SPEAKER PROFILES

Keynote Presentations

An Evolutionary Perspective on Nutritional Science and Human Health: From Reductionism to System Approaches

Richard Head, The University of Adelaide, Australia

Professor Richard Head is a Pharmacologist and is currently Emeritus Professor in the Division of Health Sciences, University of South Australia, Affiliate Professor in the Discipline of Pharmacology, The University of Adelaide and Honorary CSIRO Fellow. Previously he was the interim Director of the Future Industries Institute at the University of South Australia, the Deputy Vice Chancellor & Vice President: Research and Innovation for the University of South Australia with a substantive position as the Director of the Sansom Institute for Health Research, Division of Health Sciences also at the University of South Australia. Formerly he was the Director of CSIRO's P-Health National Flagship and Chief of CSIRO's Division of Health Sciences and Nutrition and prior to that Chief of CSIRO's Division of Human Nutrition. He served as Professor of Pharmacology and Toxicology at West Virginia University Medical Centre, as Research Fellow with the Department of Medicine at the University of Melbourne and Postdoctoral Fellow at the Roche Institute of Molecular Biology USA. Professor Head provided leadership in integrating CSIRO's fundamental and applied research in human health into Australian health R&D. He is known for operating in translational health on a National scale with multidisciplinary programs. He was the recipient of the CSIRO Medal for Lifetime Achievement, the CSIRO Business Excellence Award and the US National Institutes of Health (NIH) Career Development Award. Prof. Head has a unique background and skill base in pharmacology and nutrition. He is a Member of numerous professional organisations and has extensive experience in research and research management.

SESSION 1

Transformation Technologies in Food Systems

Applications in Food Manufacturing and Supply Chains

Technology Innovation: Trends that are Reshaping Life Sciences Research and Approached to Food and Human Health

Chor San Khoo, International Life Sciences Institute (ILSI) North America, USA

Dr. Chor San Khoo is currently Senior Science Fellow at the North America Branch of the International Life Sciences Institute (ILSI) in Washington DC, USA, where she serves as science advisor to the institute's executive director and its scientific programs. Her responsibilities include leading the horizon science and technology trends tracking and authoring the ILSI NA Emerging Science Trends: Insights and Implications and the Emerging Science Signals reports. These reports identify emerging issues and opportunities of importance and relevance to the food and nutrition communities. Dr. Khoo is a co-editor in chief of the Frontiers in Nutrition and Food Science Technology Journal and has published articles on Food for An Urban Planet: Challenges and Research opportunities; Food Science without Borders; Goals in Nutrition Science 2015–2020; and Grand Challenges in Nutrition and Food Sciences. Dr. Khoo was formerly Vice President of Research and Development at the Campbell Soup Company, leading the Global Nutrition and Health Department with responsibility for setting global vision and strategies for internal and external collaborative research and partnerships. She led Campbell's initiatives on salt and health policy; and was involved in the development of salt reduction technologies, and research on salt taste mechanism. Dr. Khoo has published and presented in many areas of nutrition including nutrition and teenage pregnancy; nutritional intakes of elite athletes; pre-prepared meal regimens and improved health outcomes and compliance to dietary guidelines; vegetable juice to improve compliance to the DASH guidelines, research needs for study of food and addiction. She holds six patents on food meal programs for management of at-risk populations. Dr. Khoo received a Bachelor of Science, Chemistry from the University of Oregon, and a PhD in Nutrition Science from Iowa State University, with minors in Biochemistry and Physiology. She completed her post-doctoral research training at the University of California, Davis.

Innovations in Agriculture and Food and Implications for Nutrition and Precision Health

Chris Downs, CSIRO Agriculture and Food, Australia
Lynne Cobiac, CSIRO Health and Biosecurity, Australia

Dr. Chris Downs is Research Director – Food at CSIRO Agriculture and Food, Brisbane, Australia. Chris leads delivery of CSIRO's science and innovation outcomes in food, food ingredients and beverages. Key research areas include: Food Safety, Food Stability, Food Structure and Sensory and Food Transformation. Chris has experience working with the meat, dairy, seafood and horticulture sectors in Australia and New Zealand. He has previously held executive positions in Food Science Australia, CSIRO Food and Nutritional Sciences, CSIRO Animal, Food and Health Sciences and the NZ Institute for Crop & Food Research, with responsibilities including; capability development, science strategy and leadership, investment portfolio leadership, business development and commercialisation. His previous directorships include companies involved in innovation and commercialisation in the seafood and biomaterials sectors. Chris is currently a Director of one of New Zealand's Crown Research Institutes, the Australian Institute for Food Science and Technology (AIFST) and the Institute for Food Technologists (IFT) in the USA.

Professor Lynne Cobiac is the Science Director of CSIRO's Health and Biosecurity, a multidisciplinary science portfolio that focuses on preventing biosecurity threats, minimising the burden of disease and improving efficiency of the health system. Lynne is a Professorial Research Fellow at Flinders University and working with Flinders. She is also active in developing and implementing the National Food and Nutrition Research Development and Technology Transfer Strategy through chairing a working group on the nexus between food, nutrition and health. Lynne Cobiac was previously the Director (2012-2014) of the former CSIRO Preventative Health Research Flagship which comprised of multidisciplinary teams from CSIRO and other leading research institutions, working across science boundaries to address the challenge of reducing the impact of chronic disease in an ageing population. Prof. Cobiac has a background in nutritional biochemistry and research coupled with an Advanced Master of Business Administration (MBA), Corporate Director's training and business management experience.

New Agricultural Technologies for Sustainable AgriFood Systems in ASEAN: Challenges and Opportunities

Paul Teng, NIE International/Nanyang Technological University, Singapore

Professor Paul Teng is Managing Director of NIE International Pte. Ltd., a subsidiary of Nanyang Technological University (NTU), Adjunct Senior Fellow, Centre for Non-Traditional Security Studies, S. Rajaratnam School of International Studies, NTU Singapore; Adjunct Professor, Murdoch University, Australia, and Senior Fellow, Southeast Asian Regional Centre for Graduate Study and Research in Agriculture (SEARCA), Philippines. He is internationally recognized for his expertise in food security, commercialization and biosafety of crop biotechnology, agrotechnology innovations and bio-entrepreneurship, and sustainable development. He has over thirty years of experience in agri-food issues from positions in international organizations (the International Rice Research Institute, Worldfish Centre), U.S. universities (University of Minnesota, University of Hawaii) and the private sector. Prof. Teng has won numerous awards for his work such as the Eriksson Prize in Plant Pathology (Royal Swedish Academy of Science), an Honorary Doctor of Science (from Murdoch University, Australia) and is a Fellow of the American Phyto-pathological Society, and *The World Academy of Sciences (TWAS)*. He is Immediate Past-Chair, Genetic Modification Advisory Committee, Singapore and is also currently Chairman, International Service for the Acquisition of Agri-biotech Applications (ISAAA). He has published/ co-published eight books and over 200 technical papers. His latest book, co-authored with Manda Foo is titled "Food Matters – Issues in food and food security".

Data Science and Analytics: Blockchain and its Application in the Food Supply

Zelda Anthony, IBM ASEAN, Singapore

Zelda Anthony is IBM's Head of Blockchain, ASEAN, based in Singapore. She is responsible for developing IBM's blockchain business in the ASEAN region including understanding the key blockchain trends and opportunities and how they can benefit IBM's customers across all industries, developing IBM's blockchain strategy for the region and building an ecosystem with partners and Fintechs. Prior to the Blockchain leadership role, Ms. Anthony was Head of Payments for APAC at IBM and prior to that she spent 7 years at SWIFT where she held roles including Head of Compliance products APAC, Head of ASEAN, Head of New Customers APAC and Head of Oceania.

SESSION 2

Reshaping Human Health Through Translational Science

Improved Nutrition, Biomedical Impact and Public Health Solutions

Harnessing Emerging Technologies in Nutrition and Biomedical Sciences for Public Health Improvement

Christiani Jeyakumar Henry, Clinical Nutrition Research Centre, A*STAR/NUHS, Singapore

Professor Christiani Jeyakumar Henry is Director of the Clinical Nutrition Research Centre and Deputy Executive Director of the Singapore Institute for Clinical Sciences (SICS) A*STAR where he spearheads the translation of nutrition research into food applications, acting as a consultant to global food companies on aspects of food product development with special reference to nutrition. He is a Fellow of the UK Institute for Food Science and Technology and is a Registered Public Health Nutritionist. Prior to working at the SICS, Prof. Henry was the Head of Food Sciences and Nutrition at Oxford Brookes University, UK, and was instrumental in the development and launch of the UK's first dedicated Functional Food Centre, in his role as Director. Prof. Henry has served on several committees including the UK Committee on Medical Aspects of Food and Nutrition Policy (COMA) panel on Novel Foods, Board member of the UK Food Standards Agency (FSA) and was a member of the General Advisory Committee on Science of the FSA. He was a member of the recent Joint FAO/WHO consultation on fats and fatty acids in human nutrition and has acted as a consultant to FAO, WHO and UNICEF. His major research interests are in energy regulation, functional foods, obesity, glycaemic index, energy and protein metabolism and nutrition in the elderly. Prof. Henry has published over 270 papers and presented over 380 lectures around the world and is Editor-in-Chief of the journal 'Advances in Food and Nutrition Research'. He was awarded the British Nutrition Foundation prize in 2010 for his outstanding contribution to nutrition and was made a Fellow of the International Academy of Food Scientists and Technologists in 2012. Prof. Henry was the recipient of the Most Inspiring Mentor Award from A*STAR Singapore in 2017 and has recently featured as a scientific commentator on the highly successful TV program "Food Files" aired worldwide.

Advances in Antioxidant Research: Translation from Bench to Applications

Barry Halliwell, A*STAR/National University of Singapore, Singapore

Professor Barry Halliwell is Chairman, Biomedical Research Council, Agency for Science, Technology and Research (A*STAR) and Senior Advisor to the President, National University of Singapore (NUS). He was a faculty member with King's College London from 1974 to 2000 and held a prestigious Lister Institute Research fellowship. From 1995 to 1999, he was a Visiting Research Professor with the University of California, Davis, School of Medicine, Divisions of Cardiology and Pulmonary/Critical Care Medicine. Prof. Halliwell was a Visiting Professor of Biochemistry to NUS from 1998 to 2000, Head of NUS' Biochemistry Department from 2000 to 2007 and Deputy Director, Office of Life Sciences from 2001 to 2003. From 2003 to September 2008, he was the founding Executive Director of the NUS Graduate School of Integrative Sciences and Engineering. From Mar 2006 to May 2015, he was the Deputy President (Research and Technology) at NUS, driving the NUS research agenda. An internationally-acclaimed biochemist, Prof. Halliwell is known especially for his seminal work on the role of free radicals and antioxidants in biological systems. The Thomson Reuters lists Prof. Halliwell as one of the world's most highly-cited researchers in Biology and Biochemistry, with a Hirsch Index of 151. His book *Free Radicals in Biology and Medicine* published by Oxford University Press, and now in its fifth edition, is regarded worldwide as an authoritative text in the field. Among multiple awards, he received the "Lifetime Achievement Award" by the Society for Free Radical Biology and Medicine in the USA for overall sustained research excellence. His research focuses on the role of free radicals and antioxidants in ageing and in human disease, particularly neurodegenerative diseases. His interest in identifying the most important antioxidants in the human diet and in developing novel antioxidants has critical bearing on treating diseases and perhaps ageing itself. Prof. Halliwell graduated from Oxford University with B.A. (1st class) and D. Phil degrees. He also holds a D.S. degree from the University of London.

Translational Genomics and Potential Gene Editing Tools in Preventative Health and Diseases

Meng How Tan, Genome Institute of Singapore, A*STAR, Singapore

Professor Meng How Tan is currently Senior Research Scientist in the Genome Institute of Singapore at Agency for Science Technology and Research (A*STAR) as well as Assistant Professor in the School of Chemical and Biomedical Engineering at Nanyang Technological University (NTU), Singapore Prof. Tan was a recipient of the Overseas Merit Scholarship from the Singapore Government, the National Science Scholarship (Ph.D.) from A*STAR, and the Donald Wills Douglas Fellowship from Caltech. Currently, his laboratory is interested in understanding how biological information hardwired in the genome of living cells can be permanently or transiently altered at both the DNA and RNA levels. Prior to setting up his laboratory in Singapore, he received a B.S. degree in mechanical engineering and a B.A. degree in economics from University of California, Berkeley, USA, a M.S. degree in aeronautics from California Institute of Technology (Caltech), USA, a M.S. degree in biomedical engineering from NTU, Singapore, and a Ph.D. in developmental biology from Stanford University, USA. He also performed postdoctoral research on genomics and stem cells with Jin Billy Li, Mylene Yao, and Wing Hung Wong at Stanford University, USA.

SESSION 3

Transformation Technologies in Food Safety

Improving Food Safety Assessment and Management

Next Generation and Whole Genome Sequencing: Opportunities and Challenges for Food Safety Management

Masami Takeuchi, Food and Agriculture Organization of the United Nations (FAO), Thailand

Dr. Masami Takeuchi is a Food Safety Officer at the Food and Agriculture Organization of the United Nations Regional Office for Asia and the Pacific (FAORAP) in Bangkok, Thailand. Dr. Takeuchi provides food safety advice to FAO Members, as well as the Codex Alimentarius Commission, including risk assessment activities and safety assessment of food/feed derived from new technologies including biotechnologies. She also advises FAO Members on applications and development of innovative technologies (i.e. genome sequencing) for better food safety management. She is the manager of the global database on safety assessment results of foods derived from GMOs, entitled 'FAO GM Foods Platform'. Dr. Takeuchi continues to lead global FAO activities, including those related to new and emerging technologies, while she takes up various regional and national initiatives on food safety to assist countries in the Asia-Pacific region for their food safety capacity development. Dr. Takeuchi holds a Ph.D. in food science and human nutrition from Washington State University, USA.

Novel Computational Approaches for Assessing the Allergenic Potential of Proteins for the Food Industry

Sebastian Maurer-Stroh, Bioinformatics Institute, A*STAR, Singapore

Dr. Sebastian Maurer-Stroh is senior principal investigator in the A*STAR Bioinformatics Institute (BII), Singapore. With more than 125 publications in the field and an h-index of 44, he is known for developing computational tools for protein sequence and structure analysis and contributing to virus surveillance and disease outbreaks analyses in Singapore and the global WHO influenza surveillance network. He also has a strong track record for industry collaborations ranging from local SMEs to large multinationals on sequence analysis and a major research programme on prediction of allergenicity potential of proteins. His protein function analysis skills are also supporting the A*STAR Biotransformation Innovation Platform positioned at the academic-private interface.