



## Workshop Summary:

### 13<sup>th</sup> e-ASIA Joint Research Program (the e-ASIA JRP)

#### Research Cooperation in the overarching field of 'Food & Health'

#### Subtopic: 'Personalized Nutrition' and 'Functional and Future Foods'

Food & Health Call

"Personalized Food & Nutrition for Health Benefits"

Personalized Nutrition

Personalized Food

Medicinal Food

Food for special population

- Nutrition for patients with Non-Communicable Diseases (NCDs)
- Metabolic Syndrome, Macro-nutrient deficiency, stunting, obesity, and their complications
- Tailoring nutrition toward specific age group or lifestyle (silver, teen, active, creative)

**Topic to Consider**

1. Nutrigenomics, Nutragenomics, Metagenomics, Metabolomics, Nutrigenetics and Nutrition Multi-omics
2. Identification of targets for the development of diagnostics and therapeutics, catering to the populations of each participating country
3. Utilization and integration of diverse platforms, including genomics, transcriptomics, proteomics, metabolomics, and cutting-edge tools such as bioinformatics, artificial intelligence, and computational pipelines
4. Multifaceted approach for comprehensive insights into nutrition-related diseases and conditions, achieving higher levels of resolution and translating into practical tools for preemptive lifestyle interventions, improved disease diagnosis and prognosis, predictions of treatment responses
5. Combined approaches aim to provide a comprehensive panorama of specific human conditions, whether related to diseases or states of health
6. Policy, regulatory, ethics research and implementation mechanism on personalized nutrition aspect

Functional & Future Foods

- Food beyond basic nutrition
- Food for Longevity (Healthy aging)
- Substitutability
- Food toward Healthier Product
- Process & Eco-system

**Topic to Consider**

1. Functional foods and functional ingredients derived from grains
2. Functional foods and functional ingredients derived from aquatic/sea products such as microalgae species found in local water regions
3. Functional Food derived from Enzymatic pathway
4. Future Food research in food innovation: Alternative Protein, progenitor cell tech, lab bioreactor, 3D bioprinting
5. Novel food processing technology: maintaining quality, minimal process, sustainable, resilience system
6. Innovation on Research for Indigenous Food as functional and future foods for a larger and emerging market
7. Functional and Future Food Market
8. Food safety and Security for Functional and Future Foods
9. Policy, regulatory, ethics research and implementation mechanism on functional and future foods

## Organizing MOs & Funding Subtopic:

Participating Member Organizations	Personalized Nutrition	Functional & Future Foods	Funding Modality
Australia: National health and Medical Research Council (NHMRC)	✓		New
Cambodia: Ministry of Industry, Science, Technology and Innovation (MISTI)		✓	In-kind
Indonesia: National Research and Innovation Agency (BRIN)	✓	✓	New, In-kind
Lao PDR: Ministry of Health (MOH)	✓	✓	In-kind
Myanmar: Ministry of Science and Technology (MOST)	✓	✓	In-kind
Philippines: Department of Science and Technology (DOST- PCHRD)	✓	✓	New
Thailand: Program Management Unit for Human Resources & Institutional Development, Research, and Innovation (PMU-B)	✓	✓	New

Food and Health Speakers	Summary
<b>Welcome Remark</b> <b>Professor Dr. Sompong Klaynongsruang</b> Director of PMU-B	Welcome all researchers to work together toward an impactful collaborative project on Food & Health.
<b>Introduction of the Research Field in Food &amp; Health Call</b> By PMU-B	The focused topic is on Personalized Nutrition/ Functional & Future Food
<b>Assoc. Prof. Sakda Khoomrung</b> Instructor/Researcher, Faculty of Medicine Siriraj Hospital, Mahidol University <b>“Scratching the surface of Personalized Nutrition in Thailand”</b> Sakda.kho@mahidol.edu	Topic: Personalized nutrition (PN) in Thailand – research and information landscape  Collaboration need: Technology, standard protocol and high-quality data
<b>Dr. Bo Bo</b> Director, Naypyitaw Tech University, Myanmar <b>“Traditional Myanmar Foods with Potential Functional Values Emphasis on Laphet: Fermented Tea Leaves”</b>	Topic: Facility available and research about Laphet (tea), Myanmar traditional food – information, Microbial community in fermentation of Laphet and effect  Collaboration need: improved processing of traditional food, storage and post processing, functional properties
<b>Dr. Kulthida Vaeteewoottacharn</b> Lecturer, Khon Kaen University, Thailand <b>“In vitro cattle stem cell cultivation to serve the generation of a cell-based cultured meat.”</b> kulthidava@kku.ac.th	Topic: Cultured meat research – how to work on Cultured meat  Collaboration need: technology, scaffolding and multi-cellular culture system, modify nutrition content, health, flavor, texture
<b>Professor Pisit Tangkijvanich, M.D.</b> Head of Center of Excellence in Hepatitis and Liver Cancer, Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand <b>“Modifying Gut Microbiome by Synbiotics toward Personalized Medicine for Non-alcoholic Fatty Liver Disease and Chronic Kidney Disease”</b>	Topic: Gut microbiome for personalized medicine for NAFLD and CKD research
<b>Asst. Prof. Dr. Jutarop Phetcharaburanin</b> Principle investigator, Department of Systems Biosciences and Computational Medicine, Faculty of Medicine, and Khon Kaen University Phenome Centre, Khon Kaen University <b>“Metabolic and microbial high throughput phenomics in obese patients with different comorbidities for personalizing nutritional programs at pre- and post-bariatric surgery.”</b>	Topic: Metabolic and Microbial High-throughput Phenomics in Obese Patients with Different Comorbidities for Personalizing High-protein Diets  Collaboration need: collaborators, obese patients operatic surgery to conduct the multi-site collection and study
<b>Dr. Jacus Nacis</b> DOST-Food and Nutrition Research Institute, the Philippines <b>“Linkage and equilibrium: Initiatives and opportunities in omics for nutrition R&amp;D in the Philippines”</b>	- Topic: Initiatives and opportunities in omics for nutrition R&D in the philippines - Collaboration need: omics information to facilitate validation studies, multi-omics integration and data science, development of omics interventions
Research Sharing	Summary
Group Discussion on future collaboration	- Dr. Anna Agustina: proposal for strategy

	<p>communication and actions for spirulina consumption through community movement in preventing stunting program in Indonesia. You may also contact me Anna at +62817130519 (WhatsApp/Wechat) and/or email <a href="mailto:annaagustina@univpancasila.ac.id">annaagustina@univpancasila.ac.id</a>.</p> <ul style="list-style-type: none"> <li>- Sri Vidawati: proposal about Smart hybrid nanopores for combined multistage drug-cell bioimaging, tracking, home and therapy (<a href="mailto:sri.vidawati@istn.ac.id">sri.vidawati@istn.ac.id</a>)</li> <li>- Yusi Luluk Rahmania – Hyptolide</li> <li>- Megan Crichton – nutrient intake and nutrition impact symptom during cancer treatment</li> <li>- Jyotsna Batra – medicinal food – test cancer phenotype – specific indigenous food product that can be used as treatment option for cancer/genomics/proteomics/AI</li> <li>- Dr. Reza Yuridian Purwoko: We have the proposal for Infectious Diseases of HIV and Dengue using cell therapy and Future Diet Food using Stemcell tissue engineering, Kindly contact us, Indonesia, dr. Reza +6281333101115 (WhatsApp) and email <a href="mailto:drrezayp@yahoo.com">drrezayp@yahoo.com</a>/ <a href="mailto:reza011@brin.go.id">reza011@brin.go.id</a>.</li> <li>- Dr. Wei Guo: Lab of field phenomics, University of Tokyo, Japan. we are proposing smart agricultural technology for Asian countries, here is our lab page: <a href="https://lab.fieldphenomics.com/">https://lab.fieldphenomics.com/</a> please also feel free to contacting me or @James Burrige here: <a href="mailto:guowei@g.ecc.u-tokyo.ac.jp">guowei@g.ecc.u-tokyo.ac.jp</a> &amp; <a href="mailto:burrige-j@g.ecc.u-tokyo.ac.jp">burrige-j@g.ecc.u-tokyo.ac.jp</a></li> </ul>
<b>Discussion &amp; Suggestions</b>	<b>Summary</b>
	<ul style="list-style-type: none"> <li>- Information Portal is needed to provide information such as expertise, interested, contact, link, research interests that everyone search and find collaboration</li> </ul>