Science Symposium on
Smart Eating
Harnessing Innovative Approaches & New Technologies for Health and Sustainability
April 23, 2019
Sheraton Imperial Kuala Lumpur, Malaysia

Organizers

Collaborator
Science Symposium on Smart Eating – Harnessing Innovative Approaches and New Technologies for Health and Sustainability, April 23, 2019, Kuala Lumpur, Malaysia

PROGRAM

07:30 – 08:30 hr  Registration
08:30 – 08:45 hr  Introduction and Welcome
                 Mrs. Boon Yee Yeong, Executive Director, ILSI SEA Region, Singapore
                 Dr. E-Siong Tee, President, Nutrition Society of Malaysia (NSM)

KEYNOTE

Chairperson:  Mr. Geoffrey Smith
              President, ILSI SEA Region, Singapore

08:45 – 09:20 hr  Human Variation in Response to Food and Nutrients –
                  Exploring a Path to Smart Eating for Personalized Health and Nutrition
                  Emeritus Prof. Richard Head, The University of South Australia

09:20 – 09:55 hr  Smart Eating & The 4th Industrial Revolution: Harnessing New and Innovative Technologies for Nutritious and Sustainable Foods
                  Prof. Purwiyatno Harlyadi, Bogor Agricultural University (IFB), Indonesia

09:55 – 10:05 hr  Q&A

10:05 – 10:25 hr  Morning Refreshment Break

SESSION 1:  What is Smart Eating?
            Strategies and Opportunities in Charting our Nutritional Wellbeing

Co-Chairpersons:  Prof. Norimah A. Karim
                  Honorary Secretary, NSM and Professor, Universiti Kebangsaan Malaysia
                  Dr. Emorn Udomkesmalee
                  Associate Professor, Institute of Nutrition, Mahidol University (INMU), Thailand

                  Dr. Chor San Khoo, ILSI North America, USA

10:50 – 11:15 hr  Targeting Smart Eating Goals through Innovative Tools and Behavior Nudge
                  Dr. Gilly Hendrie, CSIRO Food and Nutritional Sciences, Australia

11:15 – 11:40 hr  Harnessing Smart Devices to Optimize Human Performance
                  Assoc. Prof. Jason Lee, National University of Singapore

11:40 – 12:05 hr  Smart Eating through an Evolution of Nutritional and Functional Enhancement of Food and Ingredients
                  Dr. Anadi Nithiharmyong, INMU/Food Science and Technology Association of Thailand (FoSTAT), Thailand

12:05 – 12:30 hr  From Nations of “Makan Nasi” to “No-Carb”? Recalibrating the Trend and Perception of Asia’s Grain
                  Dr. Cecilia Cristina Santos-Acuín, International Rice Research Institute, Philippines

12:30 – 12:50 hr  Q&A

12:50 – 13:50 hr  Lunch and Networking

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ILSI
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Southeast Asia Region  SEA Region Malaysia
Science Symposium on Smart Eating – Harnessing Innovative Approaches and New Technologies for Health and Sustainability, April 23, 2019, Kuala Lumpur, Malaysia

SESSION 2: Smart Eating Perspectives on Agri-Food Processing Technologies, Safety and Sustainability

Chairperson: Dr. Stéphane Vidry
Director of Operations, ILSI Governance and Coordination, USA

13:50 – 14:15 hr  MYSaveFood – Agri-tech and Behavior Approaches to Tackling Food Loss and Reducing Waste for Sustainable Future
Dr. Ainu Husna MS Suhaimi, Malaysian Agricultural Research and Development Institute (MARDI)

14:15 – 14:40 hr  The Role of AI and Innovative Technologies in Agri-Food Industry – Transforming Food System and Enhancing Nutrition Security
Prof. Yanara Arkeman, IPB, Indonesia

14:40 – 15:05 hr  Next Generation Sequencing for Food Safety – Public Health Benefits and Food Industry Application
Dr. Lay Ching Chai, University of Malaya, Malaysia

15:05 – 15:30 hr  Re-Shaping a Generation’s Food Behavior – The ‘Disruptors’ of Food E-Commerce and How Best to Regulate
Dr. Kai Zhong, China Food Information Center, People’s Republic of China

15:30 – 15:50 hr  Q&A

15:50 – 16:10 hr  Afternoon Refreshment Break

SESSION 3: Ideation & Innovation for Health & Sustainability – Science to Market

Chairperson: Dr. Yen Ling Low
Area Center Director, R&D, Abbott Nutrition R&D Center for Asia Pacific, Singapore

16:10 – 16:25 hr  Precision Technologies & Blockchain for My Spinach
Mr. Daniel Wong, CrowdFarmX, Singapore

16:25 – 16:40 hr  Fermentation Technology for Nutrient Recovery from Soybean Residues
Dr. Jaslyn Lee, Nanyang Technological University, Singapore

16:40 – 16:55 hr  Innovation for Aging Population
A Multi-Discipline Approach for Innovative Functional Food
Dr. Dunyaporn Prachootham, INMU, Thailand

16:55 – 17:10 hr  Disruptive Food Innovation Challenges - Creating Safer and Personalized Puree Meals with 3D Food Printing
Ms. Gladys Wong, Khoo Teck Puat Hospital, Singapore

17:10 – 17:25 hr  Q&A

PANEL DISCUSSION

Chairperson: Dr. E-Siong Tee
Scientific Director, ILSI SEA Region, Malaysia

17:25 – 17:55 hr  • Consumers’ perception and acceptance on use of new technologies in food and the food chain
• Multi-stakeholder partnerships in the advancement of new technologies in smart eating and eating sustainably

17:55 – 18:00 hr  Closing Remarks

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Symposium Information

OFFICIAL LANGUAGE
The official language of the symposium is English.

NAME TAGS
Registered delegates are to wear their name tags at all times during the symposium for identification and security purposes. Admission to the symposium is based on name tags.

SPEAKERS’ PRESENTATION SLIDES
The speakers’ presentation slides are available for viewing online. Please use the QR code or the URL link below to access them:
https://ilsisea-region.org/event/smarteating2019/

LUNCH
Lunch will be served at Essence Restaurant, Level 1.

TEA BREAKS
Morning and afternoon refreshments shall be served at the Foyer, Nusantara Ballroom 2 & 3.

ELECTRONIC DEVICES
As a courtesy to all delegates and speakers, cellular phones and other electronic devices must be operated in silent/vibrated mode throughout the symposium sessions. No telephone conversations are permitted during the symposium.

PARKING
Flat rate parking at the hotel is at RM9.00 nett per entry. Validation will be done at Concierge counter at Lobby Level.

MUSLIM PRAYERS ROOM
Surau is located at the Faber Imperial Court Lobby, Lobby Level of the hotel.

CERTIFICATE OF ATTENDANCE
E-Certificate of Attendance will be sent to registered delegates upon receiving the completed evaluation form of the symposium online. Please use the link here to access the evaluation form:
http://tiny.cc/EF_SmartEating2019

LIABILITY
The Organising Committee will not assume any responsibility for accidents, losses or damages, as well as delays or modifications of the symposium programme.
About the Organizers

International Life Sciences Institute (ILSI) Southeast Asia Region
& ILSI Southeast Asia Region Malaysia Country Committee

The International Life Sciences Institute (ILSI) is a non-profit, worldwide foundation based in Washington, DC, USA established in 1978 to advance the understanding of scientific issues relating to nutrition, food safety, toxicology, risk assessment and the environment. ILSI accomplishes its work through its branches and the ILSI Research Foundation.

Established in 1993, ILSI Southeast Asia Region facilitates and coordinates scientific programs, research and information dissemination in ASEAN, Australia, New Zealand and the Pacific Islands. Based in Singapore, ILSI Southeast Asia Region also oversees Country Offices and Committees in Australia, Indonesia, Malaysia, Philippines, Thailand, and Vietnam.

By bringing together scientists from government, industry, academia and the public sector, ILSI seeks a balanced approach to solving problems of common concerns for the health and well-being of the general public. ILSI receives financial support from the industry, government, and foundations.

About the Collaborator

Nutrition Society of Malaysia

Nutrition Society of Malaysia (NSM) was established in 1985 as a non-profit professional organization to promote, advance and disseminate scientific knowledge of food and nutrition and promote healthy eating and active living amongst all Malaysians.

NSM supports the advancement of research, shares practical insights and important discoveries through facilitating and organizing scientific conferences and events. NSM also support the Government’s efforts in promoting healthy nutrition in the society to combat nutrient deficiencies as well as diet-related chronic diseases in the country.

Through continuous dissemination of practical nutrition information to the young and old, NSM hopes to guide them to discover the benefits of good nutrition and a healthy lifestyle.
KEYNOTE

Chairperson:
Mr. Geoffry Smith
ILSI SEA Region
Singapore
Chairperson’s Biography

Mr. Geoffry Smith is President of ILSI Southeast Asia Region based in Singapore, and a Member of the Executive Committee of the global ILSI Board. In addition, he is the Chairman of the Essential Micronutrients Foundation, a non-profit organization which addresses micronutrient deficiencies globally as a public health issue. He is also Director of Nutrition Strategies International which deals with food and nutrition issues in developing countries. In addition, he serves as a Member of the editorial board of the journal, Food and Nutrition Bulletin. Prior to his current positions, Mr. Smith was the Global Director, Health Chelates for Akzo Nobel Functional Chemicals, and directed the global business for these compounds in food and nutrition as well as pharmaceutical applications. He was responsible for the global project within Akzo Nobel addressing iron deficiency anemia. In addition, Mr. Smith directed the Asia Pacific activities for Akzo Nobel’s Innovation Unit. He is a thirty-year veteran of the chemical industry in the Asia Pacific and has resided in Singapore for more than 20 years. He is a Member of the Nutrition Society of the UK, the American Society of Nutrition and the American Chemical Society.
Human Variation in Response to Food and Nutrients -
Exploring a Path to Smart Eating for Personalized Health and Nutrition

Biography
Emeritus Prof. 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, Prof. Head was the Director of CSIRO’s Preventative 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. Prof. 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.

Abstract
There has been a fascinating historic path from dietary customs to the more recent dietary guidelines for the promotion of health and wellbeing. Often associated with urbanisation, focus in public health was centred historically on infectious diseases and nutrient deficiencies. Nutritional sciences played a key role in determining the molecular essentials in diet that would offset malnutrition and this was effectively translated to advice at the population level.

With increasing human lifespan came an appreciation of the role of lifestyle and in more recent years an emerging exploration of the role of the human genome and related omics in chronic disorders. Focus in the Nutritional Sciences shifted to the Health Potential of Food, the role of diet in chronic disorders, and more recently an appreciation of the interplay of the omics and nutrition in human health. A major aspect of that change in focus was an evolution in thinking from a reductionist approach to a holistic or systems appreciation of nutrients in a dietary pattern (Shoa et al., 2017).

Concurrently, there is a growing interest in intra-individual or personal responses from the standpoint of three considerations. Firstly, the advances in technology that now lead to the potential for enriched data characterisation at an individual level in health and nutrition (for example the genome, epigenome, microbiome, dietary behaviours, metabolic flexibility and lifestyle). Secondly the continued focus in developing biomarkers for as markers for the presence of the early onset of disease or as potential guides for disease retardation or prevention.
Thirdly an understanding that nutrients including essential nutrients can have multiple actions (pleiotropy). Understanding the interplay between these three areas and intra-individual responses will require, I believe, the viewing of Nutritional Sciences through the lens of Complex Systems Sciences.

If one was to speculate on the future, I think you would see dietary recommendations and advice based on Nutritional Sciences continuing as a cornerstone in food and nutrition in populations. Randomized control trial-based experimentation will continue to provide a key platform for the evaluation of foods and nutrients for their health impact. However, understanding more comprehensively human variation in personal response to foods and nutrients in a holistic and systems approach may start to emerge with the ongoing refinement in the omics, the ability to handle large and disparate data and the ability to adopt the approaches of Complex Systems Science. This will be the essence of exploring the path to smart eating for personalized health and nutrition.

Biography

Prof. Purwiyatno Hariyadi is a Professor in Food Processing and Engineering at the Department of Food Science and Technology, Faculty of Agricultural Engineering and Technology, Bogor Agricultural University (IPB), Indonesia. He was the Director of Southeast Asian Food and Agricultural Science and Technology (SEAFAST) Center, IPB. Prof. Hariyadi was also the Vice Dean of Faculty of Agricultural Engineering and Technology (1995 to 2000) and the Head of the Department of Food Science and Technology (2000 to 2004) at Bogor Agricultural University, Indonesia.

Prof. Hariyadi is actively involved with many professional organizations, including the Institute of Food Technologist (IFT) and Institute for Thermal Process Specialist (IFTPS). Prof. Hariyadi has been consulting for the Government Agencies (National Agency for Drug and Food Control and Ministry of Agriculture) as well as for food industries. His research interests are (i) post-harvest handling and processing; especially for palm oil and (ii) food processing and engineering; especially on sterilization, pasteurization and aseptic processing/packaging, including irradiation of foods. In 2012, he was elected to the Indonesian Academy of Sciences as a Member of Commission of Engineering Sciences, and in 2016, he was elected to the International Academy of Food Science and Technology (IAFoST - IUFoST).

He is also a Member of CODEX National Committee since 2010, and in 2017, Prof. Hariyadi was elected the Vice-Chair of Codex Alimentarius Commission. He was the President of the Indonesian Palm Oil Society (2005-2009) and the President of Indonesian Association of Food Technologist (IAFT) for two periods (2006-2008; and 2008-2010). Prof. Hariyadi is also the Chief Editor of monthly magazine of FOODREVIEW Indonesia. He received his Ph.D. in Food Chemistry (with minor in Chemical Engineering) from the University of Wisconsin-Madison, USA (1995).

Abstract

Generally, there is an increased awareness about the important relationship between eating - as individual actions - with many other aspects of human life. Eating activities are not only linked and influenced by health aspect, but also by, inter alia, enjoyment, pleasure, socio-cultural environment, faith (religion), lifestyle, certain expected performance and sustainability aspects. Therefore, the challenge is that one must be smart and mindful of these multi-factors when it comes to smart eating. With the emergence of the 4th industrial revolution, this challenge is even greater due to the abundant and rapid flow of information regarding smart eating. What makes smart eating especially more problematic is because eating provides an aspect of enjoyment and pleasure. This could lead to confusion on whether we live to eat or eat to live.
Firstly, smart eating starts from the smart selection of many varieties of food that are available. This presentation will discuss the importance of establishing the simple metric, considering all important aspects of smart eating, that can be used not only by consumers to make better food selection but also by producers, manufacturers, traders, and retailers to provide food choices. The importance of new and innovative technologies, such as genetic engineering, irradiation, high pressure processing, ohmic heating, and modified atmosphere packaging, to assure the availability of a variety of safe, nutritious, and sustainable foods, to support the smart eating, will also be discussed.
SESSION 1

What is Smart Eating?
Strategies and Opportunities in Charting our Nutritional Wellbeing

Co-Chairpersons:
Prof. Norimah A. Karim
NSM and Universiti Kebangsaan Malaysia (UKM) Malaysia

Dr. Emorn Udomkesmalee
Institute of Nutrition, Mahidol University (INMU) Thailand
Co-Chairpersons’ Biographies

Prof. Norimah A. Karim is a Professor of Human Nutrition in the Nutritional Science Program, School of Healthcare Sciences, Faculty of Health Sciences, Universiti Kebangsaan Malaysia (UKM), Malaysia. She has been a Lecturer in Nutrition for almost 30 years. Her research expertise includes dietary assessment methods, in particular developing and validating food frequency questionnaire, public health nutrition, community nutrition, body image and development of nutrition education packages.

Prof. Norimah is the Chairman of Technical Working Groups for Nutrition Research, Ministry of Health which is responsible for Nutrition research under Malaysia’s National Plan of Action for Nutrition. She is a Member of the Task Force of Policy Priorities in combating obesity in Malaysia as well as a Member in the National Plan of Action for Nutrition Malaysia (2016-2025) working group. Prof. Norimah is the Chairman of the Working Group of the Editorial Bibliography of Nutrition Research in Malaysia. She is a contributor to chapters in Recommended Nutrient Intake for Malaysia and Malaysian Dietary Guideline for adults, children and adolescents.

Prof. Norimah is actively involved in research having led several projects on public health nutrition and food consumption habits of the community. She has received grants from the Malaysian Government, international agencies and industries. Prof Norimah is currently the Vice President of the Malaysian Association for the Study of Obesity (MASO) and the Honorary Secretary of the Nutrition Society of Malaysia (NSM). She is a Fellow of NSM. She has served as a member of the Steering Committee and Expert Panel of the Nutrition Month Malaysia since 2005 and Expert Panel of Positive Parenting, an official guide series on maternal, child and family care since 2006.

Dr. Emorn Udomkesmalee is the Associate Professor and Former Director of the Institute of Nutrition, Mahidol University, Thailand. She holds a current position of Adjunct Associate Professor in the Department of International Health, Bloomberg School of Public Health, Johns Hopkins University. Dr. Udomkesmalee is currently a Member of international and national committees: Scientific Council - Institut de Recherche pour le Développement (IRD), France; The New York Academy of Sciences/Sackler Institute for Nutrition Science Board; International Food Policy Research Institute (IFPRI) Board of Trustees; Sight and Life Foundation Board; Former Co-Chair of Independent Expert Group for Global Nutrition Report; Advisor to the Scaling Up Nutrition (SUN) Movement Capacity Strengthening Initiative; Board of Trustees for the Micronutrient Forum; Founding member of the Society for Implementation Science in Nutrition (SISN); Scientific Director of ILSI Southeast Asia Region; Advisory Panel for Nutrition Association of Thailand; Ajinomoto Foundation/Thailand Board. Her research interests include micronutrient assessment, bioavailability and metabolism; efficacy of food-based interventions to address micronutrient deficiencies; maternal and child nutrition policy and program implementation. Dr. Udomkesmalee received her Ph.D. in nutritional biochemistry and metabolism from Massachusetts Institute of Technology (MIT), USA in 1985. Her post-doctoral training was at the Vitamin and Mineral Nutrition Laboratory, Beltsville Human Nutrition Research Center, USDA in 1987.
The Art and Science of Smart Eating - What, Why and How?

Biography

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. She leads the institute’s program on Emerging Science, and authors its bi-yearly Emerging Science Trends and Signals Reports which provide insight for 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. Prior to ILSI, she held the position of Vice President of Research and Development (Global Nutrition and Health) at The Campbell Soup Company. She 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. She holds six patents on food meal programs for management of at-risk populations. Dr. Khoo received a B.S. in Chemistry from the University of Oregon, USA, and a Ph.D. in Nutrition Science from Iowa State University, USA, with minors in Biochemistry and Physiology. She completed her post-doctoral research training at the University of California, USA.

Abstract

Dr. Chor San Khoo¹ and Prof. Adam Drewnowski²

National dietary guidelines for healthy eating to promote health and disease prevention are developed from scientific evidence and expert consensus. These guidelines provide the foundational principles, and rationales for recommended approaches for healthy or smart eating. Despite long-standing existence of these dietary guidelines, ability to achieve and adhere to smart /healthy eating goals have been challenging and low at individual and population levels. Some contributing reasons that have been reported involve difficulty and inaccuracy in food intake measures, lack of defined specific outcomes, food belief systems, social-cultural and economic factors, food palatability, food experience and behavior, food literacy, genetic variation, personalized benefit value for short- and long-term returns. Technologies now exist that can be applied to improve smart eating at the macro and micro level e.g. smart phones, wearables, geo-locator, cloud data storage, big data processing and artificial intelligence, and new sensory appeal technologies using sensory and visual cues.

¹Senior Science Fellow, North American Branch of ILSI, Washington, DC., USA
²Professor, University of Washington, USA and Chair, Board of Trustee, ILSI Research Foundation, USA

Organizers

ILSI Southeast Asia Region

Collaborator

ILSI SEA Region Malaysia
Traditionally, smart eating has centered on the link between diet and health. Recently, interest has surfaced to include environmental outcome. In an increasingly VUCA environment, concerns about climate change, shrinking agricultural land mass, environmental pollution, global population growth, demographic shift, longer life span, more women working, double burden of malnutrition and diet-related chronic disease pandemics present new complexity and challenges to current smart eating. An interest to preserve and sustain the planet health has inextricably change our concept of smart eating to link diet and health and environmental sustainability, This new normal suggests a need to rethink current smart eating practices and consider more pragmatic solutions aim at individual (micro level) retrievable-, memorable messages, measurable outcomes and approaches personalized to meet individual capability, needs and value benefit. To do this will need transformational thinking, applying convergence in science and art approaches for simpler and more resilient solutions for smart eating that benefits at individual and population incorporating nutrition, food appeal, economics, informatics, and achievable health outcomes.
Utilizing the characteristics of technology can engage the population and help to shift dietary behaviour towards a healthier pattern of eating, in line with nutrition recommendations. Monitoring what a population eats is difficult under current resource constraints. Adapting traditional methods of dietary assessment to incorporate technology is one way to reduce the burden of administration, reduce the costs associated with data collection and analysis, and reduce the lag time for the dissemination of results. The CSIRO Healthy Diet Score is an online survey of short food-based questions which estimates compliance with the Australians Dietary Guidelines. The survey provides self-assessment of diet quality and brief personalised feedback, suggesting key areas for dietary improvements. Since launching in May 2015, over 230,000 Australians have completed the survey. These data provide insights into the population’s food intake and compliance with our food-based guidelines. For example, Australian women have higher diet quality than men - that is they are more compliant with guidelines. Older adults do better than younger adults, and normal weight adults do better higher than obese adults. Population surveys have rarely identified dietary patterns associated with excess energy intake in relation to risk of obesity. Data from this survey suggests individuals who have the lowest diet quality are almost three times more likely to be obese than those with the highest diet quality. The most common areas that Australians receive feedback for are discretionary foods (73.8% of people), followed dairy foods (55.5%) and healthy fats (47.0%).
Targeted and tailored information can empower people to change even the most entrenched dietary behaviours. The large dataset that this survey has provided has led to the development of evidence-based digital tools to improve diet quality. The VegEze smartphone app was built around a target behaviour of ‘having 3 different types of vegetables for dinner’, as the Diet Score survey data showed this specific behaviour was associated with higher vegetable consumption and greater likelihood of achieving dietary guideline recommendations. Smartphones have characteristics which may support the complexity of changing dietary behaviour. For example, smartphones are increasingly ubiquitous, have the ability to reach individuals at nearly any time or place, can be highly interactive, can deliver information in a way that is engaging and rewarding, and provide timely feedback. Tailored feedback can also grow with user inputs, creating a personalized experience, which may encourage extended engagement and success with an intervention. They may also serve as a cost-effective and scalable way to deliver nutrition interventions to large audiences. VegEze was launched in the Apple App Store as a 21-day challenge and over 5,000 people downloaded the app and completed the baseline survey. During the 21-day period, the app was able to shift vegetable intake and variety across the sample population, and resulted in an average increase of half a serve of vegetables per day. A pleasing result was that VegEze was appealing to those with low intake at baseline. These participants gained most out of the app, increasing their intake by almost one serving per day. We also found that higher app usage was associated with greater increases in vegetable intake. However, like with most apps, retention was difficult to maintain. Engagement with technology can drive behaviour change, but the challenge remains to harness the power of technology to build tools that are engaging and successful.
Abstract

Evidence-based recommendations often do not optimize performance of every individual in the cohort. Adoption of general guidelines in hope to achieve optimal human performance can at times induce negative health implications. For example, the desire to minimize excessive dehydration by drinking based on general guidelines can induce overhydration, leading to water intoxication that is potentially fatal. With the impending rise in global temperature, there is a pertinent need to maximize work productivity without compromising health (heat injury etc.). As there is extensive variability in physiological tolerance to a given absolute level of stress, individual monitoring of physiological strain during exertional events will allow optimal safety and work productivity without delayed and premature cessation of activity respectively. The development of individualized guidelines that accounts for intrinsic and extrinsic factors is envisaged. With the rapid growth in data analytics and smart devices, there is huge potential to harness these enablers to disrupt human performance without compromising safety. These smart devices offer huge potential to collect rich sources of data to guide interventional strategies.
Smart Eating through an Evolution of Nutritional and Functional Enhancement of Food and Ingredients

Biography

Dr. Anadi Nitithamyong is Senior Advisor at the Institute of Nutrition, Mahidol University (INMU), Thailand where she served as the Deputy Director for Education and Special Affairs from 2008 to 2011 and Deputy Director for Policy and Planning from 2015 to 2016. Her research interests and experiences include food processing and product development for nutritional and functional purposes particularly dietary fiber related areas. Currently, she is the President of the Food Science and Technology Association of Thailand (FoSTAT) and a Member of the Nutrition Association of Thailand (NAT). She is also a Member of the Scientific Advisors of the International Life Sciences Institute (ILSI), Southeast Asia Region and is the Scientific Coordinator for its Thailand Country Committee. Dr. Nitithamyong received her Ph.D. in Food Science from the University of Wisconsin-Madison, USA.

Abstract

At present, both fresh and commercially processed foods play a vital role in the global food supply. Increasing awareness among consumers regarding nutrition, health and well-being has driven the food manufacturers to respond to these challenges. Modern and emerging technologies are being applied to improve food processing, safety and quality as well as to promote the development of food derived benefits and functionally modified foods for better health. Moreover, the changes in population structure, consumer preference and regulatory atmosphere also encourage the food industry to adapt in order to be successful and sustainable. The presentation will describe varieties of innovation that could contribute to the evolution of nutritional and functional enhancement of foods and ingredients towards smart eating. They include, for example, food innovation/ renovation, novel food/ ingredient production, biofortification, allergy prevention/ reduction and enabling technology for fresh but stable food.
From Nations of “Makan Nasi” to “No-Carb”?
Recalibrating the Trend and Perception of Asia’s Grain

Biography

Dr. Cecilia Cristina Santos-Acuin is currently Human Nutrition Scientist at International Rice Research Institute, Philippines. She participates in research that addresses 1) micronutrient deficiency through nutrient dense rice varieties, 2) metabolic issues related to rice consumption through the identification and testing of low glycemic index rice and other functional attributes of rice, and 3) rice safety concerns through investigations of heavy metal, mycotoxin and chemical contaminants in rice. Dr. Acuin chairs the Research Utilization Committee, Philippine National Health Research System, under the Philippine Council for Health Research and Development, and had been Head of the Secretariat of the Universal Health Care (UHC) Study Group, University of the Philippines Manila - National Institutes of Health, that generated a research and policy base towards the institutionalization of UHC as a country policy.

As the previous Chief Science Research Specialist of the National Assessment & Monitoring Division, Food and Nutrition Research Institute of the Philippines Department of Science & Technology (FNRI-DOST), she was responsible for the conduct of the Philippine National Nutrition Surveys, and provided oversight for nationwide nutrition research projects of three Sections: the Nutritional Assessment Section, the Nutritional Statistics and Informatics Section, and the Nutritional Interventions, Evaluation and Policy Section.

Abstract

Rice defines Asia in myriad ways - from its historical roots, to how its production systems have shaped civilizations, in the manners by which its planting and cuisine have moulded cultures, and how its abundance has determined economies, stability of governance, security in food, and survival itself. About 90% of rice is grown and consumed in Asia, with Asia prospering even as it is benefiting the most from the rice science that feeds the continent’s billions. But in the early part of this millennium, studies emerged associating white rice intake with the increasing rates of diabetes, obesity and metabolic syndrome particularly among Asian populations. Because of the quantities of white rice that Asians consume, this was contributing significantly to the glycemic load of their diets, relative to other food sources, and was impacting especially on increased diabetes risk.

Ecological data, however, points to a declining trend in rice intakes throughout most of Asia, alongside rising diabetes and obesity rates. Recent, more refined studies from China, India, and Singapore indicate that a more comprehensive view - of rice when part of a diet rather than as a single food item, inclusion of its quality and nutrient attributes, consideration of co-factors such as smoking, alcohol intake and physical activity - emphasize lifestyle, rather than diet alone, as key to the development of these non-communicable diseases. Interventions that replace white with brown rice, and trends in carbohydrate replacement are proving to be
effective as Asians continue to include rice as part of healthier food choices and a more diverse diet.

Our understanding of the rice genome and the ways by which the rice plant’s growing environment can be modified has resulted in a vigorous research track towards selecting rice traits with low glycemic index, increased resistant starch and dietary fiber. Likewise, omics technology has allowed breeders to tap the rich diversity of rice in identifying lines with enhanced nutrient density, flexibility in responding to consumer sensory expectations, while meeting farmers’ productivity expectations and environmental sustainability goals. Value addition in rice preparation and rice product development are a high priority for advancing Asian economies. These exciting innovations are all coming together as a “smart eating” package which ensures that rice will always be Asia’s grain.
SESSION 2

Smart Eating

Perspectives on Agri-Food Processing Technologies, Safety and Sustainability

Chairperson:
Dr. Stéphane Vidry
ILSI Governance and Coordination
USA
Chairperson’s Biography

Dr. Stéphane Vidry joined ILSI Governance and Coordination in Washington D.C., USA as Director of Operations in June 2018. Prior to that, Stephane was Assistant Director for ILSI Europe where for 12 years, he managed several food safety-nutrition activities including coordination of a European Commission-funded project on Benefit Risk Analysis of Foods, ILSI Europe’s Scientific Advisory Committee and leading a group of 7 scientific project managers. Stephane also worked for the European Commission Joint Research Center, Lactalis, an International dairy company and taught at University. Dr. Vidry received his Ph.D. in Food Sciences-Nutrition from University of Sciences of Montpellier, France.
MYSaveFood - Agri-tech and Behavior Approaches for Tackling Food Loss and Reducing Waste for Sustainable Future

Biography

Dr. Ainu Husna MS Suhaimi heads the MYSaveFood Secretariat since 2016. The MYSaveFood Project is part of FAO’s SaveFood Program aimed to create awareness and build network to reduce food loss and waste in Malaysia. In 2019, she is also Deputy Director for Advanced and Reproductive Biotechnologies in Livestock Science Research Centre, under the Malaysian Agricultural Research and Development Institute (MARDI), to focus on improving Malaysian Livestock industry using molecular, reproductive and other advanced technologies. She started working with MARDI in 2000 as a Research Officer in the Animal Breeding Program, focusing on ways to utilize Molecular techniques in animal breeding. In 2013, she became the Deputy Director of International Networking Program, Corporate Communication and Quality Centre, where she built the program to allow MARDI and MARDI Scientists participate in partnerships for research collaborations, capacity building and representation. Dr. Ainu obtained her B.Sc. in Microbiology from University of Arizona, USA, M.Sc. in Molecular Biology from Universiti Putra Malaysia, and Ph.D. in Animal Biotechnology.

Abstract

Current global food production is facing major challenges. The demand of food from the growing global population is increasing exponentially, but reduced land availability, shortage of resources, and adverse climate change are having negative impacts on the production. Despite these difficulties, a colossal 1/3 of all food produced globally is actually lost and wasted across the food supply chain. Malaysians throw away 3000 tonnes of edible food each day, an amount that can feed 2.2 million people 3 times a day. It is mind-boggling how this can happen and if continued, we may not have enough food to sustain future population. A concerted approach by multi-stakeholders is needed to reduce food loss and waste in Malaysia. This include using agri-technologies, policy interventions and awareness programs. MARDI has embarked in developing postharvest management technologies and SOP for rice and other crops. In addition, packaging techniques and food technologies can also help in reducing food loss and waste. Realizing the need of working together, the MYSaveFood Initiative was initiated in 2016 as part of the global SAVEFOOD Network. Since its inception, efforts were made to build a network and create awareness on the detrimental effects of food loss and waste. To date, MYSaveFood has more than 150 partners and has done more than 100 awareness programs including at 50 schools educating more than 10,000 students.
The Role of AI and Innovative Technologies in Agri-Food - Transforming Food System and Enhancing Nutrition Security

Biography

Prof. Yandra Arkeman is a Professor in Agroindustrial Technology at Bogor Agricultural University (IPB), Indonesia. His expertise is in Artificial Intelligence (AI), Blockchain and Advanced Computing Technology. In May 2018, he established BRAIN (Blockchain, Robotics and Artificial Intelligence Networks) at IPB. He has published many research papers about the application of AI in agriculture, food, bioenergy and agroindustry in international journals. He is now also the Director of Surfactant and Bioenergy Research Center (SBRC) at IPB. He earned a Ph.D. in Manufacturing Systems Engineering with dissertation on Intelligent Manufacturing Systems using Genetic Algorithms from University of South Australia (2000). Then he conducted his first post-doctoral research at Department of Electrical Engineering and Computer Science, Kansai University, Osaka, Japan and second post-doctoral research at Department of Computer Science, George Mason University, Virginia, USA.

Abstract

Advanced digital technologies such as AI and blockchain are currently being used massively in various fields of life. One area that is very important for implementing AI, blockchain and other innovative technologies is food and nutrition security. This is to ensure adequate food and also to prevent malnutrition of the world population in general and Southeast Asia in particular.

In this presentation, the application of AI technology such as neural networks, deep learning, fuzzy inference systems and genetic algorithms for food contents prediction based on photos, non-destructive quality testing, food quality control systems and food damage diagnosis systems will be discussed. In addition, this presentation will share about blockchain application to improve food traceability system. This presentation will also discuss the use of AI and other innovative technologies to produce new agricultural products with high nutrients such as golden rice, protein-rich beef, nutrient-rich soybeans, pro-vitamin A-rich fish and omega-3-rich eggs to prevent stunting and ensure community nutrition security but is not harmful to humans and ecosystems.
Next Generation Sequencing for Food Safety -
Public Health Benefits and Food Industry Application

Biography

Dr. Lay Ching Chai is a Senior Lecturer from the Institute of Biological Sciences, Faculty of Science, University of Malaya, Malaysia. Her research focuses on food safety and microbiology. Dr. Chai serves as the Vice Chair of the Technical Working Group of Microbiology under the Food Analysis Committee (JKAM) chaired by the Department of Chemistry Malaysia, Ministry of Energy, Science and Technology, Energy and Climate Change. She has established great linkages with the industry and has been identified as the Key Opinion Leader in the field of food safety and microbiology. Her active contribution and involvement in food safety research has won her the Malaspina International Award by the International Life Science Institute (ILSI) in 2018.

Dr. Chai is now a Member of the scientific advisory panel of ILSI Southeast Asia Region that provides guidance and advice on the food safety and risk assessment in the region. She also serves as the Vice Chair of the Southeast Asia International Association of Food Protection. Dr. Chai was awarded the L’Oreal-UNESCO Women in Science Award in 2018 for her great passion and achievements in science. Also, due to her active contribution in promoting excellence in research in Malaysia, she has been appointed by the Academy of Sciences Malaysia as the Chairperson of the Young Scientists Network-Academy Sciences of Malaysia to lead scientific research development among the young scientists in the country. Dr. Chai received her Ph.D in Food Safety from Universiti Putra Malaysia in 2008.

Abstract

Advances in Next Generation Sequencing (NGS) technologies are pushing for a rapid change in microbial food diagnostic and is impacting on the global food trade. One of the major applications of NGS, whole genome sequencing (WGS), is being globally adopted and is replacing the golden molecular typing methods such as PFGE due to its relatively low cost, speed and sensitivity over the conventional molecular typing methods. WGS application was adopted for public health surveillance since 2011, in at least four countries: The United Kingdom, Denmark, France and The United States. On the other hand, NGS metagenomics and targeted metagenomics application in food processing have also allowed better understanding on how microbial population function and work in food processing, particularly in food fermentation. This presentation will show some examples of application of NGS in food processing, and discuss various challenges faced in pushing for NGS application by the food industry as well as in the less-developed countries.
Re-Shaping a Generation’s Food Behavior -
The ‘Disruptors’ of Food E-Commerce and How Best to Regulate

Biography

Dr. Kai Zhong is the Deputy Director of China Food Information Center (CFIC), and also a Standing Member of Chinese Preventive Medicine Association, health communication branch. Dr. Zhong is a well-known, productive science writer in food area, being very active in major media. He also serves different departments from central to local level and leading food companies as an independent consultant. Dr. Zhong was the former director of Risk Communication Division II in China National Center for Food Safety Risk Assessment (CFSA), responsible for media monitoring and response, science communication and risk perception research.

Abstract

With the blooming of food e-commerce in China, the behavior of consumers is also evolving rapidly, especially for millennial consumers. Online food business has expanded dramatically, not only for the pre-packaged food, but also the food delivery sectors.

Millions of take-out orders were delivered each day, and tons of imported lobsters and cherries were sold in minutes. Infant formula and health food have become the largest commodities during sales season. E-commerce helps people to consume more foods, but is it considered healthy?

The new business model brings a huge challenge to the regulators because the risk profile is different, and the risk is not easily traceable. The Chinese government has been putting in great efforts to impose laws and regulations to tackle this challenge, but has the effort paid off?
SESSION 3
Ideation & Innovation for Health & Sustainability
Science to Market

Chairperson:
Dr. Yen Ling Low
Abbott Nutrition R&D Center for Asia Pacific
Singapore
Chairperson’s Biography

Dr. Yen Ling Low is the Area Center Director of Abbott Nutrition Research & Development Center for Asia Pacific. She leads a multidisciplinary team of scientists, researchers and specialists to design and develop science-based nutrition innovations to help consumers live healthier lives. Dr. Low has many years of experience working in the field of food and nutrition, spanning government, academic and industry settings. Prior to Abbott, she held appointments at the Health Promotion Board under the Ministry of Health in Singapore and the Singapore Agency for Science, Technology and Research (A*STAR). She has published 36 papers in international peer-reviewed journals and is also currently an Adjunct Assistant Professor at the National University of Singapore. Dr. Low graduated with B.Sc. in Nutrition and Dietetics with First Class Honors from the University of Surrey, UK and completed her Ph.D. in Nutrition from the University of Cambridge, UK.
Precision Technologies & Blockchain for My Spinach

Biography

Mr. Daniel Wong is currently the Chief Technology Officer of CrowdFarmX (CFX), Singapore. He joined Netatech 10 years ago, learning all about water technology, and was soon combining his technical knowledge in full suite digital solution, SCADA and SAP, with water engineering. In 2014, Mr. Wong learnt about the plight of traditional small holder farmers who do not have access to technology, finance, and markets. He then channelled his expertise, and knowledge to building CFX, a platform that will bring small holder farms onboard, and improve their lives. Mr. Wong obtained a B.Sc. in Software Engineering from the University of Auckland, New Zealand.

Abstract

90% of the world's 570 million farms are smallholder farmers. By 2050, the world's food demand will be 160% of today's requirement and we have to meet this demand amidst climate change, increasing water scarcity and much fewer farmers.

Developments in AgriTech intended to cope with these challenges have not been adopted by smallholder farmers. In this presentation, you will find out why smallholder farmers are left behind and how CrowdFarmX leverages the power of precision technologies and Blockchain to help smallholder farmers feed the world.
Fermentation Technology for Nutrient Recovery from Soybean Residues

Biography

Dr. Jaslyn Lee is a Research fellow at Nanyang Technological University, Singapore in the School of Chemical and Biomedical Engineering. Her research expertise is on food waste valorization using fermentation technology, and extraction of valuable compounds using supercritical fluid extraction and twin screw extrusion technology. Some of her technological innovations from food waste include the development of a novel nutrient yeast media using the food waste, soy bean residue. Additionally, she has also developed a probiotic powder using a stabilizer from durian seed. She obtained her Ph.D. under the Interdisciplinary graduate scholarship from Nanyang Technological University and completed her Bachelors with honours from Monash University, Australia.

Abstract

Soybean residue, okara, is produced in surplus from the soybean industry, especially in Asia. It has a high protein content of up to 30%. In Japan alone, 800,000 tons of okara was disposed of annually from the production of tofu. Fermentation is a powerful and low-cost enzymatic technology which can be used to improve and also release nutrients. This presentation will be a case study on how fermentation technology could enable nutrient recovery from the food waste, okara.
**Biography**

Dr. Dunyaporn Trachootham is Assistant Professor at Institute of Nutrition, Mahidol University, Thailand. She is also currently the Secretary of the Curriculum Committee for Master Program in Toxicology and Nutrition for Food Safety. Dr. Trachootham’s research focuses on safety and efficacy of functional food for elderly population. Her research contribution has earned her an Award of Outstanding Nutrition Research from Thailand Congress of Nutrition. Furthermore, she serves as an assessor for Thai Food and Drug Administration (FDA) to evaluate the safety of dietary supplements, novel food and genetic-modified plants and the scientific integrity of health claims. Recently, she received the 2019 ILSI Malaspina International Scholars Travel Award (MIST) award. Dr. Trachootham obtained a Ph.D. in Biomedical Sciences (Pharmacology) at University of Texas Health Sciences Center at Houston, USA and a B.Sc. in Dentistry at Mahidol University, Thailand. She completed her postdoctoral fellowship in Cancer Biology from MD Anderson Cancer Center, Texas, USA, and received a graduation certificate in Nutritional Sciences for Health Professionals from Tuft University, USA. She also received training for safety assessment of genetically modified (GM) food from National Center for Genetic Engineering and Biotechnology, and novel food from Thailand Risk Assessment Center.

**Abstract**

Several countries in South East Asia are in aging society and moving toward aged society in the near future. Concomitantly, the incidence of non-communicable diseases (NCDs) is growing exponentially. Therefore, research and development of functional food suitable for elderly population is extremely critical. The major challenge of such task includes how to balance the combination of optimum texture, nutrient composition, functionality and sensory perception. A multi-disciplinary team is required to perform research and development of functional food.

In this talk, I will provide an example of interdisciplinary research for the development of Nutri-jelly and Nutri-PEITC jelly. Over thirty scientists from universities, private companies and public sectors joined our research team and overcame the challenges together. Bridging information from food sciences, nutrition, toxicology, pharmacology and clinical sciences is the key to the success of these products. This talk is devoted to His Majesty the King Bhumipol (King Rama IX), who is our center of inspiration in this multidisciplinary team. A suggestion to meet the needs of future smart-eating concept would be to make “standardized” diet available for general people; and “personalized” diet available for people with special needs.

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**Innovation for Aging Population**

A Multi-Discipline Approach for Innovative Functional Food
Science Symposium on Smart Eating – Harnessing Innovative Approaches and New Technologies for Health and Sustainability, April 23, 2019, Kuala Lumpur, Malaysia

Innovation for Aging Population

Disruptive Food Innovation Challenges - Creating Safer and Personalized Puree Meals with 3D Food Printing

Biography

Ms. Gladys Wong is currently the Senior Principal Dietitian at Khoo Teck Puat Hospital (KTPH), Singapore. She relinquished her 17-year headship of Nutrition & Dietetics Department at KTPH at the end of 2017 to concentrate on dietetic placement education, community and geriatric dietetics, and special projects pertaining to health promotion and sustainability. Ms. Wong is a New Zealand (NZ) Registered Dietitian and Accredited Dietitian of Singapore Nutrition & Dietetics Association (SNDA). She trained and worked as a Dietitian in NZ before relocating to Singapore in 1995 to pioneer the nutrition diploma course at Temasek Polytechnic. She then returned to clinical/foodservice dietetics in 2000. Ms. Wong is a Member of SNDA since 1985 and served as President, Treasurer, Membership Sub-Chair for numerous terms. She is an affiliated member of Foodservice Consultants Society International. She was also Chair of Dietetics Panel with Ministry of Health, Singapore and is currently a Member of National Diabetes Prevention & Care Task Force. Ms. Wong is a prolific speaker who has delivered countless professional public talks and workshops relating to a wide variety of nutrition-related topics. Her latest project is towards developing a commercially viable food supply model using 3D food printing to produce consistent, nutritious and personalised puree meals for patients with swallowing difficulties. Ms. Wong was awarded B.Sc. (Hons) and M.Sc. (Human Nutrition) from University of Otago, NZ.

Abstract

The silver generation is living longer in sickness and in health. WHO and respective countries have various strategies and action plans on how to tackle this aging issue, such as fall prevention, nursing home care, and nutritional assessments to identify the malnourished. In parallel, dietitians and food industries are also finding ways to feed a subset of this population with chewing and swallowing difficulties. Such fortified foods of various safe consistency are often unpalatable or visually unappealing, otherwise, manpower intensive to do otherwise.

This poses challenges on how to implement mass production of consistent-textured puree foods for people with dysphagia. Exploiting technology, 3D food printing could be a commercially viable solution. This can be a disruptive food innovation to creating consistently safer and personalized puree meals for our elderly population with dignified care. Other challenges will include involving numerous stakeholders such as the food technologists, engineers, transportation, packaging, rethermalizing technology, etc. to manufacture palatable and printable food inks with stable and safe shelf life, etc.

This presentation will present the global challenges that dietitians in clinical practice, food service and community may face when managing the patient with dysphagia, from assessment to production to the mouth; explain about the status of 3D Food printing overseas and in Asia, and how 3D food printing may be the food service of the future for the aging population.
Panel Discussion

Chairperson:
Dr. E-Siong Tee
ILSI SEA Region
Malaysia
Chairperson’s Biography

Dr. E Siong Tee is a Member of the Board of Directors of ILSI SEA Region since 1996 and Coordinator for ILSI SEA Region Malaysia Country Committee since 2005. He is currently a Nutrition Consultant for TES SEA Region NutriHealth Strategic Consultancy. Dr. Tee was Head of the Cardiovascular, Diabetes and Nutrition Research Centre of the Institute for Medical Research (IMR) in Kuala Lumpur, Malaysia, until his retirement in February 2002, after serving for 30 years. He was Nutrition Advisor to the Food Safety and Quality Division of the Ministry of Health Malaysia from 2002-2011. In that capacity, Dr. Tee was Chairperson or member of several technical committees related to food regulations and Codex Alimentarius. He is still a member of the National Advisory Committee on Food Regulations and several Codex sub-committees. Dr. Tee is also President of the Nutrition Society of Malaysia (NSM) since 1996. In this capacity, he has led the implementation of various community nutrition promotion programs which included the publication of various education booklets and press articles. He is also Chair of the National Steering Committee for Nutrition Month Malaysia since 2002. He represents NSM in several Technical Working Groups in the Ministry of Health Malaysia, including the National Coordinating Committee for Food and Nutrition (NCCFN) and the Technical Working Group for Nutritional Guidelines. He initiated the formation of the Southeast Asia Public Health Nutrition (SEA-PHN) Network and is the current Chairman for the 2nd Council of the Network from 2017 to 2020.

Panelists’ Biographies

Prof. Lynne Cobiac is the Science Director and Deputy Director of CSIRO’s Health and Biosecurity business unit. This unit brings together a diverse team of approximately 300 scientists and technical specialists in health and biosecurity from across CSIRO and develops key partnerships and collaborations to create health and wellbeing benefits for Australians. In this role, Lynne works closely with the Director and the Leadership Team to develop and implement the strategy and the science vision for the business unit with a particular focus on human health, implementing a business unit-wide capability development strategy and developing an innovation culture across the business unit. Prof. Cobiac established the Precision Health Future Science Platform ($25M) between CSIRO and research and delivery partners, including Singapore-based partnerships. She has 30 years of experience and leadership in research and management in the nutrition and preventative health domains within both research organisation and university environments. Prof. Cobiac is a Member of whole-of-CSIRO’s Science Council, CSIRO’s Science and Gender Equity (SAGE) initiative and a member of the SAGE Self-Assessment Team providing leadership across the organisation and championing diversity and inclusion.
Ms. Norrani Eksan is currently the Deputy Director in the Food Safety and Quality Division, Ministry of Health, Malaysia. She joined the Ministry of Health in 1990 and has been working extensively in the area of food safety for the past 28 years. She has contributed significantly to the development and advancement of food safety programs and food standards nationally, regionally and internationally. Ms. Norrani is also the Chairman for the Expert Committee on Food Labeling for Food Regulations as well as Nutrition, Health Claim and Advertisement Food for Specified Health Uses where she is involved in the development, review, and harmonization of the national food standard with Codex standard. In addition, she participates in the planning, drafting and implementation of the Nutrition Labeling and Claims Regulations.

Prior to her current role at the Ministry of Health, she is the Chairman for the National Codex Committee on Food Labeling and Food for Specified Health Uses. She also serves as a Member of the Technical Secretariat for the Codex Committee on Fats and Oils. At the regional level, she is the Vice-chairman of Scientific Committee for the ASEAN Risk Assessment Centre for Food Safety (ARAC) on Risk Assessment from 2016 to 2018. She has contributed in meetings of Codex Committee for Asia (CCAsia) and ASEAN Task Force on Codex (ATFC) and served as the Lead Expert which led to the development of the ASEAN Common Principles and Requirement for the Labeling of Pre-packaged Food. In addition, Ms. Norrani is the Team Leader for the ASEAN case study on Chloropropanol Chemical Risk Assessment under the Australia-ASEAN project in 2006.

Prof. Aman Wirakartakusumah is an Emeritus Professor of Food Science and Technology at Bogor Agricultural University (IPB), Indonesia. He is also the Scientific Director of ILSI SEA Region and has served in this role for more than 10 years. Prof. Wirakartakusumah is the Chairman of the Engineering Commission of the Indonesian Academy of Sciences, the Advisory Council to the Indonesian Association of Food Technologists, and the Indonesian Food and Nutrition Society. In 2018, he has been elected as the President Elect of the International Academy of Food Science and Technology of the International Union of Food Science and Technology and in 2019, he has been appointed as the Executive Director of IPMI International Business School in Jakarta, Indonesia. His interest and involvement in research and education is reflected in his distinguished career at IPB University, where he served as Rector from 1998 to 2002, and held positions as Head of Department, Dean of Faculty and Director of Research Center. Prof. Wirakartakusumah was also the Indonesia Ambassador to the United Nations Educational, Scientific and Cultural Organization (UNESCO) based in Paris, France from 2004 to 2008. In 2003, Prof. Wirakartakusumah was elected as a Fellow of the International Academy of Food Science and Technology, the International Union of Food Science and Technology. He obtained his M.Sc. and Ph.D. in Food Science from the University of Wisconsin-Madison, USA in 1977 and 1981, respectively.
Mrs. Megawati Suzari is the Director of New Product Development, Scientific Regulatory Affairs at Fonterra Brands (M) Sdn. Bhd., Malaysia. She has more than 20 years of working experiences in food industry with well-known multinational companies. She leads the new product development for Malaysia and Asia countries in her current role. Her extensive experiences in dairy innovation and product development of specialised nutrition products, provides her good insight into food trends and has strong technical capability in different processing technologies. Mrs. Megawati is also strong in stakeholder strategy management and incidence response communication. She graduated from the University of Wollongong, Australia and received Honorary M.Sc. from University Putra Malaysia.