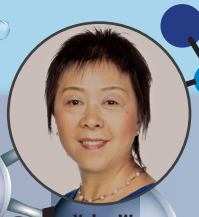
23 SEP 2021 (THU)
3 – 4.30PM (GMT +8)
Register here!
https://bit.ly/3z4uC94


Shruti Pavagadhi


Yulan Wang


Ching Jianhong


Qiao Yuan


Guan Xue Li

Metabolomics: Impacts on Health & Environment

This webinar brings together SNBC members who are academic experts in metabolomics from Nanyang Technological University (NTU) and National University of Singapore (NUS) to share their knowledge on how metabolomics impact human health and environment.

Who should attend:

- Academic and industry members interested in the latest metabolomics techniques
- Delegates keen to grasp the importance of metabolomics applications to human and environmental health

Moderator: Dr Shruti Pavagadhi (Visiting Scientist, SCELSE-NUS)
Title: Application of environmental metabolomics
Affiliation: SCELSE-NUS, NUS Environmental Research Institute (NERI)

Shruti Pavagadhi is a Senior Manager at NUS Environmental Research Institute (NERI). She has more than 10 years of experience in analytical chemistry, metabolomics and its applications in diverse environmental systems. She is currently associated with a number of environmental and agricultural ecosystem and sustainability projects where the research team utilizes multi-omics approaches including metabolomics to integrate systems level data and obtain biological insights. In this webinar, Dr. Shruti will share applications of metabolomics in different environmental systems and future outlook and scope for metabolomics in the field of environmental sciences.

Speaker 1: Prof Wang Yulan
Title: An integrative approach to metabolomics
Affiliation: LKCMedicine and SPC, NTU

Wang Yulan is a professor of Metabolomics at Lee Kong Chian School of Medicine (LKCMedicine) and the director of the Singapore Phenome Centre (SPC) in NTU. Prof Wang has over 20 years of experience in metabolomics research, with a focus on the development of metabolomics techniques, including NMR and MS-based techniques.

She has applied these techniques to drug toxicity, infectious diseases, cancer, neurodegenerative and gastrointestinal tract disease. She will present an integrative metabolomics approach to study the response of heat stress in the bacterium *Escherichia coli*.

Speaker 2: A/Prof Ching Jianhong
Title: Analytical methods for probing gut microbiome-host metabolomics
Affiliation: Cardiovascular and Metabolic Disorders Programme, Duke-NUS Medical School

Ching Jianhong is an assistant professor at the Duke-NUS Medical School and the co-director of the Duke-NUS Metabolomics Facility. With more than 10 years of experience in metabolomics analysis, he is also a joint scientist at the KK Women's and Children's Hospital and sits on the advisory board of AMILI PTE LTD, Southeast Asia's only precision gut microbiome company specialising in gut microbiome innovation and therapy.

He will present his work done in collaboration with AMILI, in which he developed a targeted metabolomics screening method for stool samples, using GC-MS- and LC-MS-based assays for short chain fatty acids (SCFA) and nitrogen containing compounds; and how the integrity of the samples can be preserved through optimising logistical procedures and analytical methods.

Speaker 3: A/Prof Qiao Yuan
Title: Oral intake of beta-lactam perturbs the gut microbiota peptidoglycomics profile
Affiliation: SPMS, NTU

Qiao Yuan completed her PhD at Harvard University and was a postdoctoral fellow at IMCB, A*STAR since 2017. She joined NTU in 2019 as an assistant professor in the Chemistry and Chemical Biology Division at the School of Physical and Mathematical Sciences (SPMS) in NTU. Her talk will shed light on the effect of the oral intake of beta-lactam drugs (e.g. antibiotics) in the gut bacteria and how this leads to the creation of a 'peptidoglycan storm' in the host gut environment, and subsequent rise of invasive fungal dissemination and infection. In addition, characterization of specific subtypes of peptidoglycan fragments using LC-HRMS will also be covered.

Speaker 4: A/Prof Guan Xue Li
Title: Precision measurements to probe lipid remodeling in antimicrobial resistance and biofilm formation
Affiliation: LKCMedicine, NTU

Dr Guan obtained her PhD from NUS in 2009 and completed her postdoctoral training at LipidX, Switzerland. She became the Group Leader of Lipidomics and Systems Biology at the Swiss Tropical and Public Health Institute (Swiss TPH) in 2011 and joined LKC Medicine, NTU as a Nanyang Assistant Professor in 2016. Her lab drives development and application of lipidomics tools to eludicate the impact of alterations of host and microbial metabolism on the outcome of diseases and treatment response. Dr Guan will demonstrate how advancements in microbial lipidomics analysis renew our knowledge on lipid remodeling in antimicrobial resistance and biofilm formation, allowing for the development of therapeutic targets.

Q&A and networking opportunities will follow the presentations.

An event by: Singapore National BIOFILM Consortium