

NUS YONG LOO LIN SCHOOL OF MEDICINE

SHANGHAI JIAO TONG UNIVERSITY SCHOOL OF MEDICINE

UNIVERSITY OF MANCHESTER FACULTY OF BIOLOGY, MEDICINE AND HEALTH

JOINT SYMPOSIUM

HEALTHY LONGEVITY • PRECISION MEDICINE
CANCER • PANDEMIC PREPAREDNESS

October 19th and 20th, 2026

Bridge+ at Geneo

1A Science Park Drive, Singapore 119314

Programme Booklet

Co-organised by:



Yong Loo Lin
School of Medicine



上海交通大学医学院
SHANGHAI JIAO TONG UNIVERSITY SCHOOL OF MEDICINE





October 19th and 20th, 2026

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WELCOME MESSAGE

by Prof. Chong Yap Seng

Dear Colleagues, Partners, and Friends,

It is my great pleasure to welcome you to the inaugural NUS Medicine-China Academic Partnership Week 2026 – five days of scientific exchange, strategic dialogue, and celebration of the next generation of biomedical talent.

Science is the irrefutable bedrock of health and human progress. When science is given room to flourish, innovation becomes a lived reality; when societies anchor their decisions in evidence, lives are saved. In our own lifetime, we have seen how scientific rigour, coupled with ungrudging collaboration and urgent purpose, changed the course of a global crisis. That experience also taught us, with unmistakable clarity, that health of communities thousands of kilometres away is inseparable from the health of our own – we cannot improve the health of our nation, or of populations around the world, by working in isolation.

This gathering is a testament to the deepening bonds between NUS Yong Loo Lin School of Medicine and our esteemed partners at Shanghai Jiao Tong University School of Medicine, Zhejiang University School of Medicine and the University of Manchester – relationships built on shared curiosity, mutual respect, and a common mission to advance human health. Together, we recognise that global health challenges that transcend borders and disciplines demand a multinational and multidisciplinary response grounded, above all, in evidence.

Across three flagship events, our symposia convene leading minds across mutual areas of interest including Healthy Longevity, Precision Medicine, Cancer, Pandemic Preparedness, CAR-T, AI Medicine, Infectious Disease, Cardiovascular Diseases, and Women's Health, while inviting us to understand these themes through the lens of Asian contexts. Our Partnership Summit, in turn, looks to the future and explores how we can work together to translate science into service for good.

Over these five days, may we debate rigorously, listen generously, and collaborate freely. I am certain that this week of conversations will yield real impact and innovation and bring us closer to the healthier future we will build by standing with science, and by standing together.

Welcome to Singapore. I look forward to inspiring health for all, together with all of you.

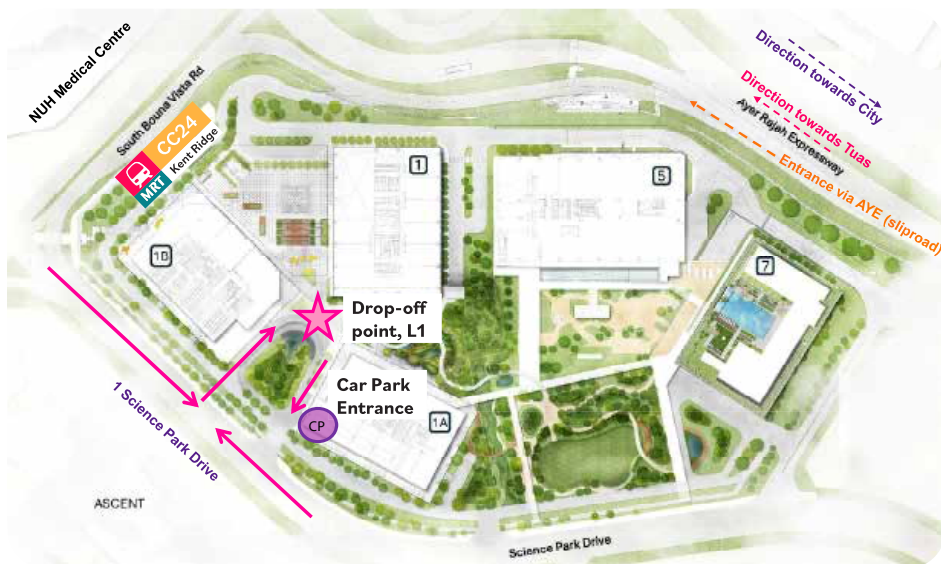
Warm regards,

Chong Yap Seng

Lien Ying Chow Professor in Medicine
Dean, Yong Loo Lin School of Medicine, National University of Singapore



EVENT VENUE



BY CAR (DROP-OFF POINT)

Upon dropping off, (facing the fountain) turn right. You will see Building 1A, head inside and Bridge+ Geneo is located inside at Level 1.



EVENT VENUE



BY CAR (DRIVE)

Upon turning into Science Park Drive, go one loop around the driveway and turn into the carpark on the left.

From the Carpark Lift with Swensens is on your right upon exiting, turn left. Further down you will be able to see building 1A.

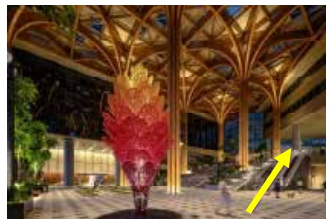


EVENT VENUE



BY KENT RIDGE MRT CC24

From Kent Ridge MRT, please take Exit B. Walk via the underpass and take the escalator to Level 1 (Swensen's on the left). You will see Building 1A ahead. Bridge+ Geneo is located inside at Level 1



EVENT VENUE



BY BUS

1A Science Park Dr 15151

Direct Services: 92, 92A (Loop from Buona Vista MRT).

Nearby (Buona Vista Flyover): 14, 33, 97, 166, 197, 963, 963e.

EVENT FLOOR PLAN



CONFERENCE PROGRAMME

NUS Yong Loo Lin School of Medicine – Shanghai Jiao Tong University School of Medicine – University of Manchester Faculty of Biology, Medicine and Health Joint Symposium

Day 1 – 19th October 2026, Monday

9:00 – 9:30 Registration

Session Chair: Prof Rickie Patani (NUS)

- 9:30 – 9:45 Opening Address by **Professor Roger Foo**, Vice Dean (Research), NUS Yong Loo Lin School of Medicine
- 9:45 – 10:00 Opening Address by **Professor Zheng Junke**, Vice Chancellor, Shanghai Jiao Tong University
- 10:00 – 10:10 Bio-Medical Engineering Insights – “Multi-modal Thermal Therapy (MTT) for Solid Tumor: An Innovative Interventional Immunomodulatory Technology” by **Professor Lisa Xuemin Xu**, Associate Director, University Council of Shanghai Jiao Tong University

Session Chair: Prof Ningning Liu (SJTU)

- 10:10 – 11:10 Conference Theme – Healthy Longevity (20 mins per talk)
- Distinguished Prof Brian Kennedy (NUS) – “Combining Interventions with Biomarkers in Longevity”
 - A/Prof Saji Kumar Sreedharan (NUS) – “Targeting CCR5 to Restore Memory in Alzheimer’s Disease”
 - Prof Giuseppe D’Agostino (UoM) – “Brain Circuits Controlling Energy Metabolism: Novel Insights Beyond Appetite Regulation”
- 11:10 – 11:40 Tea Break

CONFERENCE PROGRAMME

NUS Yong Loo Lin School of Medicine – Shanghai Jiao Tong University School of Medicine – University of Manchester Faculty of Biology, Medicine and Health Joint Symposium

Day 1 – 19th October 2026, Monday

Session Chair: Dr Wang Weilan (NUS)

- 11:40 – 12:40 Conference Theme – Healthy Longevity (20 mins per talk)
- A/Prof Jan Gruber (NUS) – *“Title to be confirmed”*
 - Prof Yixin Wang (SJTU) – *“A Lifespan Perspective of Human Reproduction”*
 - Dr Caiyue Liu (SJTU) – *“Repetitive Exposure of Hyperbaric Oxygen Drives Systemic Senolysis to Alleviate Aging in Preclinical Models and Humans”*

12:40 – 14:30 Lunch

Session Chair: Prof Giuseppe D'Agostino (UoM)

- 14:30 – 15:30 Conference Theme – Precision Medicine (20 mins per talk)
- Prof Rickie Patani (NUS) – *“The Rise of Retained Introns in Neurodegeneration”*
 - Asst. Prof Liu Boxiang (NUS) – *“Single-cell and Spatial Methods to Understand Complex Diseases”*
 - Prof Lin Zou (SJTU) – *“Progress on Abnormal Mitochondrial Metabolism Reprogramming in Malignant Tumors”*

15:30 – 16:00 Tea Break

CONFERENCE PROGRAMME

NUS Yong Loo Lin School of Medicine – Shanghai Jiao Tong University School of Medicine – University of Manchester Faculty of Biology, Medicine and Health Joint Symposium

Day 1 – 19th October 2026, Monday

Session Chair: A/Prof Polly Chen (NUS)

- 16:00 – 17:00** Conference Theme – Precision Medicine (20 mins per talk)
- A/Prof Ng Kar Hui (NUS) – *“Bringing Genomic and Precision Medicine Insights into Clinical Decision-making”*
 - Asst. Prof Kokouvi Kassegne (SJTU) – *“Precision at the Host-Pathogen Interface: Epitope-Based Vaccine and Serosurveillance for Malaria Elimination”*
 - Dr Meghna Jani (UoM) – *“From Population Health to Individual Risk: Harnessing Digital Data to Improve Opioid Safety Towards Precision Medicine”*
- 17:00 – 17:30** Summary & Closing Address by **Professor Roger Foo**, Vice Dean (Research), NUS Yong Loo Lin School of Medicine

CONFERENCE PROGRAMME

NUS Yong Loo Lin School of Medicine – Shanghai Jiao Tong University School of Medicine – University of Manchester Faculty of Biology, Medicine and Health Joint Symposium

Day 2 – 20th October 2026, Tuesday

9:00 – 9:30 Registration

Session Chair: Dr Caiyue Liu (SJTU)

9:30 – 11:10 Conference Theme – Cancer (20 mins per talk)

- Prof Chen-Ying Liu (SJTU) – *“Multi-Omics Profiling Reveals Immune Remodeling and Immuno-Response Molecular Subtype for Neoadjuvant Chemotherapy Plus PD1 Blockade in pMMR Rectal Cancer”*
- A/Prof Polly Chen (NUS) – *“From Sensing to Silence – dsRNA Pathways and Their Role in Immune Evasion”*
- Prof Angeliki Malliri (UoM) – *“Targeting KRAS-mutant Non-Small Cell Lung Cancer and Small Cell Lung Cancer”*
- Dr Bernice Oh (NUS) – *“Targeting CD7 in Acute Leukemias”*
- Prof Ningning Liu (SJTU) – *“The Fungus Lurking Inside Tumor”*

11:10 – 11:30 Tea Break

CONFERENCE PROGRAMME

NUS Yong Loo Lin School of Medicine – Shanghai Jiao Tong University School of Medicine – University of Manchester Faculty of Biology, Medicine and Health Joint Symposium

Day 2 – 20th October 2026, Tuesday

Session Chair: Dr Meghna Jani (UoM)

- 11:30 – 13:10** **Conference – Pandemic Preparedness (20 mins per talk)**
- **Prof Sylvie Alonso (NUS)** – *“Development of a Powerful Dendritic Cell-Targeting Vaccine Delivery Platform for Pandemic Response”*
 - **Asst. Prof Tan Chee Wah (NUS)** – *“Decoding Immunity at Scale: High-Throughput Serology for Surveillance, Vaccines, and Antibody Discovery”*
 - **A/Prof Yun Hu (SJTU)** – *“Integrating Nursing Workforce and Work Environment to Enhance Health System Resilience for Pandemics: A Multicenter Cross-sectional Study”*
 - **Prof Qingying Ji (SJTU)** – *“Response Strategies and Policy Recommendations for Medical Social Work Engagement in Public Health Emergencies”*
 - **Prof Ian Hall (UoM)** – *“The Impact of Pandemics on (Semi-) Enclosed Institutions and What Makes Them Vulnerable”*
- 13:10 – 13:30** **Closing Address & Phototaking by Session Chair**
- 13:30 – 14:30** **Lunch**
- 14:30 – 15:30** **Leader’s Discussion/Meeting**

OPENING & CLOSING ADDRESS

Roger Foo

- Zayed bin Sultan Al Nahyan Professor in Medicine, NUS Yong Loo Lin School of Medicine
- Group Director Research, Research & Innovation Office, NUHS
- Vice-Dean (Research), NUS Yong Loo Lin School of Medicine
- Advisor, NUHS Clinician Scientist Academy
- Senior Consultant, NUHCS

National University of Singapore
Dean's Office, Medicine



Prof Roger Foo is a graduate of the NUS Yong Loo Lin School of Medicine (Class of 1992). After completing national service, he spent 20 years overseas, receiving specialist training at King's College Hospital, London, and Addenbrooke's Hospital, University of Cambridge, before returning to Singapore in 2013. In 2003, he was awarded the prestigious Wellcome Trust Fellowship for postdoctoral research at the Albert Einstein College of Medicine in New York. He later returned to Cambridge as a British Heart Foundation Fellow and Consultant Physician. His laboratory achieved international recognition in 2012 for publishing the first epigenomic map of the failing human heart. Today, the Foo Lab is at the forefront of cardiovascular research, advancing knowledge of heart disease through studies in epigenetics, gene regulation, cardiac chromatin architecture, and cardiomyocyte cell states. The team employs cutting-edge technologies, including single-cell transcriptomics, CRISPR gene editing, and induced pluripotent stem cells. Prof Foo is also committed to translating research into clinical impact. He pioneered the use of next-generation sequencing in cardiac care at the National University Hospital and has established extensive collaborations with academic and biopharmaceutical partners worldwide. He also serves as Adjunct Research Director at A*STAR's Institute of Molecular and Cell Biology and mentors emerging clinician-scientists nationally.

OPENING ADDRESS

Zheng Junke

- Vice Chancellor of Shanghai Jiao Tong University School of Medicine
- Deputy Director of the Key Laboratory of Cellular Senescence and Death

Shanghai Jiao Tong University
School of Medicine

Prof. Zheng Junke has long been engaged in conducting research in hematopoietic stem cells, leukemia stem cell metabolism, and immunotherapy of Leukemia. He uncovered key roles of glucometabolic and amino acid metabolic and immunosuppressive receptor-mediated signaling in blood stem cell fate determination, providing multiple and potential metabolic and immunological targets for leukemia therapy. He has published over 15 articles in prestigious magazines, such as Nature, Cell Metabolism, JCI, Blood, Sci Adv, and Leukemia, as the corresponding and co-corresponding author. By now, he has published 50 articles in total. He has applied for multiple domestic and overseas patents, as well as participated in compiling monographs. He has held the Key Program and the General Program of the National Natural Science Foundation of China, Shanghai Pujiang Program, Shanghai Oriental Scholar, Dawn Program of Shanghai Education Commission, and more national, provincial, and ministerial level research projects.

Prof. Zheng Junke has been selected as the candidate for the National Science Fund for Outstanding Youth, National Science Foundation for Distinguished Young Scholars, Shanghai Municipal Foundation for Discipline Leaders in Science. He won the second prize of the Shanghai Municipal 15th Rising-Star Award, the Shanghai Municipal Youth May Fourth Medal, the Award for Wu Mengchao Medical Science Foundation. He is a member of the Blood Committee of the Chinese Association for Physiological Sciences, member of the Youth Work Committee of the Chinese Association for Physiological Sciences, member of Cell Metabolism Committee of the Chinese Society for Cell Biology, member of the Experimental Hematology Committee of the Chinese Association of Pathophysiology, the Secretary General of Shanghai Municipal Association of Pathophysiology.



OPENING ADDRESS & BIOENGINEERING INSIGHTS

Lisa Xuemin Xu

Associate Director

University Council of Shanghai Jiao Tong University

Dr. Xu received her Ph.D. degree in Mechanical Engineering (1991) from University of Illinois at Urbana-Champaign, USA. She was on the faculty of Mechanical Engineering at Purdue University before taking the “Chang Jiang Scholar” Distinguished Professorship in Biomedical Engineering at Shanghai Jiao Tong University in 2003. She received the “Outstanding Youth Award” by Chinese Natural Science Foundation (CNSF) in 2007 and was the recipient of Natural Science Award from Chinese Ministry of Education in 2010. Her research focuses on biomedical devices and innovated multimodal thermal immune cancer therapy, supported by NCI and NSF in USA, and NSF, MOST in China, respectively. She has published more than 200 peer reviewed journal papers and conference proceedings, and five book chapters, obtained Honorary Doctoral Degree from the Kungliga Tekniska Högskolan (KTH, Royal Institute of Technology), Sweden, and elected fellows of ASME, AIBME, IAMBE, CSBME, Honorary Life Member of IFMBE.



She served as Vice President for Education and International Affairs (2013-2024) at Shanghai Jiao Tong University (SJTU). Currently, she is a Chair Professor in Biomedical Engineering, also serving as an Associate Director of the University Council of SJTU, Dean of Zhiyuan College (undergraduate Honors' Program), and Director of National Engineering and Research Center of Advanced Magnetic Resonance Technologies for Diagnosis and Therapy (NERC-AMRT).

Title of the Talk:

Multi-modal Thermal Therapy (MTT) for Solid Tumor: An Innovative Interventional Immunomodulatory Technology

ABSTRACT:

Tumor intervention ablation has been commonly regarded as a surgical alternative therapy to quickly reduce tumor burden. In recent years, an increasing number of studies have reported the immunomodulatory effects of interventional therapy. By inducing massive cell death, interventional ablation therapy promotes the release of tumor antigens and adjuvants, achieving the effect of in situ vaccine and stimulating endogenous antitumor immunity. In this talk, our novel emerged multiple physical field fusion ablation therapy, namely multimodal thermal therapy will be introduced, and its reshaping the tumor microenvironment that provides new approaches for the treatment of highly metastatic immunosuppressive tumors of wide clinical applications.

The background of the entire page is a honeycomb pattern. It consists of numerous hexagons of varying sizes, some of which are filled with a light pink color, while others are white. The hexagons are outlined with thin, light pink lines.

SPEAKER BIOGRAPHIES

CONFERENCE THEME

HEALTHY LONGEVITY



Brian Kennedy

Distinguished Professor of Biochemistry & Physiology

National University of Singapore

Yong Loo Lin School of Medicine

Dr. Brian Kennedy is a Distinguished Professor in the Departments of Biochemistry and Physiology and also serves as the Programme Chair of the Healthy Longevity Translational Research Programme and Director of the Bia-Echo Asia Centre for Reproductive Longevity and Equality, Yong Loo Lin School of Medicine, National University Singapore. In addition, he is also the Director of the Centre for Healthy Longevity, National University Health System. Collectively, his work supports NUS's broader mission to show that longevity interventions can be applied in humans to extend healthspan, the period of life spent free of disease and with high physical and cognitive function.

An internationally recognised leader in ageing research, Professor Kennedy focuses on understanding the biological mechanisms that drive ageing and on identifying interventions that improve healthspan and lifespan. His research played a key role in revealing how Sirtuins and the mTOR pathway regulate ageing, and more recently has expanded into the development of ageing biomarkers.

Professor Kennedy was President and CEO of the Buck Institute for Research on Aging from 2010 to 2016 and remained a professor there through 2020. He previously served on the faculty at the University of Washington and also holds an adjunct appointment at USC. He earned his PhD at MIT, where he published the first paper linking Sirtuins to ageing.

Title of the Talk:

Combining Interventions with Biomarkers in Longevity

ABSTRACT:

Extending lifespan alone is no longer the primary goal of longevity research; increasing healthspan—the years lived free from chronic disease and functional decline—has emerged as the central objective. Achieving this requires the integration of interventions with robust biomarkers capable of measuring biological aging and predicting clinical outcomes.

This presentation examines the evolving ecosystem of longevity interventions, including lifestyle modification, drugs, and supplements, alongside advances in biomarker development. We discuss how AI-driven drug discovery and screening platforms are accelerating the identification of geroprotective compounds, while mechanism studies continue to elucidate pathways involved in aging and age-related disease. Human cohort studies provide critical validation of candidate interventions and biomarkers across diverse populations.

The convergence of interventions, biological age assessment, and artificial intelligence is creating a framework for precision longevity medicine, enabling more effective strategies to optimize healthspan and potentially reshape the future of aging research.

CONFERENCE THEME

HEALTHY LONGEVITY



Saji Kumar Sreedharan

Assoc Professor, Principal Investigator

National University of Singapore

Yong Loo Lin School of Medicine, Department of Physiology Centre for Life Sciences

Dr. Sajikumar Sreedharan is an Associate Professor in the Department of Physiology at the Yong Loo Lin School of Medicine, National University of Singapore, where he leads the Synaptic Plasticity Laboratory. He obtained his M.Sc. in Physiology from the University of Calicut, India, before working briefly at the Defence Research and Development Organisation (DRDO), New Delhi. He then moved to Germany to pursue doctoral studies under Prof. Uwe Frey at Otto-von-Guericke University Magdeburg, investigating the cellular and molecular mechanisms of long-term memory using hippocampal synaptic plasticity. He subsequently completed postdoctoral training with Prof. Martin Korte at the Helmholtz Centre for Infection Research, where he explored metaplasticity and dendritic mechanisms underlying persistent synaptic plasticity using multi-electrode recording approaches.

Since establishing his laboratory at the National University of Singapore in 2012, his research has focused on understanding how memories are encoded, stabilized, and modified in the brain, and how ageing, sleep loss, neurodegenerative diseases, and metabolic disorders disrupt these processes. His work has significantly advanced the understanding of synaptic tagging and capture, associative plasticity, and hippocampal function, leading to publications in leading journals and international recognition in the field of learning and memory.

Outside the laboratory, he enjoys cooking, creating fusion cuisine, and recreational fishing.

Title of the Talk:

Targeting CCR5 to Restore Memory in Alzheimer's Disease

ABSTRACT:

Neuroinflammation is increasingly recognized as a key driver of synaptic dysfunction and cognitive decline in Alzheimer's disease (AD). The chemokine receptor CCR5 is a critical mediator of neuroimmune signalling, yet its role in regulating hippocampal synaptic plasticity and memory remains incompletely understood. Here, we investigated whether CCR5 contributes to synaptic and behavioural deficits in experimental models of AD. Using extracellular electrophysiological recordings in acute hippocampal slices from wild-type, APP/PS1, and A β (1-42) oligomer-treated mice, we examined late-phase long-term potentiation (late-LTP) and synaptic tagging and capture (STC), two fundamental mechanisms underlying long-term memory formation. Associative memory was assessed using a behavioural tagging paradigm in wild-type and APP/PS1 mice following treatment with the CCR5 antagonist maraviroc. Hippocampal tissue was subsequently analysed by Western blotting to investigate the underlying molecular mechanisms. CCR5 expression was significantly increased in both A β -treated and APP/PS1 hippocampi. These AD models exhibited pronounced impairments in late-LTP, STC, and associative memory, all of which were restored following pharmacological inhibition of CCR5. Mechanistically, CCR5 inhibition was associated with normalization of actin cytoskeletal signalling through the RhoA-ROCK2-LIMK1-cofilin pathway and recovery of ERK-BDNF signalling. Together, these findings identify CCR5 as a key neuroimmune regulator linking inflammation to synaptic and memory dysfunction in AD and highlight CCR5 inhibition as a promising therapeutic strategy for restoring cognitive function.

CONFERENCE THEME

HEALTHY LONGEVITY



Giuseppe D'Agostino

Professor

University of Manchester

SMS/Division of Integrative Physiology/ FBMH

Giuseppe (Peppe) D'Agostino is Professor and Group Leader in the Division of Integrative Physiology at the University of Manchester. He is also a member of the Lydia Becker Institute of Immunology and Inflammation and the Geoffrey Jefferson Brain Research Centre.

A pharmacologist by training, Peppe earned his PhD in Neuropharmacology from the University of Naples, Italy, before undertaking further research training at Yale University, the University of Cambridge and the University of Aberdeen. In 2017, he was awarded a Medical Research Council fellowship to establish his independent research group, which relocated to Manchester in 2019.

Peppe's laboratory investigates brain-body physiology, with a particular focus on the metabolic and immune adaptations that accompany sickness, their physiological significance and their potential therapeutic exploitation. His group also studies the neural circuits underlying nausea and anorexia, and how obesity medications engage these pathways. To address these questions, the laboratory combines genetic approaches, systems neuroscience and integrative physiology.

Title of the Talk:

Brain Circuits Controlling Energy Metabolism: Novel Insights Beyond Appetite Regulation.

ABSTRACT:

Brain circuits that sense energy availability do far more than regulate appetite. This talk will explore how metabolic sensing brain circuits coordinate whole-body physiology, integrating nutritional state with metabolism, immune function and behavioural responses to illness. I will discuss how these circuits regulate energy mobilisation, immune-cell dynamics and readiness, while also shaping anorexia, nausea and the response to obesity therapeutics.

CONFERENCE THEME

HEALTHY LONGEVITY



Jan Gruber

Associate Professor

National University of Singapore

Yong Loo Lin School of Medicine, Department of Biochemistry

Associate Professor Jan Gruber is with the Department of Biochemistry at the National University of Singapore and has played a key role in advancing ageing research at NUS. Before joining the faculty, he served as a Postdoctoral Research Fellow and later Senior Research Fellow at the Centre for Life Sciences, where he established the *Caenorhabditis elegans* ageing laboratory to investigate the biology of ageing in a powerful model organism.

His research focuses on the mechanisms of biological ageing, oxidative damage, antioxidants, and interventions that promote healthy lifespan. He is particularly known for leading a 2018 Developmental Cell study showing that specific drug combinations could slow ageing and markedly extend lifespan in *C. elegans*, highlighting the potential of combinatorial drug approaches to improve healthspan.

Associate Professor Gruber's academic training spans physics, biochemistry, and molecular biophysics. He studied at RWTH Aachen University, completed Part III of the Mathematical Tripos at the University of Cambridge, and earned both his MSc and PhD in Molecular Biophysics and Biochemistry at the University of Oxford. During his doctoral work, he also contributed to the development of CCP4mg, a widely used molecular graphics software package.

In addition to research, he is a dedicated educator who has taught and mentored students at NUS since 2007.

CONFERENCE THEME

HEALTHY LONGEVITY



Yixin Wang

Vice Dean and Chair of Environment and Health Department

Shanghai Jiao Tong University
School of Public Health

Dr. Yixin Wang is Professor, Doctoral Supervisor, Deputy Dean, and Director of the Department of Environment and Health at the School of Public Health, Shanghai Jiao Tong University. He received his PhD from Tongji Medical College, Huazhong University of Science and Technology in 2017. From 2018 to 2023, he worked as a Postdoctoral Fellow and Lead Scientist at the Harvard T.H. Chan School of Public Health. His research focuses on environmental and life-course reproductive epidemiology. He has published nearly 200 papers in leading journals, including BMJ, JAMA Internal Medicine, European Heart Journal, European Respiratory Journal, Journal of the American College of Cardiology, Environmental Health Perspectives, and Environmental Science & Technology. His research has received the First Prize and Third Prize of the Hubei Provincial Science and Technology Progress Award. He also serves on the young editorial boards of The Innovation and Sustainable Horizons and contributes to national academic books and postgraduate textbooks.

Title of the Talk:

A Lifespan Perspective Of Human Reproduction

ABSTRACT:

Human reproduction is influenced by environmental, biological, and social factors operating across the life course. Increasing evidence suggests that reproductive health is shaped not only during pregnancy but also by exposures occurring before conception and in early life, with consequences extending into adulthood and across generations. This presentation will introduce a lifespan framework for reproductive epidemiology, drawing on findings from cohort studies in the United States and China. We will highlight the impacts of environmental exposures, including air pollution, disinfection by-products, PFAS, metals, and other emerging contaminants, on fertility, semen quality, pregnancy outcomes, child development, and long-term health. Particular attention will be given to critical windows of susceptibility, including preconception, pregnancy, and early childhood. The presentation will also discuss emerging approaches, such as exposomics, metabolomics, and advanced causal inference methods, to identify mechanisms and intervention targets. A lifespan perspective offers new opportunities to improve reproductive, maternal, and child health and inform prevention strategies across generations.

CONFERENCE THEME

HEALTHY LONGEVITY



Caiyue Liu

Director and PI of Anti-aging,
Regeneration & Longevity Medicine
Basic Scientific Research and Clinical Translational Medicine

Shanghai Jiao Tong University
School of Medicine/Shanghai Ninth People's Hospital/
Plastic and Reconstructive Surgery

Focusing on the classic core scientific question of “Stem cell fate regulation and pathogenesis”, Professor Liu has long been dedicated to fundamental and translational research in regenerative, aging and Longevity medicine. He has led and presided over 4 projects funded by the National Natural Science Foundation of China, 2 provincial and ministerial-level projects, and 3 high-quality clinical studies. His research findings have been published as first or corresponding author in leading international journals such as Nature Aging (3 papers), Advanced Science, Cell Discovery, and Nature Communications, et al.

Title of the Talk:

Repetitive Exposure of Hyperbaric Oxygen Drives Systemic Senolysis to Alleviate Aging in Preclinical Models and Humans

ABSTRACT:

Cellular senescence is an important driver of organismal aging, yet clinically applicable senotherapeutics remains critically limited. Here, we establish hyperbaric oxygen (HBO), an FDA-approved modality with proven clinical safety profiles, as a promising senolytic intervention. We show that repetitive HBO specifically triggers apoptotic death in senescent cells by exploiting their inherent redox vulnerabilities, while sparing proliferative cells with intact antioxidant defenses. In preclinical models of chemotherapy-resistant tumors and radiation-induced premature aging, HBO mitigated tissue senescence burden and associated pathological manifestations. In naturally aged mice, HBO also reduced systemic senescence burden and reversed age-related transcriptomic signatures, concomitant with improved physiological function. Clinically, a 12-week randomized controlled trial in elderly subjects demonstrated that HBO reduced circulating senescence-associated secretory phenotype (SASP) factors, paralleled by clinically prominent skin rejuvenation. By integrating mechanistic insights with cross-species validation, we propose HBO as a readily deployable strategy to mitigate aging and age-associated pathologies.

CONFERENCE THEME

PRECISION MEDICINE



Rickie Patani

Professor

National University of Singapore

Yong Loo Lin School of Medicine, NUS Centre for Life Sciences Departments of Medicine and Anatomy

Prof Patani is a distinguished physician-scientist with over a decade of research experience in neurodegeneration, particularly in human induced pluripotent stem cell (iPSC) models. His work has significantly advanced understanding of RNA metabolism and cellular autonomy in the context of neurodegenerative diseases.

Prof Patani currently serves as Director of the Neurobiology Programme at NUS LSI and Chair of the Neuroscience Translational Research Programme.

He has received multiple prestigious awards for his research, including the International 3Rs Prize, Paulo Gontijo Prize in Medicine, Graham Bull Prize, and Goulstonian Lectureship from the Royal College of Physicians. He is also a recipient of the Lister Research Prize. He is a Fellow of the Academy of Medical Sciences.

Title of the Talk:

The Rise of Retained Introns in Neurodegeneration

ABSTRACT:

As a physician-scientist, my life's work is driven by a single ambition: to understand and ultimately cure devastating neurological diseases. My laboratory focuses on age-related disorders of the nervous system, principally ALS (motor neuron disease) and the dementias. ALS is a relentless condition in which patients progressively lose the ability to move, eat, speak, and breathe. Like most age-related neurodegenerative diseases, it remains largely untreatable, because the underlying mechanisms are still poorly understood.

To address this critical gap, my lab harnesses human stem cells derived directly from patients. With over 15 years of experience in this technology, we can now reprogram patient stem cells into human neurons and glia in a dish, thereby enabling us to interrogate the molecular sequence of disease-relevant events within defined cell types, in a genuinely human system.

This talk presents what our laboratory has contributed to the field. Our overarching goal is to identify precisely what goes wrong, when it begins, and in which cell type. I will discuss two phenomena central to motor neuron degeneration in ALS: deregulated RNA metabolism, and the reactive transformation of astrocytes. A particular focus will be a form of alternative splicing known as intron retention (how it is dysregulated in ALS, and how it may drive pathogenesis across multiple cell types). I will also summarise our contributions to other archetypal age-related neurodegenerative disorders.

Ultimately, by defining the precise mechanisms that underlie these diseases, we hope to identify therapeutic targets that can be exploited for real patient benefit.

CONFERENCE THEME

PRECISION MEDICINE



Liu Boxiang

Assistant Professor

National University of Singapore
Yong Loo Lin School of Medicine

Dr. Liu Boxiang is a Presidential Young Professor appointed jointly at the Department of Biomedical Informatics and the Department of Pharmacy and Pharmaceutical Sciences within the Yong Loo Lin School of Medicine, National University of Singapore (NUS). Concurrently, he serves as a Principal Research Scientist at the Genome Institute of Singapore, A*STAR. He obtained a Bachelor of Arts in Biophysics from Illinois Wesleyan University, followed by a Master of Science in Statistics and a Doctor of Philosophy in Bioinformatics from Stanford University. Prior to joining NUS, Dr. Liu functioned as a Research Leader at Baidu Research Silicon Valley.

Dr. Liu's laboratory specializes in genomic data science, deploying multi-omics integrations and utilizing state-of-the-art machine learning architectures to elucidate the genetic etiologies of complex human pathologies. His research focuses extensively on expression quantitative trait loci (eQTL) mapping, single-cell multi-omics, and genome-wide association studies (GWAS). His investigative efforts aim to transition non-coding genetic variants into therapeutically actionable targets, demonstrating significant advancements in characterizing genetic regulatory mechanisms underlying coronary artery disease, age-related macular degeneration, and autoimmune dysregulations. Furthermore, Dr. Liu contributes to algorithmic innovations in mRNA structural optimization for therapeutic vaccine design. He is an integral contributor to large-scale international consortia, including the Genotype-Tissue Expression (GTEx) project and the Asian Immune Diversity Atlas (AIDA).

Title of the Talk:

Single-cell and Spatial Methods to Understand Complex Diseases

Abstract:

Genome-wide association studies have identified more than a million risk variants for complex diseases, yet fewer than 5% of cardiovascular loci have validated target genes. Closing this gap requires resolving genetic regulation at the right cell types, ancestries, and cellular contexts. In this talk, I will present three complementary efforts from my lab. First, AIDA – a single-cell atlas of ~1 million PBMCs from ~500 donors of diverse Asian descent profiled with 5' chemistry – captures 4.3-fold more splice junctions than prior 3' libraries and reveals ancestry-biased splicing events, including an Asian-specific TCHP variant that modulates Graves' disease risk. Second, we developed ISSAC to map cell-state-dependent sQTLs across millions of cells and uncovers Alzheimer's-biased sQTLs in dorsolateral prefrontal cortex snRNA-seq. Third, we developed DIRAC to use adversarial domain-invariant representations to harmonize spatial multi-omic datasets, enabling a high-resolution T cell development atlas in the mouse thymus. Together, these methods chart a path from population-scale genetics to cell-state- and tissue-resolved mechanisms underlying complex diseases.

CONFERENCE THEME

PRECISION MEDICINE



Lin Zou

Director

Shanghai Jiao Tong University
School of Medicine /The Ninth Hospital /
Department of Laboratory Medicine

Director of the Department of Clinical Laboratory, Shanghai Ninth People's Hospital, Shanghai Jiao Tong University School of Medicine, and Doctoral Supervisor in Clinical Laboratory Diagnostics. Prof. Zou has been awarded honors including Shanghai Eastern Talents Leading Talent, New Century Excellent Talents of the Ministry of Education, and Chongqing Talents.

She holds multiple academic positions such as Member of the American Society of Hematology (ASH), Vice Chairman of the Special Committee on Precision Application of Clinical Mass Spectrometry and Reproductive Health under the Chinese Maternal and Child Health Association, and Member of the Clinical Laboratory Committee of the Chinese Hospital Association.

She has presided over 32 research projects, including 8 National Natural Science Foundation of China (NSFC) projects and 2 key R&D program projects of the Ministry of Science and Technology. As the first or corresponding author, he has published 92 SCI papers, led the formulation of 12 expert consensus on clinical laboratory technologies, delivered 12 keynote speeches at international academic conferences, and obtained 5 national invention patents.

Title of the Talk:

Progress on Abnormal Mitochondrial Metabolism Reprogramming in Malignant Tumors

Abstract:

Mitochondrial metabolic reprogramming is a core hallmark of malignant tumors, which facilitate unlimited proliferation, immune escape, chemotherapy resistance and distant metastasis of tumor cells, severely restricting the clinical therapeutic effect of cancers. It is urgent to develop targeted anti-tumor strategies based on mitochondrial metabolic reprogramming.

Our team focused on the abnormal mitochondrial metabolic reprogramming in hematological cancers, head and neck tumors. Recently, by constructing a single-cell transcriptional metabolic landscape, we identified the tricarboxylic acid (TCA) cycle as the dominant source of metabolic heterogeneity in leukemic cells, enabling their stratification into three distinct states. The highly active (H-A) TCA cycle state correlates with developmental immaturity. Patients of H-A subtype have inferior survival and exhibit resistance to venetoclax. Further integrative transcriptomic and functional analyses revealed that OXPHOS activity is heterogeneously activated in T-ALL, and elevated OXPHOS activity was associated with adverse clinical features of immature T-ALL. Inhibition of mitochondrial ATP synthase using Gboxin selectively suppressed OXPHOS and induced ferroptosis in immature T-ALL cells in vitro and in vivo, with directly engaged the transcription factor ZNF384 to derepress CHAC1 expression, leading to GSH depletion and redox imbalance. Our study demonstrate the precise mitochondrial targeting regimens and combined therapy schemes, helping achieve individualized clinical tumor treatment.

CONFERENCE THEME

PRECISION MEDICINE



Ng Kar Hui

Associate Professor

**National University of Singapore
Medicine**

Associate Professor Ng Kar Hui is a Senior Consultant in the Division of Paediatric Nephrology, Dialysis and Renal Transplantation, and the Division of Paediatric Genetics and Metabolism at Khoo Teck Puat–National University Children's Medical Institute, National University Hospital (NUH). She is also Director of the National University Centre for Genomic Medicine (NUGEM), NUH, and Associate Professor in the Department of Paediatrics, Yong Loo Lin School of Medicine, National University of Singapore.

Her clinical and research interests lie in genetic kidney diseases and dialysis in young children. She leads the Kidney Genetics Clinic and Fetal Kidney Clinic, supporting patients and expectant couples. Following a two year fellowship at Children's Hospital Boston, she pioneered Singapore's research program on kidney genetics. She established DRAGoN (Deciphering Diversities: Renal Asian Genetics Network) to advance regional studies, and founded RAPIDS (Renal Alliance for Precision Diagnosis in Singapore), a multi institutional network implementing genomics in kidney care. She now leads NUGEM with the mission of integrating genomic and precision medicine into routine clinical practice.

A/Prof Ng is a Subject Editor for Nephrology, has authored book chapters, and lectures internationally. As Education Ambassador for the International Society of Nephrology, she teaches across Asia. She has twice received the NUS Faculty Teaching Excellence Award and serves on NUH's Paediatric Medicine Resident Advisory and Clinical Ethics Committees.

Title of the Talk:

Bringing Genomic and Precision Medicine Insights into Clinical Decision-making

ABSTRACT:

Dr Ng will speak on how Singapore and NUHS is bringing about genomic transformation in clinical care. She will speak on challenges and the current ways in which precision medicine is impacting on clinical care in NUHS, specifically in the field of oncology, obstetrics, nephrology, cardiology, pharmacogenomics, and others. She will also speak on the plans NUGEM has in upscaling genomic medicine in clinical practice.

CONFERENCE THEME

PRECISION MEDICINE



Kokouvi Kassegne

Assistant Professor

Shanghai Jiao Tong University School of Medicine
School of Global Health

Dr. Kokouvi Kassegne is an Assistant Professor at Shanghai Jiao Tong University School of Medicine, leading a translational research program at the nexus of pathogen biology, host immunology, and precision medicine. As an investigator, he has established a globally recognized platform for antigen epitope discovery and biomarker development for malaria and other high-priority infectious diseases.

Dr. Kassegne drives precision medicine by integrating immunoproteomic and immunogenomic approaches, focusing on *Plasmodium falciparum* RIFIN/STEVEOR variants to systematically map antigenic epitopes that drive clinical immunity and identify serological signatures that distinguish asymptomatic reservoirs from individuals at risk of severe malaria. His laboratory has developed patented multi-epitope vaccine constructs and immunodominant peptide-based diagnostic tools, directly translating host immune profiling into stratified clinical applications.

His discoveries are featured in *EBioMedicine* and *Emerging Microbes & Infections*, supported by competitive extramural funding from provincial and national agencies. Beyond the bench, he is an academic editor and deeply committed to capacity building and global health partnerships.

At this Symposium, he will present his latest findings on host-directed precision strategies for malaria—from epitope-based vaccine design to next-generation serosurveillance tools—and seek collaborative synergies with NUS and Manchester investigators to advance precision interventions for infectious diseases in resource-limited settings.

Title of the Talk:

Precision at the Host-Pathogen Interface: Epitope-Based Vaccine and Serosurveillance for Malaria Elimination

ABSTRACT:

Malaria remains one of the “big three” infectious diseases, claiming over half a million lives annually—mostly children under five in resource-limited settings. This burden stems from a dual crisis: *Plasmodium falciparum* drives severe mortality through host immune subversion, while *P. vivax* sustains transmission via asymptomatic, silent carriers that evade conventional diagnostics—together undermining the WHO’s 2030 elimination target. We target host–pathogen interface to translate immune signatures into actionable interventions. For severe malaria, we identified a subset of *falciparum* RIFIN antigens that engage the LILRB1 immune checkpoint via mimicry of MHC-I, linking to reduced severe disease risk. Exploiting this vulnerability, we designed a conserved STEVEOR-based multi-epitope fusion antigen that elicited robust humoral and cellular immunity with >97% global HLA coverage. Concurrently, for *P. vivax*, we curated and validated immunodominant B-cell epitopes across endemic regions, which achieved >90% sensitivity for active infections or linked to asymptomatic carriers, enabling detection of silent reservoirs. Conserved across strains and non-cross-reactivities, these epitopes provide scalable serosurveillance for low-resource settings. By targeting immune checkpoints for vaccine design and host serological signatures for surveillance, our platform offers a precise framework that transforms host–pathogen immune data into stratified tools for both clinical protection and elimination strategies.

CONFERENCE THEME

PANDEMIC PREPAREDNESS



Meghna Jani

- NIHR Advanced Fellow & Senior Clinical Lecturer (Associate Professor)
- Honorary Consultant Rheumatologist

The University of Manchester

Centre for Musculoskeletal Research/ Division of Musculoskeletal and Dermatological Sciences/ School of Biological Sciences/ FBMH

Dr Meghna Jani is a Senior Lecturer in Epidemiology and a Consultant Rheumatologist. Her research, funded through a National Institute of Health Research (NIHR) Advanced Fellowship, focuses on harnessing digital health data to improve understanding of opioid safety, utilisation, and personalised care. Using electronic health records and other real-world data sources, she leads research programmes applying epidemiological and data-driven approaches to address important questions in pain management, rheumatology, and medication safety. Prior to her NIHR Advanced Fellowship, she held a Presidential Fellowship and an NIHR Academic Clinical-Lectureship. Her MRC-funded PhD evaluated the effectiveness and safety of biologic therapies in rheumatic diseases using national registries.

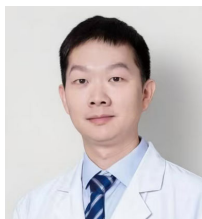
Meghna has received several national and international awards, including the British Society for Rheumatology (BSR) Young Investigator Award, the Arthritis UK Research Highlight of the Year Award in 2024 and most recently the FBMH Research Fellow of the Year 2026. She has advised NICE and the MHRA on medicines evaluation and opioid safety, contributed to multiple international guideline groups, and serves as Co-Convenor of the BSR Special Interest Group for Artificial Intelligence. She was also recently appointed as the Deputy Head of Division for The Division of Musculoskeletal and Dermatological Sciences at the University of Manchester.

Title of the Talk:

From Population Health to Individual Risk: Harnessing Digital Data to Improve Opioid Safety towards Precision Medicine

ABSTRACT:

Opioids remain widely prescribed for non-cancer pain despite growing concerns regarding their long-term effectiveness, dependence, and serious adverse outcomes. Harnessing routinely collected digital health data offers unique opportunities to understand real-world utilisation, identify patients at greatest risk of harm, and support more personalised approaches to treatment. Using large-scale electronic health records internationally, from UK primary care and hospitals, this talk will demonstrate how data-driven approaches can be used to characterise prescribing patterns, predict adverse outcomes, and move towards a more personalised approach to prescribing. The presentation will showcase how machine learning and risk prediction models developed from real-world data can help move opioid prescribing beyond a one-size-fits-all approach, enabling clinicians and patients to make more informed decisions based on individual risk profiles. Ultimately, these approaches illustrate how digital health data can serve as a foundation for precision medicine, delivering safer, more effective, and more personalised pain management.



Chen-Ying Liu

Research Professor

Shanghai Jiao Tong University School of Medicine

Xinhua Hospital/Department of Colorectal and Anal Surgery

Chen-Ying Liu is a research professor at Xinhua Hospital, affiliated with Shanghai Jiao Tong University School of Medicine. He earned his bachelor's degree from Wuhan University and his Ph.D. from Fudan University under the mentorship of Kun-Liang Guan. He completed his postdoctoral training in the laboratory of Wanjin Hong at the Institute of Molecular and Cell Biology (IMCB), A*STAR, Singapore. His research focuses on the dysregulation of the Hippo signaling pathway and its role in the development and progression of colorectal cancer. His current work also aims to advance the molecular understanding of drug resistance and to develop new therapies for colorectal cancer.

Title of the Talk:

Multi-Omics Profiling Reveals Immune Remodeling And Immuno-Response
Molecular Subtype For Neoadjuvant Chemotherapy Plus PD1 Blockade In pMMR
Rectal Cancer

Abstract:

Immune checkpoint blockade (ICB) has limited efficacy in mismatch repair-proficient (pMMR) locally advanced rectal cancer (LARC). Although neoadjuvant chemoradiotherapy (nCRT) combined with ICB can improve responses, radiation-associated toxicities remain a clinical concern. Here, we present the findings of FIRM (NCT06688786), the first proof-of-concept trial evaluating a radiotherapy-free neoadjuvant immunochemotherapy (nICT) regimen in pMMR LARC. The pathological complete response (pCR) and major pathological response (MPR) rates were 43% and 68%, respectively. We identified two baseline cellular subsets—inflammation/migration tumour cells (IMT) and ITGAX⁺ activated B cells (IAB)—as robust predictive biomarkers of nICT response. Mechanistically, nICT orchestrates a coordinated dual-pathway immune remodelling involving the IMT–cDC1–CD8 and IAB–CD4 axes, converting immune-cold tumours into an immune-activated state. Integrating single-cell-derived features with bulk RNA sequencing and whole-exome sequencing data, we established an immune-response molecular subtype (IRMS) that stratifies patients into immune-activated and immune-resistant types. The IRMS classifier provides a high-precision, pan-cancer-compatible tool to guide patient selection and personalized immunotherapy strategies.

CONFERENCE THEME

CANCER



Polly Leilei Chen

Associate Professor and Assistant Head, Department of Anatomy, NUS
Principal Investigator and Deputy Director, Cancer Science Institute of Singapore, NUS

National University of Singapore
NUS Med

Dr. Polly Leilei Chen earned her Bachelor of Medicine and completed medical training in China before receiving her PhD from the University of Hong Kong in 2010. In 2014, she joined the National University of Singapore as a Principal Investigator at the Cancer Science Institute of Singapore and served as Assistant Professor in the Department of Anatomy. She was promoted to Associate Professor in 2021 and is currently the Deputy Director of CSI. Her research focuses on the functional and mechanistic roles of RNA changes, particularly RNA editing, modification, and splicing, in cancer initiation and progression, and on developing novel cancer therapies that target these RNA alterations.

Title of the Talk:

From Sensing to Silence – dsRNA Pathways and Their Role in Immune Evasion

ABSTRACT:

Cancer remains a major global health challenge, with one of the primary obstacles to effective treatment being the ability of tumors to evade immune detection and destruction. Although significant advances have been made in understanding the mechanisms underlying immune escape, strategies to effectively counteract this process are still limited. Recent research has highlighted the pivotal role of double-stranded RNA (dsRNA) molecules in modulating tumor immunity, positioning dsRNA as a novel and critical factor in cancer immune evasion. Elucidating which dsRNA species are involved, and how they are recognized and modified to facilitate immune escape, holds promise for the development of innovative therapies aimed at overcoming immunotherapy resistance and unresponsiveness. In this talk, I will present our latest findings, focusing on the complex interplay between RNA alterations and immune regulation, and their profound impact on immunosuppression in cancer.



Angeliki Malliri

Professor of Cell Biology

The University of Manchester

School of Medical Sciences/Division of Cancer Sciences/Faculty of Biology Medicine and Health

Angeliki Malliri completed her bachelor's degree in Biology at the University of Patras and obtained her PhD from the University of Crete, Greece. She worked as a postdoctoral scientist at the CRUK Beatson Institute in Glasgow and the Netherlands Cancer Institute in Amsterdam, funded by a Marie Skłodowska-Curie postdoctoral fellowship. She established her independent research group in 2004 at the CRUK Manchester Institute and moved to the Division of Cancer Sciences of the University of Manchester in March 2024. A focus of her laboratory over the years has been the mechanisms that control cell plasticity, cell migration and invasion, definitive characteristics of malignant cells essential for metastasis. Recently, her team has been studying these phenomena in the context of KRAS-mutant lung adenocarcinoma and small-cell lung cancer. They have also been addressing KRAS-mutant isoform-selective signalling and functions in lung cancer development, progression and response to therapies in close collaboration with Prof. Colin Lindsay at Christie Hospital, Manchester.

Title of the Talk:

Targeting KRAS-Mutant Non-Small Cell Lung Cancer and Small Cell Lung Cancer

ABSTRACT:

My talk will focus on our work addressing KRAS-mutant isoform-selective signalling and therapeutic vulnerabilities in non-small-cell lung cancer (NSCLC), with brief reference to our work in small-cell lung cancer.

Direct inhibitors against specific KRAS mutations, such as KRASG12C and KRASG12D, represent the beginning of major translational breakthroughs for NSCLC by targeting its most frequently mutated oncogene. However, resistance to these inhibitors has highlighted the pressing need for rational and effective combination partners. Identifying such partners requires a clearer understanding of KRAS mutant allele-specific biology.

We therefore compared the oncogenic potency and signalling differences of KRAS hotspot mutations at codons 12 and 13 to identify potential isoform-specific vulnerabilities. To do this, we used genetically engineered mouse models, in vitro models of KRASG12C-, KRASG12D-, KRASG13C- and KRASG13D-driven NSCLC initiation, established tumour cell lines and a patient database. Using transcriptomic analyses and a compound library screen, we identified therapeutic vulnerabilities specific to each mutation. Combining the targeting of these vulnerabilities with direct KRAS mutant inhibitors revealed synergistic effects that were specific to the KRAS mutant allele. Our data therefore suggest that combination approaches should be contextualised to individual KRAS mutations and tailored to their downstream signalling and distinct vulnerabilities.

CONFERENCE THEME

CANCER



Bernice Oh Ling Zhi

Senior Lecturer

National University of Singapore
NUS/ Paediatrics/ Medicine

Dr Bernice Oh Ling Zhi is a Consultant in the Department of Paediatrics, Yong Loo Lin School of Medicine, National University of Singapore (NUS), and Director of the Immune Cell Engineering Laboratory. A clinical paediatric oncologist and clinician-scientist, she specialises in the development of novel CAR-T cell and antibody-based cellular therapies for haematological malignancies and solid tumours. She completed her PhD at NUS under the mentorship of Professors Allen Yeoh and Dario Campana, supported by an NMRC Research Training Fellowship.

Dr Oh has led the production of clinical-grade CAR-T cell products for multiple investigator-initiated CAR-T cell therapy trials and also runs a GMP-certified manufacturing facility pivotal in the translation of novel technologies for patient use. Her first-author publication in Nature Medicine reported the first clinical use of fratricide-resistant CD7-targeted CAR-T cells in T-cell acute lymphoblastic leukaemia. She currently holds an NMRC Transition Award to develop multi-antigen CAR-T cell therapy for acute myeloid leukaemia. Her broader work spans clinical trial design and translational immunology, bridging the gap between bench research and bedside application. She has published in Nature Medicine, Haematologica, and the Journal of Clinical Oncology.

Title of the Talk:

Targeting CD7 in Acute Leukemias

ABSTRACT:

Outcomes for patients with relapsed or refractory T-cell acute lymphoblastic leukaemia (T-ALL) remain poor, and unlike B-ALL, there is currently no approved CAR-T cell therapy for this disease. CD7 has emerged as a compelling target owing to its near-universal expression on T-ALL blasts, but its co-expression on normal T cells poses a unique challenge: CAR-T cells directed against CD7 are susceptible to fratricide, whereby effector cells kill one another during manufacturing and expansion. Several strategies have been developed to circumvent this problem, including CD7 gene knockout via CRISPR-Cas9 and protein-retention intracellular domain (PEBL) technology to mask surface CD7. This talk will survey the current landscape of CD7-directed CAR-T cell studies worldwide, compare these anti-fratricide approaches, and present our experience at the National University of Singapore. Our group developed a fratricide-resistant CD7-CAR-T cell product using PEBL-mediated CD7 blockade, leveraging an in-house GMP-certified cell therapy manufacturing facility that enabled rapid translation from bench to bedside. We demonstrated the safety and clinical activity of this product in patients with refractory T-ALL, achieving complete remissions in a first-in-human study. Finally, we will discuss the road ahead for CD7-targeted immunotherapy in Singapore and plans for expanded clinical trials.

CONFERENCE THEME

CANCER



Ningning Liu

Deputy Director of the Center for Single-Cell Omics

Shanghai Jiao Tong University School of Medicine
Center for Single-Cell Omics, School of Public Health

Prof. Liu obtained his Ph.D. from Chinese Academy of Sciences in 2012. After graduation, he continued his research in Harvard Medical School/Boston Children's Hospital as a post-doctoral researcher. In 2017, he joined Shanghai Jiao Tong University School of Medicine as a faculty member until now. Dr. Liu's research has been focused on fungi and cancer, especially the mechanistic investigation of fungi-host interaction during cancer progression by integrating metagenomics and single-cell omics analysis. He has published more than 40 original papers in prestigious journals (Cancer Cell, Cell Host & Microbe, Nature Microbiology, Nature Communications, Nature Protocols, PNAS, etc) and has been licensed 6 patents and 1 PCT patent for invention. One of the research achievements has been selected as "Top Ten Scientific and Technological Advances" in Shanghai Jiao Tong University.

Title of the Talk:

The Fungus Lurking Inside Tumor

ABSTRACT:

Polymorphic microbiomes are emerging hallmarks of cancer with profound impact on tumor progression. Yet far less is known about the mycobiome as living microorganisms and their biological functions in human cancer. Here, we explored the lung mycobiome in lung adenocarcinoma (LUAD) patients and isolated the live intratumor *Aspergillus sydowii* strain AS12183. Using two different syngeneic murine lung carcinoma models, we validated that the AS12183 accelerates lung tumorigenesis via expansion of MDSCs and Tregs, resulting in suppression of cytotoxic T lymphocyte cells activity and accumulation of exhausted PD-1+ CD8+ T cells. Therapeutic ablation of mycobiota significantly reduced tumor growth. Mechanistically, we found that deletion of the upstream innate immunity regulator CARD9 suppresses *Aspergillus*-induced infiltration of MDSCs and subsequently stalls tumor progression. Using culturomics and whole-genome sequencing, we validated a potential lung cancer-specific transmission trajectory of the key mobile species – *Aspergillus sydowii* with tumor-promoting activity from the nasal cavity to tumor tissue at the strain level. These findings suggest that the intratumor mycobiome, albeit at low biomass, could be targeted at the strain level to improve the outcome of lung cancer patients.

CONFERENCE THEME

PANDEMIC PREPAREDNESS



Sylvie ALONSO

Professor

National University of Singapore

Infectious Diseases Translational Research Programme

Prof Alonso received her PhD degree in Cellular and Molecular Biology from the Université Claude Bernard Lyon I (France), and pursued her postdoctoral training at the Institut Pasteur de Lille (France) and Cornell University (NY, USA), during which she studied bacterial pathogenesis and developed live bacteria as mucosal vaccine delivery systems. Sylvie established her research group at NUS, Singapore in 2004 and shifted her research focus toward viral pathogenesis, specifically RNA viruses that are medically important to Singapore and the region. In collaboration with Monash University (Australia), she has also developed a powerful dendritic cell targeting vaccine delivery platform. Prof Alonso has published her work in top scientific journals of broad readership (JEM, JCI, PNAS, Nature Comm, EMBO Mol Med, Mol Ther, EMBO Report, J. Biomed Sci) and in Tier 1 specialized journals (EMI, JVI, npj vaccines, PLOS pathogens, PLOS ntd, AVR, etc).

Since 2022, Prof Alonso leads the Vaccines&Therapeutics arm of the national pandemic preparedness programme (PREPARE), supporting local pandemic science and establishing key collaborations with regional and international partners.

Title of the Talk:

Development of a Powerful Dendritic Cell-Targeting Vaccine Delivery Platform for Pandemic Response.

ABSTRACT:

In recent years, dendritic cell (DC)-targeting strategies have been increasingly explored to develop novel vaccine candidates against infectious diseases. In collaboration with Monash University (Australia), we have shown that targeting weakly immunogenic vaccine antigen candidates to the C-type lectin-like receptor Clec9A expressed on conventional type 1 DCs (cDC1), holds great promise in pre-clinical animal models by inducing potent and durable, protective immune responses upon a single-shot systemic immunization. More recently, we have shown that this vaccine platform is highly potent when delivered via the respiratory route. Robust and sustained adaptive immune responses were detected in both the systemic and respiratory compartments. These findings represent a game changer in our fight against respiratory pathogens, providing strong protection at the primary site of infection with the prospect of reducing transmission among individuals.

CONFERENCE THEME

PANDEMIC PREPAREDNESS



Tan Chee Wah

Assistant Professor

National University of Singapore

Infectious Diseases Translational Research Programme

Dr. Tan Chee Wah is an infectious disease researcher whose work has significantly advanced serological tools for emerging viruses. He obtained his Ph.D. from the University of Malaya in 2014, where he studied enterovirus A71-host interactions. In 2017, he joined Professor Wang Linfa's laboratory, focusing on bat-borne viruses, including filoviruses, coronaviruses, and orthoreoviruses, gaining deep expertise in zoonotic virus biology. In 2023, he established his independent research programme at the Infectious Diseases Translational Research Programme, National University of Singapore.

Dr. Tan led the development of the SARS-CoV-2 surrogate virus neutralization test (sVNT), a breakthrough assay that enables rapid, high-throughput measurement of neutralizing antibodies without the need for live virus. Commercialized by GenScript as cPass™, it became the first serological test for SARS-CoV-2 neutralizing antibodies to receive U.S. FDA Emergency Use Authorization and has been widely adopted globally. In recognition of its impact, cPass™ has been acquired by the National Museum of Singapore for its permanent gallery.

Building on this work, his team has developed advanced multiplex sVNT platforms to profile immune responses across multiple viral families. He also co-leads regional collaborations across Southeast Asia through Wellcome Trust-funded consortia, contributing to genomic surveillance, sero-epidemiology, and pandemic preparedness. His work is published in leading journals, including NEJM, Nature Biotechnology, The Lancet Infectious Diseases, and Nature Microbiology.

Title of the Talk:

Decoding Immunity at Scale: High-Throughput Serology for Surveillance, Vaccines, and Antibody Discovery

ABSTRACT:

Neutralizing antibody (NAb) titres are strong correlates of protection against symptomatic infection and severe disease, yet conventional live-virus neutralization assays are labor-intensive, low-throughput, and require high-containment facilities. In this talk, I will present the development of a rapid and scalable surrogate virus neutralization test (sVNT) for SARS-CoV-2 and its expansion to a range of emerging high-risk viruses. I will highlight how multiplex sVNT platforms enable population-level immune profiling, monitoring of viral immune escape, and early detection of emerging coronaviruses. These tools have also informed rational vaccine design, including the identification of strategies that elicit broadly neutralizing antibodies across both SARS-related and MERS-related coronaviruses. Collectively, this work demonstrates how next-generation serological platforms can accelerate immune surveillance, guide vaccine development, and strengthen pandemic preparedness.

CONFERENCE THEME

PANDEMIC PREPAREDNESS



Yun Hu

Associate Professor

Shanghai Jiao Tong University
School of Nursing

Yun Hu, RN, PhD, Associate Professor, PI of Interprofessional nursing, Visiting Scholar at Duke University and Monash University. Jiulong Medical Young Talent and Shanghai Pharmaceutical Xinglin Talent Award. Lead of Shanghai Municipal Key Curriculum and Model Team for Moral Education.

Research Focus: Public health emergency; Digital humanities and women's health.

Academic Experience: (1) Funded by National Natural Science Foundation of China(NSFC), Shanghai Science and Technology Commission, Shanghai Philosophy and Social Science Office, and Municipal Health Commission. (2) Participated in NIH and Belt & Road Young Scientist projects. (3) International collaborations with Duke, UCL, Manchester, Monash, PolyU, and Yonsei University.

Academic Roles: Reviewer for NSFC; Member of Ministry of Education(MOE) Talent Program Expert Database; Committee Member of International Psycho-Oncology Society(IPOS);

Publications & Achievements:

1. Published 50+ papers (The highest IF: 15.1).
2. Developed three validated tools for public health emergency:
 - Nurses' Core Competencies for Public Health Emergencies (NCC-PHEs)
 - Community Nurses' Core Competency for Public Health Emergencies Scale (CNCC-PHEs)
 - The Chinese Nursing Work Environment Scale for Public Health Emergencies (C-NWE-PHE Scale)
3. Develop a 3,000 nurses team across 12 affiliated university hospitals, preparing them for PHEs,
4. Established the "Jiaotong University Model" for emergency nurses training
5. Establish a virtual lab for PHEs, develop 4 virtual cases and a AI-case study program for PHEs.

Title of the Talk:

Integrating Nursing Workforce and Work Environment to Enhance Health System Resilience for Pandemics: A Multicenter Cross-sectional Study

Abstract:

Background: A resilient health system is critical for addressing the increased climate crisis and infectious disease threats. While research on nursing competence and work environment during public health emergencies (PHEs) exists, gaps remain in understanding how their integration enhance system resilience.

(continued)

Methods: A multiple center cross-sectional study was conducted between December 2023 to January 2024 across 33 hospitals in eastern China, involving 2,435 nurses. Questionnaires measuring nursing competence, work environment resources, nurse disaster resilience, and organizational commitment to resilience were utilized, long with the collection of additional personal demographic data. Structural equation modeling and cluster analysis were performed to explore the underlying mechanisms within the overall model and across multiple groups. Multivariable regression was conducted to identify variables associated with resilience in different subgroups.

Results: Structural equation modeling demonstrated significant effects of nursing competence and work environment support on system resilience. Cluster analysis identified four resilience patterns: strong, marginal, low, and critical vulnerability. Strong resilience correlated with balanced individual-organizational resources, while vulnerable systems relied heavily on environmental support.

Conclusion: This study demonstrates that nursing competence and work environment significantly influence health system resilience during public health emergencies. The identification of four resilience patterns provides actionable insights for policymakers and healthcare managers to develop targeted, effective strategies to strengthen health system resilience across varying levels of public health emergencies.

CONFERENCE THEME

PANDEMIC PREPAREDNESS



Qingying Ji

Director of the Institute of Health Social Work, China Hospital Development
Department Institute, Shanghai Jiao Tong University

Shanghai Jiaotong University School of Medicine
Shanghai Children's Medical Center

Professor Ji Qingying has dedicated her career to advancing medical social work and medical humanities education. She has been a driving force in the professionalization and localization of medical social work in mainland China, promoting the development of service standards. She led the drafting of the first local standard (DB31/T 1205-2020) for medical social work in China, and served as the chief editor of the first series of textbooks on medical social work in China. She has also promoted the implementation of multiple policies concerning workforce development and professional advancement in medical social work.

She has led over ten research projects, including a National Social Science Fund grant, and published more than twenty papers in SCI, SSCI, and CSSCI journals. Her honors include being named one of the "Top Ten Chinese Social Work Figures" and receiving the Shanghai May Day Labor Medal.

- Chair of the Hospital Social Work and Volunteer Service Committee of the Chinese Hospital Association
- Vice Chair of the Medical Social Work Professional Committee of the China Association of Social Work Education
- Chair of the Medical Social Work Branch of the Shanghai Medical Association
- Chair of the Hospital Social Work and Volunteer Service Committee of the Shanghai Hospital Association

Title of the Talk:

Response Strategies and Policy Recommendations for Medical Social Work Engagement in Public Health Emergencies

ABSTRACT:

Guided by national policy incentives for social work engagement in public health emergency responses, this paper focuses on the involvement of medical social work in coping with public health emergencies. Taking COVID-19 prevention and control practices as an empirical example, it identifies diversified psychosocial and livelihood needs emerging across different stages of the crisis and analyzes intervention strategies as well as functional roles of medical social work. Findings indicate that medical social work employs a dual-track response paradigm covering individual support and environmental improvement, fulfilling dual functions of micro-level individual empowerment and macro-level social governance. However, due to a lack of institutional policies, a shortage of specialized practitioners, ambiguous role definitions, and unclear participation mechanisms, medical social work cannot fully exert its professional strengths in public health emergencies. Accordingly, this study constructs a full-cycle mechanism for the engagement of medical social work in public health emergencies, explores a dual-track service model integrating routine and emergency responses, and offers policy recommendations to strengthen the role of local medical social work in public health emergency response.

CONFERENCE THEME

PANDEMIC PREPAREDNESS



Ian Hall OBE

Director of Christabel Pankhurst Institute

University of Manchester
Mathematics and Health Sciences

Ian Hall is a Professor of Mathematical Epidemiology and Statistics at the University of Manchester. With a PhD in vortex dynamics from the University of Exeter, he spent 15 years at Public Health England (now UKHSA), leading modelling efforts for outbreak preparedness, including smallpox and pandemic influenza. He is a member of the Department of Health's SPI-M group, served as academic chair of the SAGE Social Care subgroup during the COVID-19 pandemic and was elected an inaugural fellow of Academy of Mathematical Sciences in 2025. He was awarded an OBE in June 2024 for his contributions to public health, epidemiology and adult social care, particularly during the Covid-19 Pandemic. His research focuses on disease impacts in vulnerable settings, operational planning, and real-time outbreak modelling for both pandemic preparedness and response. He now brings this expertise to the Christabel Pankhurst Institute, supporting the translation of digital health tools across disciplines.

Title of the Talk:

The Impact of Pandemics on (Semi-)Enclosed Institutions and What Makes Them Vulnerable

ABSTRACT:

Respiratory diseases are of serious concern in care homes because of the increased transmissibility of such diseases in these settings and the increased chance for severe outcomes among residents. Mathematical modelling is an important tool to help us better understand transmission and the impact of interventions in this setting. It was used throughout the COVID-19 pandemic to inform decision making but there are few well validated bespoke models to the settings. But there were major information gaps that limited advice, these include contact patterns in Prisons and Care homes, the cost of disease and interventions to settings in terms of quality of life. Here I will present results of preliminary studies to elicit contact patterns with surveys and Bluetooth devices, reflect on the application during COVID-19 pandemic of advice for social care sector and draw on lessons identified for future responses.

SPONSORS & ORGANIZERS

Main Organizer:



NUS
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Yong Loo Lin
School of Medicine

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Wuxi Capital Group Co., Ltd. (“Wuxi Capital Group”) is a state-owned venture capital institution spanning the entire investment lifecycle, from seed, angel, and venture funding to growth equity, M&A, and secondary funds. The company has evolved into a leading integrated investment platform.

Driven by a commitment to reform and innovation, Wuxi Capital Group continues to integrate resources and refine its investment system while exploring market-oriented mechanisms. It owns or controls several key investment entities, including Jintou Capital, Guolian Industrial Investment, Guolian Capital, Huaillywood Investment, Wuxi Zhanxin and V-Capital, and maintains strategic offices in Beijing, Shanghai, Shenzhen, and Singapore.

With a long-term perspective and disciplined investment approach, the company has built a robust fund ecosystem supporting enterprises across all growth stages. Managing over RMB 300 billion in assets, it delivers tailored financial solutions for innovation and industrial growth, focusing on strategic emerging sectors such as biomedicine, artificial intelligence, integrated circuits, aerospace, advanced manufacturing, and new energy. Its self-managed funds have invested in over 1,000 enterprises, supporting the listing of more than 110 companies, including NCE Power, Angelalign, and Zhongjie Precision.

Wuxi Capital Group played a leading role in implementing the RMB 73.75 billion Phase II China State-Owned Enterprise Structural Adjustment Fund and manages a RMB 1.5 billion municipal angel investment fund, helping shape a world-class domestic equity investment ecosystem. It has also supported landmark projects such as Hua Hong (Wuxi) and Wingtech Technology, forging synergy between finance, technology, and industry. It keeps growing with its partners.

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Illumina is a global leader in DNA sequencing and array-based technologies, dedicated to improving human health by unlocking the power of the genome. Founded in 1998 and headquartered in San Diego, California, Illumina provides products and services to more than 9,500 customers worldwide. As of the end of 2025, Illumina had an active installed base of 21,000 instruments globally.

China is one of Illumina's most important markets globally. Since entering the China market in 2005, Illumina has continued to strengthen its commitment to China and accelerate its localization journey. In 2022, Illumina's Greater China headquarters was recognized by the Shanghai Municipal Commission of Commerce as a regional headquarters of a multinational company. In the same year, Illumina's China manufacturing site officially began operations, further demonstrating the company's determination to deepen its presence in the China market and its confidence in continually upgrading its localization footprint. In 2023, with the official launch of locally manufactured sequencers and reagents, Illumina took an even more substantial step forward in its development in China. In 2025, Illumina established a Beijing Customer Engagement Center and launched its official e-commerce platform, Myllumina, creating a closed-loop omnichannel service model to provide local customers with high-quality services and products. In 2026, Illumina introduced the Illumina Bioinformatics Mobile Workstation, a mobile deployment model designed to bring DRAGEN™-powered high-performance computing closer to where research is conducted.

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Bredis Healthcare is a leading biomarker-focused clinical laboratory and translational research company specializing in ultrasensitive immunoassays, proteomics, and multimodal biomarker research. Operating under GCLP-compliant quality systems, Bredis supports biomarker discovery, ICH guideline-compliant clinical trials, precision medicine, and global multicenter studies in neurodegenerative diseases, CNS disorders, inflammation, oncology, and aging.

Founded in 2023, Bredis has rapidly become Asia's leading laboratory for blood-based biomarkers of neurodegenerative diseases and serves as the exclusive biomarker analysis partner for the GARD cohort, Asia's largest longitudinal dementia and healthy aging cohort. The company collaborates extensively with academic institutions, hospitals, pharmaceutical companies, and biotechnology partners across Asia.

Its GCLP-certified cleanroom laboratory operates both the Alamar ARGO HT and Quanterix Simoa HD-X platforms, offering more than 580 protein biomarkers, including pTau217, eMTBR-tau, GFAP, NFL, inflammatory proteins, oncology markers, and multiplex proteomics panels. Bredis also provides custom assay development, IVD commercialization support, and performs approximately 50,000 biomarker tests annually as Asia's first Alamar Biosciences Certified Service Provider (CSP).

Beyond laboratory services, Bredis integrates blood biomarkers with wearable-derived digital phenotyping through its AI-powered precision medicine platform. In 2026, the company established the BRAIN (Bredis Research Center for Aging and Integrated Neuroscience) with the National University of Singapore to build an Asia-wide collaborative network advancing biomarker validation, multicenter clinical research, and precision neurology.

Book a time to meet with us during the Partnership Week!

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