2024 Food Microbiology Conference

Speaker Profiles

Professor Manpreet Singh, IAFP - Vice President

Campylobacter and salmonella quantification challenges in poultry

Manpreet Singh is a Professor and Head of the Department, for the Department of Food Science and Technology at the University of Georgia. He received his MS in Food Science from Kansas State University, and PhD in Food Science and Technology from Iowa State University.

His research and outreach activities have focused on innovation and optimization of intervention technologies against Salmonella and Campylobacter during poultry processing. He has published over 100 peer-reviewed research and outreach papers and numerous proceeding papers and abstracts that have been presented at national and international conferences. He has garnered in excess of $5 million in extramural funding from USDA-NIFA, USAID, US Poultry and Egg, poultry industry contracts, and other funding agencies. His outreach activities have provided over 5000 industry professionals networking and educational opportunities worldwide and his programming includes several training workshops on pathogen control in poultry processing, Onfarm control measures for Salmonella and Campylobacter, and pathogen detection technologies to assist the poultry processing industry. Dr. Singh served as the program chair for the annual IAFP in 2020 and currently serves as the vice president of IAFP.

Professor Beatrix Alsanius, Swedish University of Agricultural Sciences

Vibes from the salad bowl

Beatrix Alsanius is chair professor in horticulture at the Swedish University of Agricultural Sciences (SLU) since 2009 and leads the subject area Horticultural microbiology. Her research is directed towards microbial interactions in horticultural value networks and one of the focus areas is food safety in horticultural produce. Beatrix Alsanius received her undergraduate and graduate education at Bonn university, Germany. Her assistant professorship at the Swedish University of Agricultural Sciences (SLU) was combined with postdoc visits at INRA Angers, France and USDA-ARS/Washington State University, Pullman, USA. She was appointed associate professor in horticulture at SLU in 1999 and in plant protection ecology in 2006. In 2007, Beatrix Alsanius was promoted professor in horticulture (specialization: horticultural production systems). From 2010 to 2013 she was adjunct professor at Université Laval, Québec, Canada. During 2008-2014, Beatrix Alsanius acted as head of the international postgraduate school "Microbial horticulture", funded by the Swedish research council, Formas. Beatrix Alsanius is a fellow of the Royal Swedish Physiographic Society as well as of the Royal Swedish Academy of Forestry and Agriculture.

Professor Steve Flint, Massey University NZ

A Near Death Experience - the Botulism Crisis

Steve joined Massey University after 20 years with Fonterra (New Zealand's largest dairy manufacturer) as a food microbiologist. There he learned much about New Zealand's leading food industry, participating in problem solving and evaluating rapid methods for microbial analysis covering aspects of food safety and food spoilage. He developed specialist research interests in biofilms, (which he studied for my PhD), spore formation, alternative methods for cleaning, sanitation and new processing technologies. He really enjoys teaching along with his passion for science. He continues to develop his research in the fascinating world of biofilms (the origin of most microbial problems in food) and dairy microbiology. His research team consists of 10 PhD students investigating various aspects of biofilm development and control. In 2015, his team was involved in publishing a book "Biofilms in the Dairy Industry" which covers 15 years of biofilm research. His team was awarded the Massey University Team Research Award in 2017. He has published 190 journal articles, 20 book chapters and given160 conference presentations. He was awarded the New Zealand Microbiological Society Orator honour in 2021 for his services to microbiology.

Julian Cox, UNSW – Associate Professor

Where are we heading?

Julian Cox is well known in the food microbiology community, having been an active member for over 30 years. After completing BSc, Hons and PhD degrees at the University of Queensland, he worked in the egg industry before returning to UQ as a postdoctoral fellow. He then moved to UNSW, first as a researcher, and then as academic staff, where he remained until retirement from full-time work at the end of 2020. He continues to teach, and speak around the world, while undertaking voluntary projects, including the Scientific Director of the Food Safety Information Council. He is currently working part-time as the Associate Dean International for UNSW Engineering.

Dr Anran Dong, University of Queensland

Evaluation of bioprotective bacteria to reduce Campylobacter on raw chicken meat at the end of primary processing

Dr. Anran Dong, a dedicated food microbiologist with over 7 years of experience in biocontrol research. Anran holds a Bachelor's degree in Food Quality with Retail Management from Beijing University of Agriculture (China) and Harper Adams University (UK), a Master's in Food Sciences, and a PhD in Food Microbiology, both from the University of Queensland (Australia). Anran has contributed to significant findings in the field, authoring a paper, a book chapter, and exploring various applications of bioprotective bacteria.

Anran's latest project focuses on improving chicken meat safety: using biocontrol agent to reduce Campylobacter on raw chicken meat at the end of primary processing. With chicken meat being the most consumed meat in Australia, Campylobacter and campylobacteriosis represent major concerns for consumers of raw/undercooked chicken. Despite increased efforts to improve on-farm activities and sanitization in slaughterhouses, campylobacteriosis cases continue to rise. Anran's innovative approach targets this issue by investigating the use of Lactic Acid Bacteria as a potential solution.

Anran aims to examine the application of LAB in chilling solutions to create an easy, cost-effective, green, and efficient pathogen control method before product delivery. This groundbreaking project holds strong promise for improving the safety and quality of chicken meat in Australia.

Dr Craig Shadbolt, Principal Food Safety Scientist, NSW Food Authority

Tracking organisms lost in translation

Dr Craig Shadbolt is the Principal Food Safety Scientist with the New South Wales Food Authority, Australia's only through-chain food safety agency. Craig has been with the NSW Food Authority since 2004 and has over 20 years experience in managing foodborne outbreaks and other hazards.

Prior to joining the Food Authority, Craig was employed in a scientific advisory role with the Commonwealth Department of Health. In this role Craig was responsible for advice and development of food policy and regulation, as well as involvement in the operation of OzFoodNet, Australia's national surveillance system for detection and investigation of foodborne disease outbreaks.

Associate Professor Kate Howell, University of Melbourne

Microbial communities for creating distinctive, flavoursome and healthy food and beverages

Yeast and bacteria in food transform raw ingredients into nutritionally dense, flavoursome and culturally important foods across many human societies. Here, I will present an overview of research in my laboratory which investigates the interactions between microbes in foods and beverages and the consequences of these communities.

I am a microbiologist investigating microbial communities in natural and constructed environments. I specialize in yeast fermentations. I am interested in biochemical pathways of yeasts that influence flavour and nutritional outcomes in food. I follow the impact and influence of microbes through the food system, from agricultural environments to interactions with the human microbiome. I am contributing to community-led projects to quantify the composition of traditional Australian foods and how this influences health outcomes.

Dr Hugh Dircks, Group Manager Microbiology, Asahi Beverages

The microbiology of non-alcoholic beer - food safety and quality implications for its production and service

Demand has surged for No Alcohol Beer (NAB), Zero Alcohol Beer (ZAB) and Very Low Alcohol Beer (VLAB). There are now dozens of producers of No Alcohol Beer and similar products in Australia. The negligible alcohol content of these beers makes them more susceptible to a range of microorganisms compared to conventional beer styles. Knowledge of microbiology and food safety varies amongst brewers. The stability of these products in bottles or cans is well established but there are unique challenges for service via tap systems. Given the implications for food safety and quality, the service of NAB/ZAB via requires careful management of numerous factors including the formulation and production of the beer, filling operations, and most especially the cleaning and sanitation of tap systems.

Dr Hugh Dircks currently holds the role of Group Manager - Microbiology at Asahi Beverages ANZ. In this role Hugh leads the microbiological monitoring and risk management programs across Asahi's alcohol and non-alcohol divisions. Hugh has also worked as Brewing Manager for Fermentation and Yeast, and as Senior Microbiologist at Carlton & United Breweries. Before beverages, Hugh worked at Mars Inc as Cocoa Senior Scientist. Hugh holds a BSc in Food Science and Technology (UNSW) and PhD in Microbiology (UNSW). Hugh is passionate about fermentation and food safety and believes that fermented foods and beverages have the power to enhance our lives, every day.

Associate Professor Senaka Ranadheera, Senior Lecturer, University of Melbourne

Diet, probiotics and gut microbiome

This presentation focuses on the influence of dietary ingredients and food substrates on probiotic efficacy and the gut microbiota.

Senaka Ranadheera is a food scientist and internationally recognised researcher at the School of Agriculture, Food & Ecosystem Sciences, University of Melbourne and his research interests focus on probiotics and prebiotic food applications. He holds a PhD (Food Science) from the University of Newcastle, Australia. Senaka teaches a number of subjects and is also the coordinator for postgraduate subject Food Safety and Quality and undergraduate subject Food Research & Development. In addition, he coordinates the Honours degree program. He serves as an Associate Editor for the journal Probiotics and Antimicrobial Proteins and has editorial board membership and responsibilities for several journals. His research work has been published in top-tier food science journals. He collaborates actively with the industry and academics and researchers around the world. Along with his research and teaching, Senaka is passionate about science communications.

Professor Esteban Marcellin, FaBA UQ

Innovative ingredients at the Food and Beverage Accelerator using precision fermentation

We will discuss advancements in the Food and Beverage sector, focusing on innovative ingredients reshaping the industry. We'll explore sustainable, nutritionally-rich alternatives, like milk proteins or fats made using precision fermentation that are setting new standards in sustainability. By examining cutting-edge research and technological advancements in systems and synthetic biology, we'll discuss how these innovations are creating new ingredients. Join us to understand how these ingredients are revolutionizing the culinary landscape and offering a glimpse into the future of food and beverage via precision fermentation.

Professor Esteban Marcellin conducts research focused on advanced biomanufacturing and systems, and synthetic biology. He aims to better understand biological cells and how they can enhance the production of food ingredients, fuels, chemicals and biopharmaceuticals. His primary research focuses is on enhancing yield, titre, and productivity in biological processes. This is aimed at developing economically viable strains capable of producing products at scale. His approach involves bioprocess optimization and multi-omic analyses to identify and resolve metabolic bottlenecks, thereby improving the efficiency and output of these biological systems.

Vikrant Dutta, Senior Director Scientific Affairs, bioMerieux (St Louis)

Evolution of food safety & quality testing through the lens of augmented diagnostics

Vik joined bioMérieux over 7 years ago. Before that, he was employed as a Senior Microbiologist at the Centers for Disease Control and Prevention, Atlanta, USA. He has earned his doctorate in Microbiology from NC State University, Raleigh, USA and has been working in various aspects of food safety for over 18 years now, with specific expertise in molecular biology, molecular assay development, and incorporation of data tools for microbiology. He has authored or co-authored over 20 peer-reviewed articles/book chapters. Vik has been awarded a patent on improving isothermal detection technology, has been recognized many times for his contributions to food safety, and sits on multiple advisory boards for food safety organizations.

Sam Abraham, Murdoch University

Robotic Antimicrobial Susceptibility Platform (RASP) for Investigating Antimicrobial Resistance and Genomic Characteristics of Foodborne Pathogens

Professor of Microbiology at Murdoch University and undertakes research in antimicrobial resistance and undertake research in One-health, AMR and Biosecurity. He utilises high throughput robotics, genomics, mass spectrophotometry and conventional microbiology to improve biosecurity and management and control of zoonotic infectious diseases and antimicrobial resistance. He runs the state-of-the-art AMR and infectious diseases laboratory (AMRID) that hosts his research group (www.amrid.com.au). Prof. Abraham has pioneered and led technological innovations in developing global best practice surveillance system for antimicrobial resistance using high throughput robotics and genomics

Dr Snehal Jadhav, Deakin University

Chasing Microbial Footprints

Microbial food waste is a major threat to food sustainability and public health. Early detection of foodborne pathogens serves an authentic challenge to the industry. Although traditional approaches for microbial detection are robust, they are not suitable for time sensitive, high throughput testing. Technological strides in hyphenated-separation science platforms along with the advances in omics approaches provides an exciting avenue for overcoming these challenges. The current research will focus on the role of metabolomics in identifying markers of microbial presence in food to enable early and rapid detection of foodborne pathogens.

Dr Snehal Jadhav is currently a mid-career researcher in the CASS Food Research Centre at Deakin University. Snehal completed her PhD and Post-doctoral research at Swinburne University specialising in food microbiology during which she had the opportunity to work on industry-linked projects. Prior to Deakin she briefly worked as a Research Officer at Metabolomics Australia in the Bio21 Institute at University of Melbourne, during which she worked on NCRIS funded research in microbial metabolomics. She has a passion for food safety and her current research is focussed on solving industry-relevant problems in microbial food safety. This includes using advanced separation science platforms to develop rapid pathogen detection strategies and developing sustainable antimicrobial solutions with the ultimate aim of reducing microbial food waste.

Dr Nuwan Vithanage, CSIRO

Big Data for proactive Food Safety management: towards increasing Australian Agrifood exports

This presentation aims to provide a comprehensive understanding of how big data applications can enhance food safety, offering a blueprint for future innovation in the field. It encourages a collaborative approach among various stakeholders to leverage these technologies for the benefit of public health and the global food supply chain.

Dr. Nuwan Vithanage is a Research Scientist at CSIRO in the Food Microbiology team within the Food System Integrity with background in dairy microbiology, food spoilage, and safety, her expertise spans across predictive microbiology, antimicrobial resistance, and sustainable waste management. Dr. Vithanage's academic journey includes a PhD in dairy microbiology from Victoria University (2017) and an extensive teaching and supervisory role in academia. Her professional experience is comprehensive, covering various industry roles, including food science and processing for dairy products, fermented vegetables, chocolate, and biscuits. Her work at CSIRO involves strategic and commercial projects that align with the organization's mission programs, contributing significantly to the field of food safety and stability.

Oladipupo Adiamo, University of Queensland

First Nations food preservation

Dr Oladipupo Adiamo is a Research Fellow at the Centre for Nutrition and Food Sciences, Queensland

Alliance for Agriculture and Food Innovation (QAAFI), the University of Queensland (UQ). Since the completion of his PhD in Food Science and Biotechnology in 2022 at QAAFI, UQ, he has been working in the ARC Industrial Transformation Training Centre for Uniquely Australian Foods at UQ. His work involves collaborating with Indigenous communities to develop nutritious and sustainable value-added foods from native plants for use in the food industry. His research primarily focuses on the health benefits and safety assessment of native plants by investigating their toxicity and phytochemical bioavailability on human health using a dynamic in vitro gastrointestinal model and cell culture lines.

Jay Kocharunchitt, UTAS

Glucose, a key factor to manipulate microbial spoilage of vacuum-packed lamb for shelf-life extension

Australian vacuum-packed (VP) lamb has a reputation for being high-quality with an exceptional shelf-life of 90 days under export conditions (-1 to 0°C). However, access to some markets may require a longer shelf-life. This is due to poor temperature control during shipment and the need for more time to sell product after arrival. In this presentation, we will explore the roles of natural glucose/glycogen in meat and its potential manipulation to extend shelf-life. This knowledge will aid the development of practical approaches for shelf-life extension, enabling the industry to increase its market access, while minimising unnecessary product wastage.

Dr Jay (Chawalit) Kocharunchitt is a Senior Research Scientist in Food Microbiology at the University of Tasmania. His expertise is in microbial ecology and physiology and they relate to food safety and quality. With over 20 refereed journal publications and book chapters to date, Dr Kocharunchitt has made a significant impact in his field, with an H-index of 13 and over 680 citations. He has also been actively involved in various industry-focused projects, where he has demonstrated his expertise in the development of commercial outputs, including a novel process and three ‘decision support’.

Agnes Mukurumnbria, Deakin University

Vapour phase activity in essential oils

Agnes Mukurumbira is a Ph.D. candidate and academic at Deakin University within the CASS Food Research Centre. Her research is exploring the antimicrobial efficacy of essential oils and their application in sustainable packaging systems. Agnes is also an award-winning science communicator, effortlessly bridging the gap between complex research and the wider community. Her ability to articulate intricate scientific concepts with clarity and enthusiasm has earned her accolades, and she was the winner of the 2023 Asia-Pacific 3 Minute Thesis Competition.

Dr Mark Bradbury, La Trobe University

Co-designing horticultural food safety interventions to foster sustainable and healthy diets in low- and middle-income countries

Mark is a food microbiologist and lecturer in food science at La Trobe University. His research focuses on evaluating the efficacy of food safety interventions and their role in contributing to sustainable, inclusive, and just food systems. He currently contributes to a range of food safety initiatives across Australia, Africa and in Southeast Asia relating to water quality, soil amendments, implementation of genomic surveillance and postharvest sanitiser validation. In addition, he also currently serves on the Freshcare Food Safety and Quality technical standards committee as the microbiologist specialist.

Mark has a Bachelor of Applied Science in Food Science Technology and a PhD from the University of Ballarat (now Federation University). He has previously worked for the CSIRO, was a visiting scholar with Plant and Food Research, New Zealand and was a research fellow the University of Sydney, where he currently maintains a research affiliation.

Dr Sukhvinder Pal (SP) Singh, NSW Department of Primary Industries

Extreme weather events impact the microbial food safety of field-grown leafy vegetables

Dr Sukhvinder Pal (SP) Singh is a Senior Research Scientist and Institute Director at the NSW Department of Primary Industries. His research program is focused on developing and translating new technologies and solutions to improve food safety and traceability in the horticulture sector. He champions science-based best practice and their adoption by growers through strong engagement and trusted partnerships. Dr Singh's research portfolio has several R&D projects of national importance, including 'Safe Leafy Veg', 'Safe Melons', 'Safe Citrus', and 'Digital Traceability'. His expertise in identifying the sources and routes of contaminants in the sector is highly recognised by the industry and regulators. In addition to his research role, he provides professional services through his elected roles as the Vice-Chair of the Postharvest and Quality Assurance Division at the International Society for Horticultural Science (2022-2026) and the Treasurer of the Australian Society of Horticultural Science. He is an Associate Editor of the Journal of Horticultural Science and Biotechnology and also holds a conjoint faculty position at the University of Newcastle.

Jasmine Lacis-Lee, BVAQ Food Safety Manager - Microbiology and Allergens

The application of the known to the unknown - managing unexpected microbiological risks.

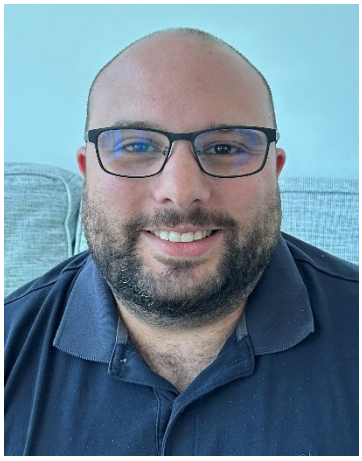
Jasmine is a Food Safety specialist, supporting industry in food allergen and microbiological risk mitigation. Jasmine started her career whilst still studying in a clinical pathology laboratory, before moving into the food industry in 1998. She has more than 20 years' experience in the food industry, having worked in laboratory, laboratory management, quality and food safety roles for Lactalis and Coca Cola Europacific Partners.

Jasmine's career has included developing and implementing one of the first national allergen management programs in Australia whilst at Lactalis. Jasmine has a passion for connecting analytical outcomes to manufacturing processes and using data to solve problems and mitigate risk. Leaving the manufacturing industry in 2015, Jasmine now uses her skills and knowledge to support the wider food industry and has been fortunate to work with both Australian and overseas organisations in her current role at BVAQ.

Jasmine was appointed a voluntary board director of the Allergen Bureau in 2018 and in 2021 became the Allergen Bureau President and board chair. In 2019 she was instrumental in the establishment of the Australian region of EHEDG (European Hygienic Engineering Design Group). Jasmine is involved in the AIFST Scientific and Advisory committee, has been a AIFST Mentor and actively supports AIFST to provide professional development opportunities to the food science community and became a Fellow of AIFST in 2022.

Michael Sciberras, Novonesis

BioProtection – New frontiers with cultures



Michael Sciberras studied Food Science and Technology, graduating with Honours at Victoria University. He has worked in the Australian Food Industry for 15 years in technical and development roles.

Michael joined the team at Chr. Hansen (now Novonesis) in 2015. His active participation with Novonesis global application networks enable Michael to transfer cutting edge solutions while unlocking the power of good bacteria to the Oceania food industry, where he has worked extensively, directly supporting manufactures with troubleshooting, optimisation and innovation projects.

Chr. Hansen cultures combined with the strong technical support are highly regarded and new culture solutions allow pathogen protection and spoilage reduction.