillar goals relies upon society's access to a secure and equitable food supply. Delay in action is not an option, and data accessibility should not be a pre-requisite for pursuing pillar objectives. Our aim is to work towards achieving the Sustainable Development Goals through advocacy, the creation and support of actionable initiatives, and the application of an equity-focused perspective to all endeavours.

This pillar is dedicated to mobilising the entire scientific community to proactively work towards realising the objectives of the decadal plan. This will be accomplished through engagement with communities and stakeholder groups to collaboratively design solutions that modernise and harmonise nutrition science and practice for the benefit of all Australians.

SWOT Analysis: Societal Determinants

Strengths

- Political awareness: There is strong political interest and commitment in addressing food insecurity and food supply systems in light of climate change and COVID-19.
- Compassionate approach: Rising cost of living and the impact of COVID-19 has resulted in a growing sense of compassion and commitment to a human rights-based approach.
- Expertise in nutrition science: Australia boasts a robust nutrition community, actively engaged in research related to nutrition and its health implications.
- Interdisciplinary collaboration: Australia has made strides in fostering partnerships among nutritionists, dietitians, scientists, and policymakers to develop holistic solutions.
- Motivated professionals: Enthusiasm is high among professionals working in this space, driven by a shared commitment to improving nutritional health.
- Targeted funding opportunities: Opportunities for targeted funding are available, which can further support our goals.
- Growing evidence base: The evidence base, with diverse methodologies, is expanding, providing a more comprehensive understanding of nutritional challenges and solutions.

Weaknesses

- Lack of collaboration: Insufficient collaboration and input into position statements and research across disciplines limits the capacity for comprehensive solutions.
- Indigenous knowledge recognition: The lack of recognition and adoption of Indigenous knowledge systems is a significant gap that needs to be addressed.
- Food and nutrition governance: The absence of governmental ownership to address food, nutrition, and critical food insecurity questions responsibility and accountability.
- Complexity in nutrition goals: The complexity inherent in nutrition goals, particularly when viewed through a health equity lens, poses a challenge in defining desired outcomes.
- Research translation gap: The translation of research findings into practical disease prevention strategies and public health interventions is limited.
- Data availability and linkage: The lack of data availability and linkage hinders evidence-based decision-making and policy development in the field of nutrition.
- Recognition of discriminatory processes: Discrimination and racism as social determinants require improved integration into our strategies for advancing nutrition and health equity.

Opportunities:

- Policy leadership: Consensus among national groups for an updated national food and nutrition policy provides an opportunity for leadership and advocacy from peak bodies.
- International lessons: Drawing lessons from international progress in recognising food insecurity offers Australia a chance to involve lived experience in policy development.
- Addressing societal environments: Recognising the significant influence of societal environments on dietary behavior allows Australia to shift its focus and prioritise research on modern food environments, leading to targeted interventions for healthier diets.
- National nutrition collaboration: The formation of a national nutrition collective of policymakers, the food industry, educators, and health promoters, would lead to collaborative action and evidence-based strategies to enhance health outcomes.
- Alignment with SDGs: Prioritising vulnerable populations, particularly children, offers a unifying approach across disciplines and aligns with the Sustainable Development Goals.
- Workforce development: Workforce development opportunities, especially in allied health

and nursing, contribute to prevention efforts and address social determinants.

- Measuring food insecurity: Developing tools to measure food insecurity, both clinically and at food banks, as well as vulnerability indices, is crucial.
- Acknowledging Indigenous knowledge: Recognition of the impact of colonisation on Aboriginal food insecurity and incorporating Indigenous knowledge are essential elements of an equity-focused approach to training and practice.

Threats

- Limited understanding: There is limited recognition and understanding of the impact of social determinants among policymakers and consumers.
- Conflicting interests: The role of the food industry in shaping nutrition policies can lead to conflicts of interest that may prioritise commercial interests over public health.
- Limited prevention-focused workforce: Workforce development often neglects prevention efforts, with a lack of training provided to fields that influence social determinants.
- Resource constraints: Limited resources and competing priorities can impede comprehensive strategies for addressing social determinants.
- Food supply system sustainability: Ensuring the sustainability and viability of the food supply system without innovation poses a significant challenge.
- Slow policy reaction to evidence: The policy-making process often reacts slowly to evidence-based or informed policy recommendations, delaying much-needed changes.
- Obesity and nutritional threats: Obesity and overnutrition pose significant threats to nutrition. Emphasising the importance of good diets and dietary diversity is crucial.

Working group



Chair: Dr Katherine Kent

Katherine is a public health nutritionist with expertise in measuring household food security and rural nutrition research. Katherine is passionate about investigating the impact of food insecurity on diet and health related outcomes in various priority populations across Australia, including in rural regions, in student and young adult populations and other vulnerable groups..



Associate Professor Christina Pollard

Christina is Associate Professor of Public Health Priorities at Curtin University. She is Director of the Public Health Advocacy Institute, Mentally Healthy WA and the Act-Belong-Commit mental health promotion campaign. Her research and practice focus is on population groups who are vulnerable to poor health due to their social, environmental or economic circumstances.



Nicole Turner

Nicole is a Kamilaroi woman and Chair of Indigenous Allied Health Australia. She has worked in the health sector for over 20 years, 15 of those in Aboriginal health, and is one of a few qualified Aboriginal community nutritionists in Australia. Nicole is Adjunct Professor of Nutrition and Dietetics at the University of Canberra.

Skills sessions presenters

Skills session 1: Engaging with policymakers



Dr Hayley Teasdale

Hayley Teasdale is currently Manager, Science Policy Projects at the Australian Academy of Science. She has experience in delivering science policy projects and developing innovative methods for producing science policy advice. She has a PhD in Health from the University of Canberra where she studied the effects of non-invasive brain stimulation on the symptoms of Parkinson's disease and she is the former Lead Scientist of Halo Neuroscience.

Skills session 2: Communicating the decadal plan



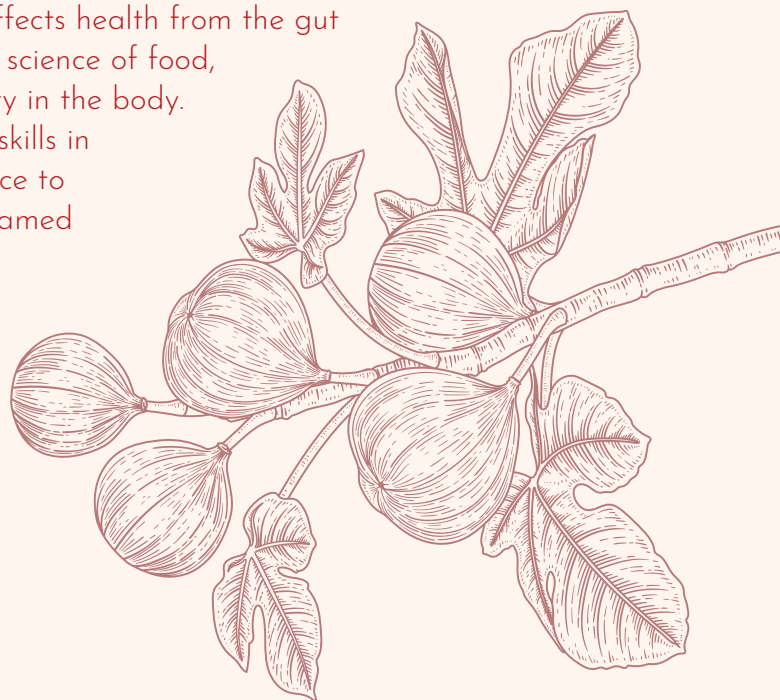
Dr Tim Crowe

Tim Crowe is an Advanced Accredited Practising Dietitian and career research scientist and educator who aims to communicate credible, evidence-based nutrition messages to the general public in straightforward language. His communication is supported by his 30-year research career, which spans laboratory molecular biology research through to clinical nutrition trials. Tim currently works as a freelance health, medical and nutrition writer and scientific consultant.



Dr Anneline Padayachee

Anneline Padayachee is a food-based preventative health scientist who helps consumers, healthcare professionals and industry improve their understanding of how food affects health from the gut outwards by demystifying the science of food, digestion, and nutrient delivery in the body. Anneline is renowned for her skills in communicating complex science to the public and was recently named one of the 50 women at the cutting edge of science in Australia by Cosmos magazine.



Skills session 3: How organisations build trust



Dr Maree Ferguson

Maree Ferguson is Director of Dietitian Connection. She is an Advanced Accredited Practising Dietitian, Fellow of the Academy of Nutrition and Dietetics (AND), and an internationally renowned nutrition and dietetics expert. She developed the Malnutrition Screening Tool to identify patients at risk of malnutrition.



Professor Vicki Flood

Vicki Flood is President-Elect of the Nutrition Society of Australia and has an extensive research record in public health, health services, epidemiology, nutrition science and dietetics. She is the Head of the Rural Clinical School, Northern Rivers and Director of the University Centre for Rural Health at the University of Sydney.



Jane Martin

Jane Martin is Executive Manager of the Food for Health Alliance, and Alcohol and Obesity Programs at Cancer Council Victoria. She is an experienced public health professional advocating to improve population health and reduce the impact of key risk factors. She is the Immediate Past President at the Australia and New Zealand Obesity Society. Jane was awarded a Honorary Doctorate from Deakin University for her contribution to public health advocacy in 2018.



Natalie Stapleton

Natalie Stapleton is Advocacy and Policy Manager at Dietitians Australia (DA) and an Accredited Practising Dietitian. She oversees DA's policy and advocacy portfolio including submissions, stakeholder relations and position statements. Natalie is passionate about improving the health and nutrition of the Australian population and has an interest in chronic disease, public health and health economics.



Nicole Turner

Nicole Turner is a Kamilaroi woman and Chair of Indigenous Allied Health Australia. She has worked in the health sector for over 20 years, 15 of those in Aboriginal health, and is one of a few qualified Aboriginal community nutritionists in Australia. Nicole is Adjunct Professor of Nutrition and Dietetics at the University of Canberra and has published several research papers in international journals.



Speakers



Professor Helen Truby

Helen Truby is an Advanced Accredited Practising Dietitian, Fellow of the Nutrition Society of Australia, Fellow of the Association for Nutrition and chair of the National Committee for Nutrition at the Australian Academy of Science. Her research is underpinned by experience in food and nutrition practice, in particular maternal nutrition, child and adolescent health, and a commitment to translating nutrition science into evidence-based recommendations to improve food systems.



Professor Rachel Webster AO FAA

Rachel Webster is Head of Astrophysics at the University of Melbourne and Victorian Regional Chair at the Australian Academy of Science. She is a Fellow of the Australian Academy of Science and former chair of the National Committee of Astronomy. She is currently the University of Melbourne Node Director for the ARC Centre of Excellence for All-sky Astrophysics. Rachel co-created a successful Women in Physics program, which has increased the number of women graduating in physics at the University of Melbourne.



Associate Professor Shelley Wilkinson

Shelley Wilkinson is an Advanced Accredited Practising Dietitian and is a service development and redesign expert in the Mater Mothers' Department of Obstetric Medicine. She also works part time an Associate Professor in the UQ School of Pharmacy as a Senior Principal Research Fellow on the [RECARD](#) project.. She is recognised as a leading Australian researcher in implementation science and maternal health. Shelley was a participant in the 2017 Theo Murphy Think Tank.

Symposium steering committee

Professor Helen Truby
University of Queensland

Dr Catherine Bondonno
Edith Cowan University

Professor Margaret Allman-Farinelli
University of Sydney

Dr Aimee Dordevic
Monash University

Professor Eleanor Beck
University of New South Wales

Dr Katherine Livingstone
Deakin University

Associate Professor Shelley Wilkinson
Mater Research

Penny Brew
Australian Academy of Science

Next steps

It was a pleasure to facilitate this Theo Murphy-funded symposium and to witness the enthusiasm of this group of early- and mid-career researchers and professionals. Clearly, there is still much work to be done to ensure that we establish SMART goals and prioritise actions that arise from *Nourishing Australia* implementation activities. Prioritising actions can be challenging, but it is crucial to ensure that we can develop achievable program logic models and focus our efforts on a smaller number of implementable actions.

The National Committee for Nutrition (NCN) is cognisant of our ever-changing world and acknowledges that its strategic approach must evolve if it is to achieve the goals of the decadal plan. It is the responsibility of the committee to mobilise organisations, bringing key stakeholders together and harnessing their collective efforts to realise the logic models emerging from this symposium. The implementation strategies that emerge will be led by a new implementation sub-committee of the NCN.

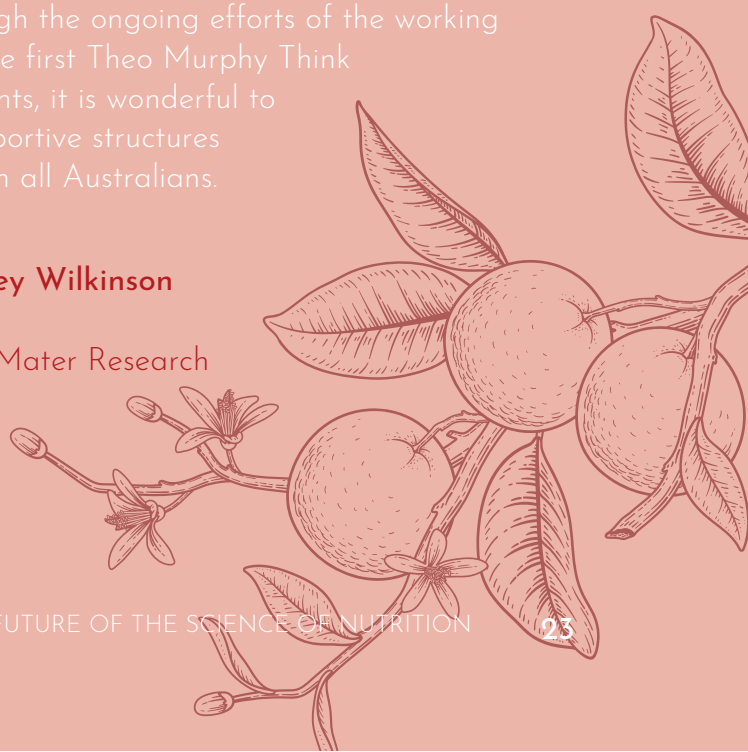
The NCN extends its gratitude all of the participants for contributing their collective knowledge and sharing their thoughts, which provide valuable insights into how we can move towards implementation. There is additional work to be completed following this one-day event, which will be conducted virtually, and will be further by the Boden Research Conference in October 2023.

Thanks also go to the presenters who generously shared their time and insights, sharing the skills that have supported their career journeys, from communicating nutrition to building trust in their brands. We have been fortunate to have Nicole Turner, chair of Indigenous Allied Health Australia, join us. Nicole is one of the few qualified Aboriginal community nutritionists in Australia and is passionate about empowering Aboriginal people to pursue their dreams. She has helped the committee focus on ensuring that the implementation plans are inclusive and supportive of improving the nutritional health of all Aboriginal and Torres Strait Islander people.

A saying that comes to mind is 'Rome was not built in a day'. Similarly, a decadal plan cannot be realised without collective action. Through the ongoing efforts of the working groups, we can build on the foundations laid by the first Theo Murphy Think Tank attendees. As one of those original participants, it is wonderful to be involved in the next steps as we create the supportive structures required to develop a food system that can nourish all Australians.



Associate Professor Shelley Wilkinson
Facilitator
Senior Research Dietitian, Mater Research



References

We would like to acknowledge the 60+ EMCRs who attended the July 2017 Theo Murphy High Flyers Think Tank 'Rethinking food and nutrition science'. We appreciate their collective contribution to developing the decadal plan and the associated discussion papers:

- [Nourishing Australia: A decadal plan for the science of nutrition](#)
- [The food environment](#)
- [Empowering food choices](#)
- [Effective governance for food and nutrition science in Australia](#)
- [Critical evaluation of food and nutrition science: An Australian perspective](#)
- [The Australian food and nutrition knowledge hub: A critical piece of national infrastructure for nutrition science](#)

Other references:

Booth, S., Deen, C., Thompson, K., Kleve, S., Chan, E., McCarthy, L., Kraft, E., Fredericks, B., Brimblecombe, J., & Ferguson, M. 2023, [Conceptualisation, experiences and suggestions for improvement of food security amongst Aboriginal and Torres Strait Islander parents and carers in remote Australian communities](#). *Social Science & Medicine*, 320, 115726.

Kent, K., Gale, F., Penrose, B., Auckland, S., Lester, E., & Murray, S. 2022, [Consumer-driven strategies towards a resilient and sustainable food system following the COVID-19 pandemic in Australia](#). *BMC Public Health*, 22(1), 1539.

Louie, S., Shi, Y. and Allman-Farinelli, M., 2022, [The effects of the COVID-19 pandemic on food security in Australia: A scoping review](#). *Nutrition & Dietetics*, 79(1): 28-47.

O'Kane, G. 2020, [COVID-19 puts the spotlight on food insecurity in rural and remote Australia](#). *The Australian Journal of Rural Health*, 28(3): 319.

Truby, H. 2023, [The United Nations Sustainable Development Goals: Aspirational or obtainable?](#) *Nutrition & Dietetics*, 80: 4-7.





This symposium was funded as an Amplify activity through the Theo Murphy Initiative (TMI). TMI was established by the Royal Society to further scientific discovery in the fields of medicine, science, technology and engineering. The fund is administered by the Australian Academy of Science and provides grant funding to support career development opportunities for Australia's early- and mid-career researchers in science, technology, engineering and mathematics (STEM).



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