

NUS YONG LOO LIN SCHOOL OF MEDICINE

ZHEJIANG UNIVERSITY SCHOOL OF MEDICINE

JOINT SYMPOSIUM

AI-MEDICINE • CARDIOVASCULAR DISEASES
CAR-T • OBGYN • INFECTIOUS DISEASES

October 22nd and 23rd, 2026

Bridge+ at Geneo

1A Science Park Drive, Singapore 119314

Programme Booklet

Co-organised by:



Yong Loo Lin
School of Medicine



浙江大学 医学院
SCHOOL OF MEDICINE
ZHEJIANG UNIVERSITY

NUS YONG LOO LIN SCHOOL OF MEDICINE
ZHEJIANG UNIVERSITY SCHOOL OF MEDICINE

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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.

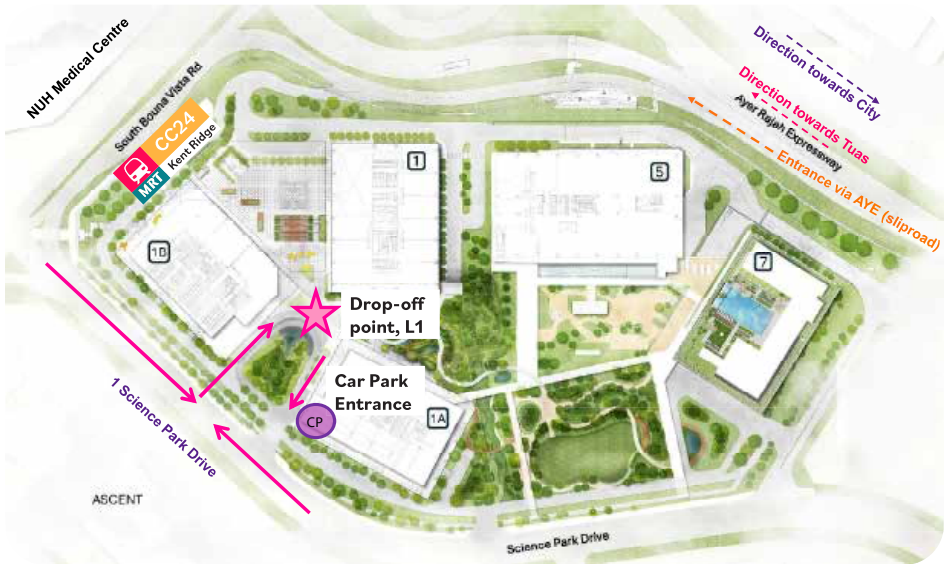
Warm regards,

Chong Yap Seng

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

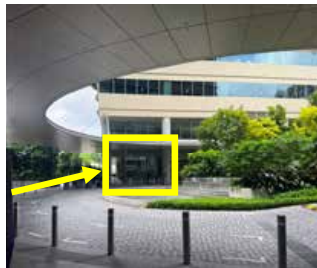


EVENT VENUE

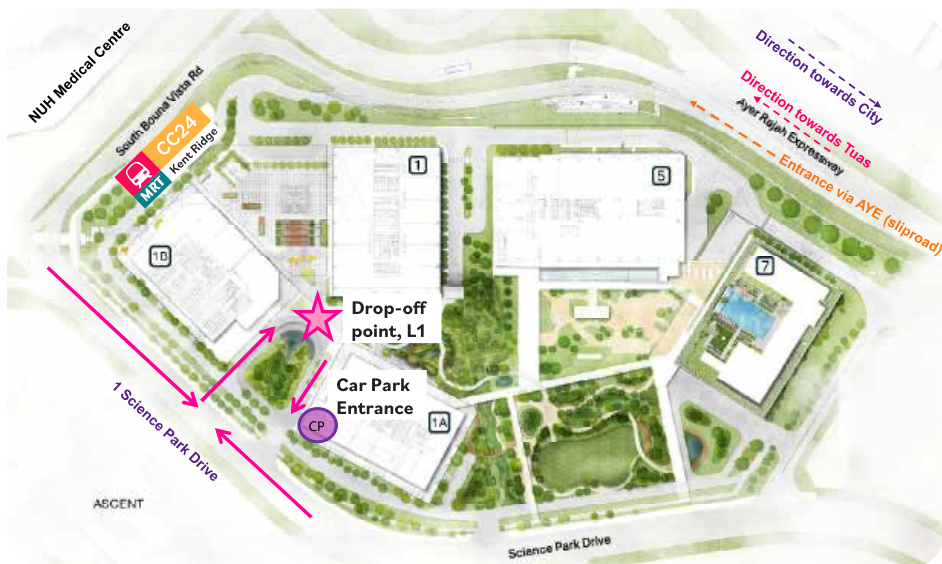


BY CAR (DROP-OFF POINT)

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.

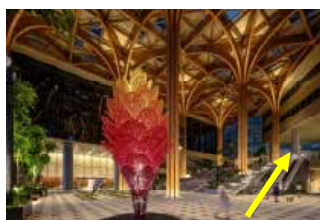


EVENT VENUE



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 – Zhejiang University School of Medicine Joint Symposium

Day 4 – 22nd October 2026, Thursday

9:00 – 9:30 Registration

Session Chair: A/Prof Catherine Ong (NUS)

- 9:30 – 9:40 Opening Address by **Professor Roger Foo**, Vice Dean (Research), NUS Yong Loo Lin School of Medicine
- 9:40 – 10:00 Opening Address by **Professor Xiaoming Li**, Vice President, Zhejiang University
- 10:00 – 10:20 Keynote Address by **Professor Xiaoming Li (ZJU)** – “*The Pathogenesis and Therapeutic Targets of Anxiety and Depression*”

Session Chair: Prof Yonghong Xiao (ZJU)

- 10:20 – 11:40 Conference Theme – CAR-T (20 mins per talk)
- **Prof Songmin Ying (ZJU)** – “*Eosinophilic Airway Inflammation and Cell Therapy*”
 - **A/Prof Zhang Yongliang (NUS)** – “*DUSP4 Regulates Anti-Tumor CD8+ T Cell Response and Improves CAR-T Performance*”
 - **Dr Guo Xin (ZJU)** – “*CAR-T Cell Therapy in AL or MM: Experience and Exploration from Bone Marrow Transplantation Center in Hangzhou*”
 - **Prof Paul Macary (NUS)** – Title to be confirmed
- 11:40 – 12:10 Tea Break

CONFERENCE PROGRAMME

NUS Yong Loo Lin School of Medicine – Zhejiang University School of Medicine Joint Symposium

Day 4 - 22nd October 2026, Thursday

Session Chair: A/Prof Zhang Yongliang (NUS)

12:10 – 13:30 Conference Theme – AI Medicine (20 mins per talk)

- A/Prof Juan Helen Zhou (NUS) – *“Multimodal Brain Foundation Model for Precision Neurology and Psychiatry”*
- Dr Qifeng Zhu (ZJU) – *“Artificial Intelligence on Valvular Heart Disease Screening, Diagnosis and Treatment”*
- Prof Zhengxing Huang (ZJU) – *“Studies and Applications of Artificial Intelligence in Modern Healthcare”*
- Asst. Prof Liu Dianbo (NUS) – *“AI-Generated Data Contamination Erodes Pathological Variability and Diagnostic Reliability”*

13:30 – 14:30 Lunch

CONFERENCE PROGRAMME

NUS Yong Loo Lin School of Medicine – Zhejiang University School of Medicine Joint Symposium

Day 4 - 22nd October 2026, Thursday

Session Chair: Prof Shu Ye (NUS)

14:30 – 15:50 Conference Theme – Infectious Disease (20 mins per talk)

- A/Prof Catherine Ong (NUS) – *“Mitigating Tissue Destruction in Tuberculosis”*
- Dr Qixia Luo (ZJU) – *“From Multidrug-Resistant to Hypervirulent: Population Dynamics of Acinetobacter baumannii and the Role of a Novel Transcriptional Regulator”*
- Asst. Prof Yassine Cherrak (NUS) – *“Bacterial Competition in the Gut: Lessons from a Commensal”*
- Prof Yonghong Xiao (ZJU) – *“Infectious Diseases Research at ZJU”*

15:50 – 16:20 Tea Break

Session Chair: Prof Shu Ye (NUS)

16:20 – 17:00 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 – Zhejiang University School of Medicine Joint Symposium

Day 5 – 23rd October 2026, Friday

9:00 – 9:30 Registration

Session Chair: Prof Jinglan Zhang (ZJU)

- 9:30 – 11:10 Conference Theme – Cardiovascular Diseases (20 mins per talk)
- Prof Xianbao Liu (ZJU) – “Basic and Translational Research on Valvular Heart Disease”
 - Prof Shu Ye (NUS) – “Leveraging Functional Genomics to Discover Pleiotropic Genes for Vascular Diseases”
 - Asst. Prof Yu Haojie (NUS) – “Genome-scale CRISPR Screening for LDLR-independent Pathways Regulating LDL Uptake”
 - Prof Jinghai Chen (ZJU) – “Mitochondrial Protein Translation in Cardiac Disease and Regeneration”
 - Asst. Prof Jiong-Wei Wang (NUS) – “Targeted Inhibition of Ceramide Production in Cardiometabolic Diseases”

11:10 – 11:30 Tea Break

CONFERENCE PROGRAMME

NUS Yong Loo Lin School of Medicine – Zhejiang University School of Medicine Joint Symposium

Day 5 – 23rd October 2026, Friday

Session Chair: Prof Xianbao Liu (ZJU)

- | | |
|---------------|--|
| 11:30 – 13:10 | <p>Conference Theme- Women's Health (20 mins per talk)</p> <ul style="list-style-type: none">• Prof Johan Gunnar Eriksson (NUS) – <i>"Biological Processes Underlying Accelerated Aging"</i>• Asst. Prof Mya Thway Tint (NUS) – <i>"Early Frailty-Related Traits in Asian Women: Evidence from Life-Course Cohorts"</i>• Dr Chuwen Ling (NUS) – <i>"Metabolomics and Microbiome in Women's Health: Insights into Cardiovascular Disorders During and Beyond Pregnancy"</i>• Prof Jinglan Zhang (ZJU) – <i>"Prenatal cfDNA Screening Beyond Copy-Number Aberrations from Monogenic Conditions to Uniparental Disomy"</i>• Dr Jiaxu Wang (ZJU) – <i>"Single-cell RNA Structuromes Reveal Regulatory Dynamics in Early Embryonic Development"</i> |
| 13:10 – 13:30 | Closing Address & Phototaking by Session Chair |
| 13:30 – 14:30 | Lunch |

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



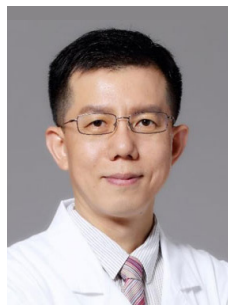
Prof Roger Foo is a graduate of the NUS Yong Loo Lin School of Medicine (Class of 1992). After completing national service, he spent 20 years overseas, receiving specialist training at King's College Hospital, London, and Addenbrooke's Hospital, University of Cambridge, before returning to Singapore 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 & KEYNOTE SPEAKER

Xiao Ming Li

- Director of the Brain Center of the Second Affiliated Hospital of Zhejiang University School of Medicine.
- Director of the Institute of Neuroscience of Zhejiang University.
- Vice President of Zhejiang University.

Zhejiang University
School of Medicine



Prof. Li has been engaged in teaching, scientific research and clinical work of mental diseases for a long time, focusing on understanding the circuit and molecular mechanisms underlying the emotions and related disorders, in identifying targets to develop therapeutic strategies for treating psychiatric disorders such as anxiety and depression disorders. He is the chief scientist of the Major Project of the National Natural Science Foundation “Mechanisms and Clinical Translation of Anxiety Disorder” and the Major Project of the Ministry of Science and Technology “Research on the Neural Circuit Mechanism of Fear Emotion”. Representative papers have been published in Cell, Nature Medicine, Nature Neuroscience, Neuron, etc. He also obtained a number of invention patents such as diagnostic kit for depression. His numerous honors include the First Prize of the Chinese Medical Science and Technology, the Tan Jiazhen Life Scientific Innovation Award, the Wu-Yang Award, and the Chinese Society for Neuroscience-CST Outstanding Neuroscientist Award.

Title of the Talk:

The Pathogenesis and Therapeutic Targets of Anxiety and Depression

ABSTRACT:

This study examined how negative stressors engage amygdala circuits to drive anxiety and depression. We propose that disrupted microcircuit connectivity and functional dynamics in the amygdala lead to hyperexcitability, representing a shared neural basis of emotion disorders. We further identified cannabinoid receptor 1 (CB1R) as a critical molecular regulator of amygdala activity: deletion of CB1R in the amygdala induced anxiety- and depression-like behaviors, whereas CB1R activation produced rapid anxiolytic and antidepressant effects. To develop safer CB1R-targeted therapies, we investigated biased CB1R signaling and rationally designed G protein-biased agonists that preferentially activate G_i signaling while minimizing β -arrestin recruitment. Our lead compounds showed strong robust therapeutic efficacy, and substantially reduced adverse effects in preclinical models. These findings reveal key pathogenic mechanisms and support a new strategy for safe and rapid-acting treatments for anxiety and depression.

The background of the slide is a light blue honeycomb pattern. The hexagons are outlined in a slightly darker blue. Some hexagons are filled with a very light blue color, while others are white, creating a subtle, textured effect.

SPEAKER BIOGRAPHIES



Songmin Ying

Dr. Songmin Ying, M.D., Ph.D., is a Qiushi Distinguished Professor and Executive Dean of the Zhejiang University School of Medicine. He also serves as the Director of the Zhejiang-Denmark International Joint Laboratory for Regenerative and Aging Medicine. His research focuses on the basic and translational medicine of aging and chronic airway diseases, and has been published in *Nature*, *Vita*, *Science Immunology*, *Molecular Cell*, *Cell Research*, *Nature Cell Biology*, *Nature Chemical Biology*, *Cell Discovery*, *Cell Reports*,

Journal of Hematology & Oncology and Allergy. He has been awarded the National Science Fund for Distinguished Young Scholars and has been selected for the National Ten Thousand Talents Program.

Dr. Ying earned his Ph.D. in Biochemistry from the Technical University of Munich, Germany, and completed postdoctoral training at the University of Oxford, United Kingdom. He holds several key academic appointments, including Chair-Elect of the Respiratory Specialty Committee of the Chinese Association for Physiological Sciences (CAPS), Standing Committee Member of the Chinese Thoracic Society (CTS), and Vice Chair of the CTS Asthma Group. He is also the member of the College of Experts of the European Respiratory Society (ERS).

Title of the Talk:

Eosinophilic Airway Inflammation and Cell Therapy

ABSTRACT:

Professor Ying's team has long been dedicated to research on the pathogenesis and intervention strategies of chronic airway diseases. Their previous studies revealed the mechanism of eosinophil-driven myeloid-biased differentiation in the bone marrow hematopoietic lineage in asthma, identified a novel therapeutic target CCR1, and proposed a structure-guided anti-inflammatory small-molecule intervention strategy for asthma.

Eosinophil-mediated inflammation plays a central role in several refractory conditions, including severe asthma, hypereosinophilic syndrome (HES), and eosinophilic granulomatosis with polyangiitis (EGPA). Although biologics targeting IL-5 or its receptor (IL-5R) have been approved for clinical use, a subset of patients exhibit incomplete or inadequate responses and necessitate repeated administrations. The team has also pioneered a cytokine-anchored CAR-T therapy that enables targeted *in vivo* depletion of eosinophils. This technology has now been granted invention patents in both China and Japan, and related clinical trials have been initiated, with the initial indications focusing on patients with refractory HES and CEL.



Zhang Yongliang

Associate Professor

National University of Singapore

Department of Microbiology and Immunology, Yong Loo Lin School of Medicine

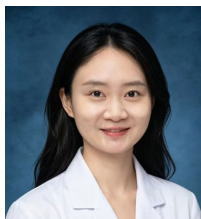
Dr Zhang Yongliang obtained his PhD in 2002 from the National University of Singapore (NUS), Singapore. He performed his postdoctoral research in the Department of Immunology, University of Washington, and the University of Texas MD Anderson Cancer Center, USA. He joined the Department of Microbiology and Immunology, Yong Loo Lin School of Medicine, National University of Singapore, as an Assistant Professor in 2009, and was promoted to Associate Professor with Tenure in 2017.

Title of the Talk:

DUSP4 Regulates Anti-Tumor CD8+ T Cell Response and Improves CAR-T Performance

ABSTRACT:

CD8+ T cells play a central role in anti-tumor immunity and are major targets of tumor immune evasion. Their functions are tightly controlled by intracellular signaling pathways, including dual-specificity phosphatases (DUSPs). However, the role of DUSP4 in tumor immunity remains poorly understood. Here, we demonstrate that DUSP4 deficiency, particularly in the hematopoietic compartment, promotes colorectal tumorigenesis in mice and that low tumor DUSP4 expression is associated with poorer survival in colorectal cancer patients. Mechanistically, DUSP4 deficiency compromises anti-tumor immunity by impairing CD8+ T cell activation, proliferation, and effector function. DUSP4 restrains ERK2-mediated KLF2 expression, thereby preventing KLF2-dependent suppression of cytotoxic gene programs. Furthermore, CRISPRa-mediated DUSP4 activation enhanced CAR-T cell proliferation and tumor-killing capacity. Higher DUSP4 expression in CAR-T cells was also associated with improved outcomes in both lymphoma and colorectal cancer patients receiving CAR-T cell therapy. Together, these findings identify the DUSP4-ERK2-KLF2 axis as a key regulator of CD8+ T cell anti-tumor immunity and suggest DUSP4 as a potential biomarker and therapeutic target for improving T cell-based cancer therapies.



Guo Xin

Attending Physician

Zhejiang University

The First Affiliated Hospital, Zhejiang University School of Medicine

Physician at The First Affiliated Hospital, Zhejiang University School of Medicine. Her research focuses on the bioinformatics and exhaustion mechanisms of CAR-T cells. Previous work has been published in Advanced Science and Molecular Therapy. She was supported by China Postdoctoral Science Foundation and participated in the project from Zhejiang Provincial Youth Natural Science Foundation. Having extensive experience in the comprehensive management of the CAR-T therapy process.

Title of the Talk:

CAR-T Cell Therapy in AL or MM: Experience and Exploration from Bone Marrow Transplantation Center in Hangzhou

ABSTRACT:

Immunotherapies, including bispecific antibodies, antibody-drug conjugates, and chimeric antigen receptor (CAR) T cells, have improved outcomes of refractory or relapsed (r/r) B-cell lymphoma and multiple myeloma. At our center, we not only use CAR-T cell therapy in relapsed and refractory B-cell lymphoma, we are also striving to use CAR-T in patients who have received fewer lines of treatment, including newly diagnosed B-ALL and MM. These patients have better preservation of immune cell function and better physical condition, and the significant role of CAR-T in clearing tumor residues may help these patients achieve better long-term survival. In addition, we are also conducting CAR-T research targeting CD7. Allogeneic CD7 CAR T cells targeting CD7-positive cancers (including T-ALL, T-LBL, and some CD7-expressing AML) have demonstrated clinical safety and efficacy. We proposed a novel "all-in-one" strategy of sequential CD7 CAR T-cell therapy and haploidentical HSCT which made it's possible for avoiding pharmacologic myeloablation or GVHD prophylaxis.



Paul MacAry

Professor

National University of Singapore

Department of Microbiology and Immunology, Yong Loo Lin School of Medicine

Professor Paul MacAry received his BSc (Hons) in Molecular Genetics from the Glasgow University in 1993 and his PhD in Immunology from GKT, University of London in 1998. He performed post-doctoral researches in the Cambridge University Institute for Medical Research (CIMR) and since 2005 has been an independent investigator in the Department of Microbiology and Immunology programme at the National University of Singapore (NUS). The multi-disciplinary research in his laboratory covers the entire spectrum of scientific endeavour, from basic research to industrial applications with an emphasis on antibody biology, immune repertoire mapping and protein engineering. His laboratory has ongoing collaborations with Roche Pharma, GlaxoSmithKline, Chugai and Becton Dickinson. Paul was a founding member and Meetings Secretary for the Singaporean Society of Immunology (SSI)-Singapore's first international learned society and the founding scientist for two biotechnology companies, BSCR LTD founded in Cambridge in 2004 and Antibody Cradle LTD founded in Singapore in 2012. His research has been featured in covering articles on the BBC and Reuters and he has published several manuscripts in top international journals including Science, Science Translational Medicine, Nature Medicine, Immunity, Hepatology, PNAS and Blood with four included in the staff of 1000.

CONFERENCE THEME

AI MEDICINE



Juan Helen Zhou

Associate Professor

National University of Singapore
Medicine

Associate Professor Juan Helen Zhou is Director of the Centre for Translational MR Research and an Associate Professor at the Centre for Sleep and Cognition, Yong Loo Lin School of Medicine, National University of Singapore, with joint appointments in Electrical and Computer Engineering at NUS and affiliations with Duke NUS Medical School. Her research focuses on selective brain network vulnerability in ageing and neuropsychiatric disorders, leveraging multimodal neuroimaging and machine learning to advance precision neurology and psychiatry. She is internationally recognised for pioneering work on the multimodal brain connectome, serves as an editor or board member for leading journals including Nature Communications Biology, eLife, Human Brain Mapping and Imaging Neuroscience. She is also an OHBM Fellow and serves on the Council, Program Committee, and Area Chair of ISMRM, OHBM, MICCAI, and KDD. She served as Treasurer of Society for Neuroscience Singapore chapter and is currently a board member of ISMRM Singapore Chapter. She has received competitive funding from Singapore's NMRC, NRF and MOE, as well as the UK Royal Society and the US NIH.

Title of the Talk:

Multimodal Brain Foundation Model for Precision Neurology and Psychiatry

ABSTRACT:

Advances in brain imaging and AI provide an unprecedented opportunity to explore the human mind and develop new approaches for treating neurological disorders. Foundation models have emerged as powerful tools for analyzing large-scale brain activity data. In this talk, I will our recent work on multimodal brain foundation models. Brain-JEPA introduces a Joint-Embedding Predictive Architecture (JEPA) for brain dynamics, which achieves outstanding performance across multiple tasks including demographic prediction, disease diagnosis, and trait prediction. We then developed Brain Harmony which aligns brain structure and function with geometrical constraints, which demonstrate superior performance in applications across neurodegenerative and neurodevelopmental disorders. Our recent work on AI-driven models for brain vision decoding will be also discussed. Moving forward, integrating AI with brain imaging paves the way for improved understanding of the human brain organization, early diagnosis and treatment strategies for neuropsychiatric disorders.

CONFERENCE THEME

AI MEDICINE



Qifeng Zhu

Secretary, State Key Laboratory of Transvascular Implantation Devices

Zhejiang University

School of Medicine/Department of Cardiology/Cardiologist

Qifeng Zhu M.D. is an Cardiologist in Department of Cardiology, the Second Affiliated Hospital of Zhejiang Univeristy School of Medicine. Graduating from the 8-year clinical program at Zhejiang University School of Medicine, he now serves as secretary at the State Key Laboratory of Transvascular Implantation Devices. Specializing in valvular heart disease and congenital heart disease, Dr. Zhu has performed over 1,000 interventional procedures. He has published more than 20 papers in top journals, such as Science Bulletin and Eurointervention. He is also dedicated to clinical application of artificial intelligence on disease screening, diagnosis and treatment.

Title of the Talk:

Artificial Intelligence on Valvular Heart Disease Screening, Diagnosis and Treatment

ABSTRACT:

In the rapidly evolving landscape of cardiovascular medicine, our team has dedicated extensive efforts to integrating Artificial Intelligence (AI) into the full spectrum of valvular heart disease management. We have moved beyond traditional methods to establish a comprehensive AI-empowered ecosystem that enhances precision at every clinical stage.

In the realm of screening and diagnosis, we utilize advanced deep learning algorithms to automate the analysis of complex multimodal imaging, such as CT. This approach significantly improves the detection accuracy of subtle valvular pathologies and enables the early identification of high-risk patients who might otherwise be overlooked. Furthermore, regarding treatment, our research focuses on leveraging AI for preoperative planning and outcome prediction. By constructing robust predictive models, we can simulate procedural outcomes for interventions like Transcatheter Aortic Valve Replacement (TAVR), allowing for personalized risk stratification and optimized device selection. These concerted efforts represent a significant leap forward in translating computational intelligence into tangible clinical benefits, ultimately improving patient prognosis and standardizing care quality.

CONFERENCE THEME

AI MEDICINE



Zhengxing Huang

Professor

Zhejiang University
College of Artificial Intelligence

Zhengxing Huang is a Professor and PhD supervisor at Zhejiang University's Institute of Artificial Intelligence. His research focuses on medical multimodal representation learning—from data to knowledge to decision-making—to transform clinical decision-making for complex diseases.

He has published over 100 papers, with 70+ as first/corresponding author in journals such as Nature Medicine, NEJM AI, Science Advances, Nature Communications, and conferences including AAAI and MICCAI. His work has been positively cited in Nature, Nature Medicine, and clinical expert consensus.

He serves as a board member of the Chinese Information Processing Society, Vice Chair of its Medical Health Committee, and is the only Chinese scholar on the Board of Directors of the Society for Artificial Intelligence in Medicine (AIME). He is Co-Editor-in-Chief of Artificial Intelligence in Medicine and serves on six editorial boards, including npj Digital Medicine. He is listed in Stanford/Elsevier's "World's Top 2% Scientist" (2025). As a core team member, he has received three first-class provincial/ministerial awards: Military Science and Technology Progress, Electronics Institute Science Progress, and Higher Education Outstanding Research Achievement.

Title of the Talk:

Studies and Applications of Artificial Intelligence in Modern Healthcare

ABSTRACT:

This report outlines the evolution of medical AI technologies, characterized by knowledge-guided and data-driven approaches. It highlights representative work and key achievements in areas such as assisted diagnosis and health management, analyzing how these technologies empower and reshape the agents and models of clinical decision-making. Furthermore, it delves into critical challenges currently faced, including reliability and ethical compliance, as well as future directions for development.

CONFERENCE THEME

AI MEDICINE



Dianbo Liu

Assistant Professor

National University of Singapore
Medicine

Dianbo Liu is assistant professor at NUS, leading the Artificial Scientific Intelligence Lab. Before starting the Artificial Scientific Intelligence Lab, Dianbo Liu was a group leader at the Broad Institute of MIT and Harvard. Prior to the Broad Institute, Dianbo worked as a postdoctoral researcher with Prof. Yoshua Bengio (a Turing Award winner) and led the Humanitarian AI team at the Mila-Quebec AI Institute. This followed his fellowship training and studies in medical informatics at Harvard Medical School. Dianbo earned his PhD from the University of Dundee, Scotland, under the supervision of particle physicist Prof. Timothea Newman. During his doctoral studies, he received the Vest Principal Scholarship from the Massachusetts Institute of Technology (MIT) and was a special graduate student at the MIT Computer Science and Artificial Intelligence Lab. Dianbo also co-founded two start-ups, GeneTank and SecureAILabs, to advance AI applications in sciences during his training.

Title of the Talk:

AI-Generated Data Contamination Erodes Pathological Variability and Diagnostic Reliability

ABSTRACT:

Generative artificial intelligence (AI) is rapidly populating medical records with AI-generated content, creating a feedback loop in which future models risk training on uncured AI outputs. The clinical consequences of this contamination remain unexplored. Here we show that, without mandatory human verification, recursive training erodes pathological variability and diagnostic reliability of medical data at population scale. Three prospective studies in real clinical settings, together with computational experiments spanning >300,000 synthetic data points across clinical text, vision-language reporting, and medical image synthesis, reveal progressive loss of clinically important information across architectures, parameter scales, and data volumes. Less common clinical concepts collapse first and most steeply; degradation reflects erosion of patient-specific content rather than benign standardization of terminology, and can be masked by widely used surface-level metrics. Physician review confirms that AI-generated documentation becomes clinically unreliable within a few cycles. We systematically evaluate five mitigation strategies that can be integrated into existing clinical workflows, finding that none fully eliminates degradation of medical information, while real-data mixing and high-effort physician editing meaningfully preserve diversity. Ultimately, our results suggest that without policy-mandated data provenance and human oversight, the deployment of generative AI threatens to degrade the very healthcare data ecosystems it relies upon.

CONFERENCE THEME

INFECTIOUS DISEASE



Catherine W.M. Ong

- Assistant Dean for Research, NUS Medicine
- Head, NUHS Clinician-Scientist Academy
- Associate Professor (Tenured)
- Senior Consultant, Division of Infectious Diseases, NUH

National University of Singapore
Yong Loo Lin School of Medicine/Medicine

Catherine W.M. Ong MBBS, MRCP(UK), MMed (Int Med), PhD, FAMS, FRCP is a tenured Associate Professor in the NUS Department of Medicine, Assistant Dean for Research in NUS Medicine, Head of the NUHS Clinician-Scientist Academy, Principal Investigator in iHealthtech, and Senior Consultant in Infectious Diseases at NUH. She is also a Visiting Consultant at Singapore's National Tuberculosis Care Centre, with clinical and research expertise in tuberculosis (TB).

Internationally, she serves on journal editorial boards, including as Associate Editor of the European Respiratory Journal and Deputy Editor of the International Journal of Tuberculosis and Lung Disease. She is Treasurer on the Executive Council of the ESCMID Study Group for Mycobacterial Infections, and previously held leadership roles in the Society of Infectious Disease (Singapore), Academy of Medicine Singapore, and the College of Clinician Scientists Singapore. She is an expert reviewer for major funders including the Wellcome Trust, UKRI, and ESCMID.

Dr Ong graduated from NUS Medicine (2003) and completed Infectious Diseases training and a PhD at Imperial College London (2013) on an NMRC NRF-MOH Scholarship. Her laboratory investigates TB host-pathogen interactions, biomarker discovery, and host-directed therapies through multinational trials, supported by NMRC, NCID, and NUS. Her team has received awards from ECCMID, APCCMI, and the Wellcome Trust, and she has earned major accolades including Gates Foundation and IDSA awards and multiple NMRC Clinician Scientist awards.

Title of the Talk:

Mitigating Tissue Destruction in Tuberculosis

ABSTRACT:

Tuberculosis (TB) cavities and tissue destruction are hallmarks of established TB disease, where the activity of destructive host proteases matrix metalloproteinases (MMPs) are unopposed by their specific tissue inhibitors. The role of the host immune system such as neutrophils in TB will be explored as there are evidence that these cells play both a protective role and in host-driven tissue destruction both in pulmonary and CNS-TB. Additionally, diabetes worsen tissue destruction, driven by a neutrophil hyper-inflammatory signature. Consequently, immunomodulatory therapies in preclinical studies and human clinical trials can be adjuncts to treat TB. Data from a clinical trial using MMP inhibition decreased MMPs in TB patients and decrease lung cavities. Strategies targeting MMP inhibition can improve TB-associated morbidity and mortality.

CONFERENCE THEME

INFECTIOUS DISEASE



Qixia Luo

Distinguished Research Fellow

Zhejiang University
School of Medicine

Dr. Luo has long studied the epidemiology, transmission, and mechanisms of drug resistance and virulence in clinically important pathogens. She has published over 60 research papers, including more than 20 as first or corresponding author in journals such as *Nature Communications*, *Emerging Microbes & Infections*, and *Clinical Microbiology & Infection*. One of her papers was selected as part of Taylor & Francis Group's "Top 100 Most Popular Research Papers by Chinese Scholars".

Dr. Luo serves as a member of the Infectious Diseases Physicians Branch of the Chinese Medical Doctor Association, Vice Chairman of the Youth Committee of the Branch of Bacterial Infection and Drug Resistance Prevention and Control (Zhejiang Medical Association), and Vice Chairman of the Youth Subcommittee of the Committee on Microbial Drug Resistance and Control (Zhejiang Pharmaceutical Association).

She has led 5 national level projects (including major special projects for infectious diseases and NSFC grants) and 3 provincial level projects. She was a leading expert in drafting the Expert Consensus on Diagnosis, Treatment, and Prevention of Hypervirulent Carbapenem resistant *Klebsiella pneumoniae* Infection. She also received a Second Prize of the Zhejiang Provincial Science and Technology Progress Award.

Title of the Talk:

From Multidrug-Resistant to Hypervirulent: Population Dynamics of *Acinetobacter baumannii* and the Role of a Novel Transcriptional Regulator

ABSTRACT:

Under the guidance of Professor Yonghong Xiao, Dr. Luo and their team conducted a large scale genomic surveillance of *Acinetobacter baumannii* bloodstream infections (BSIs). Over a decade, they analyzed 1,506 non repetitive BSI isolates from 76 Chinese hospitals, identifying 149 sequence types (STs) and 101 K locus (KL) types, which revealed increasing population diversity. International clone 2 (IC2) accounted for 81.74% of isolates, with ST208 rising while ST191 and ST195 declined—mirroring global trends. ST208 showed higher virulence, enhanced antibiotic resistance, greater desiccation tolerance, and more complex transmission networks, driven by genomic plasticity. These findings indicate that *A. baumannii* is evolving from a low virulence, multidrug resistant pathogen toward a more virulent one, linking this evolution to capsular types and lineage prevalence.

In parallel, the team's mechanistic work using the hypervirulent strain LAC 4 identified a novel AraC family transcriptional regulator, VirS. They demonstrated that VirS not only auto regulates its own promoter but also directly binds the promoter of the capsular synthesis gene *wza* to modulate its transcription. Furthermore, VirS possesses a classical arabinose sensing domain and responds to L arabinose.

Together, their research reveals the emerging "high resistance and high virulence" trajectory of *A. baumannii* and provides a mechanistic link between virulence regulation and capsular expression. These findings have critical implications for infection control and public health policies.

CONFERENCE THEME

INFECTIOUS DISEASE



Yassine Cherrak

Assistant Professor

National University of Singapore

School of Medicine – Department of Microbiology & Immunology

Yassine completed his studies in Marseille, France, and got a Master's degree in Microbiology and an additional Master's degree in Biological Engineering/Biotechnology. He then pursued a PhD at the CNRS (National Center for Scientific Research) and Aix-Marseille University, working in the group of Eric Durand, a leading expert in bacterial secretion systems. During this time, Yassine became fascinated by the Type VI secretion system, a bacterial molecular device involved in bacterial competition, which he studied from both functional and structural perspectives. Afterward, Yassine decided to expand his expertise in bacterial competition to the *in vivo* context. He was awarded an EMBO Postdoctoral Fellowship and joined the group of Wolf-Dietrich Hardt at ETH Zurich in 2021, working on fascinating aspects of microbial interactions and Salmonellosis in the gut. Since 2025, Yassine joined NUS Medicine as Assistant Professor.

Title of the Talk:

Bacterial competition in the gut: lessons from a commensal

ABSTRACT:

The gut microbiota plays an essential role in human health, particularly through its ability to mitigate enteric pathogens invasion. This defence mechanism, referred to as colonization resistance, can be traced up to specific protective commensal strains exerting pathogen-displacing abilities. Despite being first described in the 1950s, our comprehension of how commensal bacteria provide protection against enteric pathogens remains unclear, with only a few protective strains characterized. Recently, we isolated a murine gut *E. coli* commensal strain (*E. coli* 8178) displaying a striking ability to eliminate *Salmonella enterica* serovar Typhimurium, a leading cause of gastroenteritis worldwide, in a Salmonellosis mouse model. Combining *in vitro* and *in vivo* approaches, we deciphered the molecular mechanism driving pathogen exclusion by *E. coli* 8178, while uncovering novel principles of bacterial competition in the gut. In addition to enhancing our understanding of bacterial antagonistic relationships, our work illuminated the contribution of the host and diet to pathogen displacement by protective commensals, opening exciting novel research avenues at the interface between the host, diet and microbiota-mediated colonization resistance.

CONFERENCE THEME

INFECTIOUS DISEASE



Yonghong Xiao

Professor

Zhejiang University
School of Medicine

Yonghong Xiao. Professor, PI, Vice-director, State Key Laboratory of Diagnosis & Treatment of Infectious Diseases, 1st Affiliated Hospital, School of Medicine, Zhejiang University.

Professor Xiao's major interesting includes infectious diseases, basic and clinical researches in antimicrobial agents, bacterial resistant surveillance and mechanisms, clinical pharmacology and rational use of antibiotics.

He is the founder & leader of MOH national antibacterial resistant investigation net. He conducted many international collaborative projects in AMR surveillance and control, which included Sweden, Great Britain, The Netherlands, EU and WPRO etc. He conducted the first One-Health AMR containment program in China in 2015. He holds many positions in societies and associations both in domestic and international, such as Chinese Society of Preventive Medicine, Chinese Medical Association, Chinese Medical Doctor Society.

Up to now, Professor Xiao completed more than 30 national and international funded studies and over 50 clinical trials of new antimicrobial agents. More than 500 peer-review papers and 30 books and chapters were published.

Title of the Talk:

Infectious Diseases Researches in ZJU

ABSTRACT:

Zhejiang University (ZJU) has China's first-class infectious diseases research system and talent team, including relevant research achievements from basic to clinical. ZJU established China's first national key laboratory for infectious diseases in 2007. The laboratory is composed of research and clinical sections. It is mainly engaged in basic and clinical research on classical infectious diseases and emerging infectious diseases. The main research contents include viral infection, severe liver disease and artificial liver support, HIV and AIDS, bacterial resistance and anti-infection therapy, human microbiome, emerging infections (such as influenza, COVID-19, etc.). It has made outstanding achievements in epidemiology, pathogen discovery and pathogenesis, diagnostic technology and clinical management, especially in the treatment of severe diseases such as H7N9 avian influenza and COVID-19. For example, we explored the panoramic structure of COVID-19 virus, cytokine storm, micro-ecological disturbance and the pathogenesis of severe infections, and the application of novel measures such as early anti-virus combining with elimination of cytokine storm. The patient fatality rate of severely infection is lower than those of other centers.

CONFERENCE THEME

CARDIOVASCULAR DISEASES



Xianbao Liu

Vice Dean, Zhejiang University School of Medicine

Zhejiang University
School of Medicine/Department of Cardiology

Xianbao Liu, M.D., Ph.D. is Professor and Vice Dean of Zhejiang University School of Medicine, and Vice Dean of the Cardiovascular and Cerebrovascular Disease Hospital at the Second Affiliated Hospital of Zhejiang University (SAHZU), Hangzhou, China.

His clinical expertise focuses on valvular heart disease. Under the mentorship of Academician Jian'an Wang, he has provided on-site guidance to 13 medical centers in Europe, South America, and Asia, as well as 27 provinces in China. Dr. Liu's research addresses key challenges in valvular heart disease through an integrated bench-to-bedside approach. He was instrumental in developing China's first retrievable VenusA-Plus valve and the DragonFly™ transcatheter mitral repair system. He conducted a full-spectrum study from procedural strategy (Tailor TAVR trial), procedural approach (Single-closure trail), to patient follow-up (SMART TAVR trail).

Dr. Liu has published over 80 papers in journals including Circulation, JACC, Nature Communications, and Science Bulletin. He holds 20 authorized invention patents and has received two Second Prizes of the Chinese Medical Science and Technology Award. He leads five projects funded by the National Natural Science Foundation of China, including the National Science Fund for Distinguished Young Scholars, and was a principal investigator of the National "863" Young Scientist Program.

Title of the Talk:

Basic and Translational Research on Valvular Heart Disease

ABSTRACT:

With the aging of the population, heart valve diseases seriously affect the health of the elderly. Focusing on critical challenges, our team conducted full-chain solution research, achieving systematic outcomes: (1) Development of new technologies, devices, and strategies: To address the complex anatomy of bicuspid aortic valve (BAV), we pioneered an expandable valve sizing technique to improve procedural success. As a core team member, we developed domestic devices including the retrievable VenusA-Plus valve and the Dragonfly repair system. For post-TAVR follow-up, we created a smartwatch-based remote monitoring model, achieving 76% early warning of out-of-hospital clinical events. (2) Revealing genetic characteristics of BAV, and elucidating novel mechanisms of CAVD: Using the largest Chinese bicuspid cohort, we identified that ADAMTS16 mutation drives raphe formation, and further demonstrated that mitochondrial damage is a key driver of valve calcification, from which potential therapeutic drugs were screened. (3) Exploring targeted drug intervention strategies to promote clinical translation for CAVD: To overcome low local drug delivery, we developed a PAR2-targeted magnetic nanocarrier, enhancing drug enrichment in calcified valves by 54.45%. Additionally, we designed a dual-network hydrogel-coated bioprosthetic valve to improve durability. This work forms a complete research chain of "technological innovation-mechanism elucidation-clinical translation".



Shu Ye

Professor

National University of Singapore

Department of Medicine

Professor Shu Ye's research focuses on the pathogenesis and treatment of cardiovascular diseases, with particular emphasis on coronary heart disease. His recent work seeks to uncover how genetic variation influences susceptibility to cardiovascular conditions and to identify novel targets for therapeutic intervention.

He received his MD from Sun Yat-sen University of Medical Sciences in 1992 and his PhD from University College London in 1996. He then worked as a British Heart Foundation Research Fellow at the University of Oxford, before taking up academic positions at the University of Southampton. He later became Professor at Queen Mary University of London and subsequently at the University of Leicester. Since 2022, he has been serving as Research Professor at the National University of Singapore.

Title of the Talk:

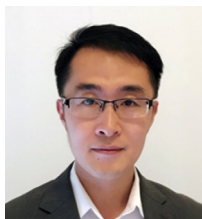
Leveraging Functional Genomics to Discover Pleiotropic Genes for Vascular Diseases

ABSTRACT:

Several vascular diseases including coronary artery disease, hypertension, stroke, and abdominal aortic aneurysm, have significant genetic underpinnings. Genome-wide association studies have unveiled many genetic loci associated with one or more of these diseases. However, the causative genes at most of these loci are yet to be determined, which hampers the translation of the genetic findings into a better understanding of the disease mechanisms and the identification of new therapeutic targets. In an integrative functional genomics analysis of these loci, we identify a panel of likely causal genes, some of which are pleiotropic for more than one of these vascular diseases. Pooled CRISPR knockout screen analyses of these likely causal genes indicate that many of them influence vascular smooth muscle cell behavior, and validation experiments of selected genes confirm that FES, BCAR1, CARF and SMARCA4 exert such effects. Animal model studies show that Fes knockout promotes atherosclerosis and raises blood pressure whilst Smarca4 knockout reduces atherosclerosis and aortic aneurysm formation. These findings provide an insight into the genetic basis of vascular diseases and inform targets for therapeutic development.

CONFERENCE THEME

CARDIOVASCULAR DISEASES



Haojie Yu

Assistant Professor

National University of Singapore
Yong Loo Lin School of Medicine/ Biochemistry

Dr. Haojie Yu obtained his PhD in Molecular Biology from Nanyang Technological University, Singapore, followed by postdoctoral training at Harvard University, where he worked on the genetics and biology of metabolic diseases. Dr. Yu joined the National University of Singapore in 2020 and is currently an Assistant Professor in the Department of Biochemistry, Yong Loo Lin School of Medicine.

His research aims to discover novel therapeutic strategies for cardiometabolic diseases, including atherosclerotic coronary artery disease, obesity, and metabolic dysfunction-associated steatohepatitis. His group combines human genetics, functional genomics, CRISPR/Cas9-based screening, computational biology, and preclinical animal models to identify disease-causal genes and pathways. Dr. Yu has received several research awards, including the Elaine W. Raines Early Career Investigator Award from the American Heart Association and the Distinguished Research Award from Harvard Medical School.

Title of the Talk:

Genome-Scale CRISPR Screening for LDLR-Independent Pathways Regulating LDL Uptake

ABSTRACT:

Atherosclerotic cardiovascular disease remains the leading cause of mortality worldwide. Although LDL receptor-mediated clearance is the dominant pathway for plasma LDL removal, clinical and experimental observations suggest that hepatocytes retain substantial capacity to bind and internalize LDL even in the absence of functional LDLR. This indicates the existence of LDLR-independent pathways that may be therapeutically exploitable, particularly for homozygous familial hypercholesterolemia and other conditions in which LDLR function is severely impaired.

To systematically define the genetic architecture of LDLR-independent LDL uptake, we performed an unbiased genome-scale CRISPR knockout screen in LDLR-deficient human hepatocytes and identified hundreds of genes whose disruption significantly altered LDL uptake. By integrating these functional screening results with rare coding variant analysis from large-scale human exome sequencing datasets, we further prioritized candidate regulators with potential causal relevance to circulating LDL cholesterol levels.

Subsequent functional validation revealed multiple previously unrecognized pathways that regulate LDL uptake, plasma cholesterol, and atherosclerosis under LDLR-deficient conditions. Together, this work establishes a genome-scale framework for discovering LDLR-independent mechanisms of lipoprotein clearance and highlights new therapeutic opportunities for severe hypercholesterolemia and atherosclerotic cardiovascular disease.



Jinghai Chen

Professor

Zhejiang University
School of Medicine

Dr. Jinghai Chen obtained his PhD in Biochemistry and Molecular Biology from Peking Union Medical College, in 2006. After post-doctoral training at Sanford Research/University of South Dakota and Boston Children's Hospital/Harvard Medical School (2007-2011), Dr. Chen took an Instructor position at Harvard Medical School from 2011 to 2015. Since 2015, Dr. Chen is a Principal Investigator at Institute of Translational Medicine, Zhejiang University and he has a joint appointment at the Second Affiliated Hospital of Zhejiang University School of Medicine.

Dr. Chen's research focuses on the molecular mechanisms that regulate cardiac remodeling and regeneration in heart diseases. He has made contributions to understanding how mammalian hearts regain regenerative capacity after injury, particularly through studies on mitochondrial protein translation and RNA-mediated cardiac repair. His research integrates RNA regulation, mitochondrial biology, and regenerative medicine to develop innovative therapeutic strategies for myocardial infarction and heart failure.

Title of the Talk:

Mitochondrial Protein Translation in Cardiac Disease and Regeneration

ABSTRACT:

We identified MRPS5, a mitochondrial ribosomal protein, as a critical regulator of cardiac metabolic homeostasis. Cardiomyocyte-specific deletion of *Mrps5* caused severe cardiac hypertrophy, heart failure, and embryonic lethality. Mechanistically, MRPS5 deficiency disrupted mitochondrial cristae structure, impaired oxidative phosphorylation, and reduced ATP production. The study further demonstrated that mitochondrial translation defects reprogram nuclear gene expression through the L-phenylalanine/c-Myc/KLF15 signaling axis, establishing a novel mechanism of mito-nuclear communication in the heart. Importantly, restoration of KLF15 partially rescued the metabolic and functional defects.

Unexpectedly, knocking down of MRPS5, which reduces mitochondrial protein translation, promotes cardiomyocyte proliferation and heart regeneration post myocardial infarction. Mechanistically, partial inhibition of MRPS5 activated mitochondrial stress response and integrated stress response pathways, leading to ATF4-dependent transcriptional programs that promoted cardiomyocyte cell-cycle re-entry and enhanced cardiac repair after myocardial infarction. This work demonstrated that controlled suppression of mitochondrial protein translation can stimulate adult heart regeneration, identifying mitochondria not only as energy producers but also as signaling hubs that regulate cardiac regenerative capacity.



Jiong-Wei Wang

Assistant Professor

National University of Singapore

Yong Loo Lin School of Medicine/ Surgery & Physiology

Dr Jiong-Wei Wang is an Assistant Professor at the National University of Singapore (NUS) Yong Loo Lin School of Medicine, Department of Surgery, with joint appointments in the Department of Physiology and the Cardiovascular Research Institute. He received his PhD in Medicine from Leiden University Medical Center (The Netherlands) and obtained postdoctoral training at University Medical Center Utrecht and NUS. His research focuses on cardiovascular immunology and the preclinical development of nanomedicine using natural and synthetic nanoparticulate systems for the treatment of cardiovascular and metabolic diseases. Dr Wang has authored more than 110 peer-reviewed publications and holds an h-index of 43. His work has been supported by competitive funding from the Singapore Ministry of Health, Ministry of Education, and NUS. His teaching and research contributions have been recognized by multiple awards, including the Wong Hock Boon Society-Singapore Medical Association (SMA) Charity Fund Outstanding Mentor Award (2019), the NUS Yong Loo Lin School of Medicine Young Researcher of the Year Award (2023), and the Research Excellence Award (2026).

Title of the Talk:

Targeted Inhibition of Ceramide Production in Cardiometabolic Diseases

ABSTRACT:

Ceramides have emerged as central drivers of cardiometabolic disease, linking disordered metabolism to tissue injury in fatty liver disease, atherosclerosis, and heart failure. Our studies in both patients and animal models show that de novo ceramide synthesis is consistently and markedly elevated across these conditions, highlighting ceramide overproduction as a unifying pathogenic mechanism. Yet, because ceramides also serve essential physiological functions, effective therapy requires precise, tissue-selective intervention rather than systemic blockade. To meet this challenge, we developed targeted nanomedicine platforms delivering RNA therapeutics or small-molecule inhibitors to suppress ceramide production selectively in hepatocytes, atherosclerotic plaques, and injured cardiomyocytes. In preclinical models, this approach produced robust therapeutic benefits while minimizing off-target adverse effects. These findings establish targeted ceramide inhibition as a powerful and versatile strategy for treating cardiometabolic disease and position nanomedicine-enabled ceramide modulation as a promising new therapeutic paradigm. This talk will highlight the mechanistic basis of ceramide-driven pathology, the design of disease-targeted nanomedicines, and the translational potential of precision lipid modulation in cardiovascular and metabolic medicine.

CONFERENCE THEME

WOMEN'S HEALTH



Johan Gunnar Eriksson

Professor and Chair

National University of Singapore

Dept of Obstetrics & Gynaecology and Human Potential TRP

Professor Johan Eriksson is Chair of the Human Potential Translational Research Programme at the National University of Singapore Yong Loo Lin School of Medicine and Executive Director of the Institute for Human Development and Potential (IHDP) at A*STAR. He leads the scientific oversight of the GUSTO and S-PRESTO birth cohort studies, two of Singapore's flagship life-course research programmes.

Prior to moving to Singapore, Professor Eriksson was Professor of Medicine at the University of Helsinki and Chief Physician at Helsinki University Central Hospital. A physician specialising in internal medicine and general practice, his research has focused on diabetes, obesity, and metabolic diseases, with particular emphasis on the developmental origins of health and disease and the prevention of gestational and type 2 diabetes through lifestyle interventions. He also leads the Helsinki Birth Cohort Study, which has followed more than 20,000 individuals from birth into older age. His work has contributed to landmark clinical trials demonstrating the effectiveness of lifestyle interventions in preventing gestational and type 2 diabetes.

Professor Eriksson has been recognised among Stanford University's top 2% most-cited scientists in both 2023 and 2024. He has co-authored several books, published more than 1,000 peer-reviewed research articles, and has an h-index of 161.

Title of the Talk:

Biological Processes Underlying Accelerated Aging

ABSTRACT:

The biological processes underlying accelerated aging was explored in Asian women of reproductive age from the Singapore Preconception Study of Long-Term Maternal and Child Outcomes (S-PRESTO). Using Phenotypic Age Acceleration – a measure of biological age derived from nine routine clinical biomarkers – we integrated clinical, nutritional, metabolomic, lipidomic, genetic, and gut microbiome data to identify factors associated with accelerated biological aging.

Higher biological age was strongly associated with greater adiposity, poorer glucose regulation, increased saturated fatty acids, inflammatory biomarkers, and altered insulin-like growth factor signalling. Conversely, higher diet quality, healthier lipid profiles, greater concentrations of several vitamins (including vitamin A and vitamin B6), beneficial amino acids, and higher insulin-like growth factors were associated with slower biological aging. We also identified 132 lipid species, several gut microbial taxa, and genetic variants linked to PhenoAgeAccel, with network analyses revealing complex interactions between metabolism, inflammation, adiposity, nutrition, and the gut microbiome.

Overall, this is the first comprehensive multi-omics study of biological aging in young Asian women. The findings suggest that accelerated aging begins well before old age and is influenced by modifiable lifestyle and metabolic factors, highlighting opportunities for early prevention strategies aimed at extending healthy lifespan and reducing future risk of chronic diseases.

CONFERENCE THEME

WOMEN'S HEALTH



Mya Thway Tint

Adjunct Assistant Professor

National University of Singapore
Yong Loo Lin School of Medicine

Mya Thway Tint is a Principal Scientist at Institute for Human Development and Potential (IHDP), Agency for Science, Technology and Research (A*STAR) and an adjunct assistant professor at Human Potential Translational Research Program, NUS Yong Loo Lin School of Medicine, Singapore.

Her expertise is in advanced body-composition assessment using criterion methods such as air displacement plethysmography, magnetic resonance imaging (MRI), and quantitative magnetic resonance technology.

Her research adopts a life-course approach to understanding body composition, spanning early development to adult phenotypes. Her work examines how developmental factors shape offspring's obesity and metabolic risk leveraging Singapore's major longitudinal birth cohorts; GUSTO and S-PRESTO.

A key focus of her research is musculoskeletal health across the life course, with a particular emphasis on identifying early, silent phenotypes that predispose individuals to later musculoskeletal disorders. Her research aims to transform musculoskeletal healthcare from its current reactive model into a proactive, preventive life course approach.

In 2021, she received the NMRC Young Individual Research Grant to study the impact of adiposity, low muscle mass and metabolic health on bone health in young women.

Her aspiration is to prevent sarcopenia, frailty, and related comorbidities through early risk profiling, systematic screening, and develop tailored intervention strategies.

Title of the Talk:

Early Frailty-Related Traits in Asian Women: Evidence from a Life-Course Cohorts

ABSTRACT:

Musculoskeletal (MSK) disorders are a major contributor to disability and healthy life-years lost worldwide, yet current approaches remain largely reactive and focused on older adults. This presentation highlights evidence from Singapore's longitudinal life-course cohorts, Growing Up in Singapore Towards Healthy Outcomes (GUSTO) and the Singapore Preconception Study of Long-Term Maternal and Child Outcomes (S-PRESTO), demonstrating that frailty-related musculoskeletal risk traits based on body composition emerge decades before clinical conditions become apparent. Only 20–30% of women exhibited a healthy body composition profile, while approximately one-quarter demonstrated sarcopenic or sarcopenic obese phenotypes. These phenotypes were associated with lower bone mineral density, poorer muscle function, greater visceral adiposity, and lower cognitive performance. Longitudinal analyses further revealed transitions from healthier phenotypes to more compromised states during early midlife, indicating silent progression of musculoskeletal decline. Ethnic heterogeneity in phenotype distribution was also observed, underscoring the importance of precision prevention strategies. Modifiable lifestyle factors, particularly physical activity and suboptimal dietary patterns were identified as potential intervention targets. These findings support a paradigm shift from reactive care to proactive, life-course musculoskeletal prevention to promote healthy longevity.

CONFERENCE THEME

WOMEN'S HEALTH



Chuwen Ling

Research Fellow, Global Centre for Asian Women's Health (GloW)

National University of Singapore

Yong Loo Lin School of Medicine, Global Center for Asian Women's Health

Chuwen Ling is a Research Fellow at the Global Centre for Asian Women's Health (GloW) and Department of Obstetrics & Gynaecology, Yong Loo Lin School of Medicine, National University of Singapore, under the mentorship of Professor Cuilin Zhang. She holds an MD and a PhD in Epidemiology and Health Statistics. Prior to her research career, she practised as a physician specialising in clinical nutrition in a hospital setting. She now specialises in multi-omics approaches – integrating metabolomics, gut microbiome profiling, and nutritional epidemiology – to understand cardiometabolic risks in women across the life course which include, but not limited to hypertensive disorders of pregnancy, gestational diabetes, and CVD risk among non-pregnant individuals. Her work aims to translate nutritional and multi-omics insights into modifiable, precision prevention strategies for women's cardiometabolic health.

Title of the Talk:

Metabolomics and Microbiome in Women's Health: Insights into Cardiovascular Disorders During and Beyond Pregnancy

ABSTRACT:

For women, cardiovascular disease (CVD) remain the leading cause of death globally. Pregnancy, a natural cardiometabolic stress test, offers a unique window into future CVD risk. This talk highlights multi-omics research integrating gut microbiome profiling and metabolomics across women's life course.

In a prospective Chinese cohort, we identified microbiome-related serum metabolites associated with carotid atherosclerotic plaque risk, supporting their potential as early CVD biomarkers (Ling CW et al., eBioMedicine, 2024). In a multi-racial pregnancy cohort, global metabolomic profiling using blood samples collected in early pregnancy, identified unique metabolic signatures preceding preeclampsia and gestational hypertension. Further, a biomarker model that predicted GDM with high accuracy at 10–14 gestational weeks (Yang J et al., BMC Medicine, 2025).

These findings support the promise of multi-omics approaches for early prediction and precision prevention of cardiometabolic disorders among women over life course.

CONFERENCE THEME

WOMEN'S HEALTH



Jinglan Zhang

Professor

Zhejiang University
School of Medicine

Dr. Jinglan Zhang's research focuses on advancing diagnostic methodologies for human genetic diseases and elucidating their underlying molecular mechanisms. He has pioneered a range of innovative genomic and biochemical approaches, including population-based carrier screening, newborn screening and diagnostic testing for inborn errors of metabolism, precision medicine assays for chronic kidney disease, and hereditary cancer testing panels. More recently, Dr. Zhang led the development of population-based non-invasive prenatal screening (NIPS) for monogenic disorders, a major advancement that has been adopted by clinical laboratories worldwide. His work has significantly expanded the clinical applications of genomic medicine and improved access to early, accurate genetic diagnosis across diverse patient populations.

Title of the Talk:

Prenatal cfDNA Screening Beyond Copy-Number Aberrations from Monogenic Conditions to Uniparental Disomy

ABSTRACT:

Prenatal cell-free DNA (cfDNA) screening has evolved from the detection of common aneuploidies to the identification of a broader spectrum of fetal genetic disorders. We developed a comprehensive next-generation prenatal screening platform based on coordinative allele-aware target enrichment sequencing (COATE-seq), enabling simultaneous assessment of chromosomal abnormalities, microdeletion syndromes, monogenic disorders, and uniparental disomy (UPD)-linked imprinting disorders from a single maternal plasma sample. By integrating copy-number analysis, pathogenic variant detection, and parental inheritance pattern analysis, this approach substantially expands the diagnostic yield of prenatal screening beyond conventional methods. Clinical studies demonstrated robust performance across multiple classes of genetic disorders and showed that many affected pregnancies, particularly those involving monogenic and imprinting disorders, lacked specific ultrasound findings or would not have been identified by standard cfDNA screening. These results support the feasibility of a unified cfDNA screening strategy capable of detecting genetic disorders arising from chromosomal, sequence-level, and parent-of-origin abnormalities, thereby broadening the scope of noninvasive prenatal genetic assessment and improving opportunities for early diagnosis, counseling, and pregnancy management.

CONFERENCE THEME

WOMEN'S HEALTH



Jiaxu Wang

Principle Investigator

Zhejiang University
School of Medicine

Jiaxu Wang has a diverse scientific background that originated from his Ph.D. training at the University of Science and Technology of China, where his research focused on the mechanisms of cell fate decisions. He began his first postdoctoral fellowship in Lawrence W. Stanton's laboratory, studying neurogenesis using single-cell technologies. In 2017, he joined Wan Yue's laboratory for his second postdoctoral fellowship, where he developed a strong interest in RNA biology and focused on investigating the roles of RNA secondary structure in different cellular systems.

In 2024, Jiaxu Wang was promoted to an independent Principal Investigator at the Genome Institute of Singapore, where his research centered on the development and application of RNA structure-based technologies. In 2025, he began a new appointment as a Principal Investigator at Zhejiang University, continuing his work on identifying RNA structure conformation at single cell level and elucidating their functions in mammalian cells and disease.

Title of the Talk:

Single-cell RNA Structuromes Reveal Regulatory Dynamics in Early Embryonic Development

ABSTRACT:

Dysregulated early embryonic development underpins obstetric complications like recurrent pregnancy loss (RPL) and preeclampsia. This study leverages single-cell RNA structuromes to uncover post-transcriptional regulatory dynamics in human embryos. We identified specific RNA secondary structure motifs critical for trophoblast differentiation and placental formation. Aberrant structural folding was significantly associated with RPL cases, indicating compromised embryonic viability. Furthermore, disrupted RNA-protein interactions correlated with inflammatory pathways in preeclamptic tissues. These findings highlight RNA structuromes as key determinants of maternal-fetal interface stability. By linking structural RNA variations to adverse pregnancy outcomes, this work offers novel diagnostic biomarkers and potential therapeutic targets for preventing early developmental failures in clinical obstetrics.

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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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