

SBS 15th Anniversary Research Day and Alumni Homecoming 2026

School of Biomedical Sciences
生物醫學學院
Faculty of Medicine, The Chinese University of Hong Kong
香港中文大學醫學院

CU Medicine
HONG KONG

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SBS 15th Anniversary: Research Day and Alumni Homecoming 2026 Organized by the School of Biomedical Sciences (SBS), CUHK

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Welcome Message from Professor Philip Chiu Wai-yan
Dean, Faculty of Medicine,
The Chinese University of Hong Kong



It is truly my pleasure to be here with you today for the opening of the SBS Research Day 2026.

This year is an important milestone for the School of Biomedical Sciences, as we celebrate its 15th anniversary. Over the past decade and a half, SBS has made remarkable progress in advancing biomedical research and education, consistently upholding excellence and innovation as its hallmarks. The SBS Research Day has been the annual flagship academic event, providing a valuable platform for PIs to present their latest discoveries, exchange ideas across disciplines, and explore new scientific frontiers together.

It is our distinct honour to welcome six distinguished investigators from world-renowned institutions, who join us today to share pioneering insights in various fields of biomedical research. They include Prof. Yaping Zhang (張亞平教授) from the Chinese Academy of Sciences, Prof. Zhimin Lu (吕志民教授) from Zhejiang University, Prof. Congying Wu (吳聰穎教授) from Peking University, Prof. Cunming Duan (段存明教授) from the University of Michigan, Prof. Greg Stuart from Monash University, and Prof. Fei Sun (孫飛教授) from Guangzhou Institutes of Biomedicine and Health.

Over the years, SBS has established a distinguished legacy of nurturing the next generation of scientific talent, fostering individuals who consistently make profound contributions to our global community. Today, it is our great pleasure to welcome back six outstanding alumni speakers. They are now driving innovation as academic faculty and researchers at leading institutions across the Chinese Mainland, Norway, Singapore, and the United States. The guest speakers' insights, combined with the active engagement of all attendees, are poised to foster in-depth dialogues and catalyse collaborative research, in turn strengthening partnerships between SBS and these esteemed institutions.

As we celebrate our milestones today, let us equally honor the spirit of curiosity, collaboration, and translational research that defines our community. I wish you all an invigorating Research Day — a fruitful occasion filled with thought-provoking discussions, groundbreaking discoveries, and enduring partnerships, while pursuing excellence in biomedical inquiry and innovation.

Once again, my sincere congratulations to SBS on its momentous 15th anniversary.

Professor Philip W. Y. Chiu
Dean, Faculty of Medicine
Shun Hing Education and Charity Fund Professor of Robotic Surgery
The Chinese University of Hong Kong

Welcome Message from Professor Andrew Chan Man-lok
Director, School of Biomedical Sciences



I am delighted to extend a warm welcome to everyone attending SBS 15th Anniversary: Research Day and Alumni Homecoming 2026. This year's Research Day holds special significance as it forms a core part of the SBS 15th Anniversary celebration programme. It is a special occasion for us to reflect on our achievements while looking ahead to future opportunities, and to bring together distinguished guests, alumni, faculty members, researchers, students and industry partners.

As mentioned by the Dean, we are honoured to have six distinguished investigators from world-renowned institutions joining us today. We are also pleased to welcome six of our alumni as speakers: Dr. Vivian HUANG, instructor at Harvard Medical School (US); Dr. Christine WONG, Assistant Professor of Metabolic Disorders at Nanyang Technological University (Singapore); Dr. Ching On WONG, Assistant Professor at Rutgers University (US); Dr. Jianzhen LI, Dean of the College of Life Sciences at Northwest Normal (China); Dr. Qi LONG, who has established his laboratory in the Joint School of Life Sciences, Guangzhou Medical University (China); and Dr. Evandro Fei FANG-STAVEM, Professor at University of Oslo (Norway). It is wonderful to see our graduates excelling across different regions and institutions. Their accomplishments reflect the strength of our BSc, MPhil-PhD, and MSc programmes, which remain committed to nurturing aspiring scientists and healthcare professionals.

I would also like to extend a warm welcome to the delegations from Peking University, led by Prof. Kong Wei, Dean of the School of Basic Medical Science; the Guangzhou Institutes of Biomedicine and Health (GIBH), led by Prof. Sun Fei, Deputy Director General; and the Kunming Institute of Zoology (KIZ), led by Prof. Shi Peng, Director. Thank you for joining us on this meaningful occasion. I hope this event will inspire new ideas, foster new connections and open doors for future collaborations.

In celebration of our 15th anniversary, we will host our first Alumni Homecoming Day tomorrow, where six graduates will share their career journeys. This will be a valuable opportunity, especially for our current students, to learn from and connect with our alumni.

Finally, I would like to express my sincere gratitude to the Organizing Committee for their dedication, as well as to our sponsoring organizations for their generous support. I wish you all a rewarding and enjoyable experience.

Andrew M. Chan
Professor and Director
School of Biomedical Sciences
Faculty of Medicine
The Chinese University of Hong Kong

SBS 15th Anniversary:
Research Day and Alumni Homecoming 2026
29-30 May 2026

Time	Title of Presentation	Speaker	
09:00-09:15	Opening Ceremony Prof. Wai Yan Philip Chiu (Dean, Faculty of Medicine, CUHK) Prof. Man Lok Andrew Chan (Director, School of Biomedical Sciences, CUHK) Photo Taking		
	SESSION 1: Moderator: Prof. Wood Yee Woody Chan		
09:15-09:45	New animal models for social and affective disorders: Insights from the convergent evolution of dogs and humans	**Prof. Yaping Zhang** (Kunming Institute of Zoology, CAS)	1
09:45-10:15	Cellular and circuit mechanisms underlying binocular vision	**Prof. Greg Stuart** (Monash University)	2
10:15-10:45	Persistent injury-induced heteroplasmic mitochondrial DNA compromise kidney function	**Dr. Huihui Huang** (Harvard Medical School)	3
10:45-11:05	Tea Break		
	SESSION 2: Moderator: Prof. Kwok Wing Stephen Tsui		
11:05-11:35	Metabolic regulation of cancer and immunity	**Prof. Zhimin Lu** (Zhejiang University)	4
11:35-12:05	Mechano-regulation of cellular organelles	**Prof. Congying Wu** (Peking University)	5
12:05-12:35	Regulation of master regulators: molecular and physiological mechanisms specifying insulin-IGF actions	**Prof. Cunming Duan** (University of Michigan)	6
12:35-14:00	Lunch		

Time	Title of Presentation	Speaker	
	SESSION 3: Moderator: Prof. Hui Zhao		
14:00-14:30	**Neutrophil 'nuclear' warfare: The critical role of NETosis in liver fibrosis and therapeutic implications**	**Prof. Siu Ling Wong** (Nanyang Technological University)	7
14:30-15:00	**Fuel metabolism in brain cells**	**Prof. Ching On Wong** (Rutgers University)	8
15:00-15:30	**From basic biomedical research to drug discovery: A case study of ovulatin, a novel peptide hormone regulating ovulation**	**Prof. Jianzhen Li** (Northwest Normal University)	9
15:30-15:50	**Tea Break**		
	SESSION 4: Moderator: Prof. Xiaoyu Tian		
15:50-16:20	**Mitochondrial transplantation and organelle therapy**	**Prof. Qi Long** (Guangzhou Medical University)	10
16:20-16:50	**Changing our nutrition and lifestyles to promote healthy longevity**	**Prof. Evandro Fei Fang-Stavem** (University of Oslo)	11
16:50-17:20	**In situ structural insights into asthenozoospermia**	**Prof. Fei Sun** (Guangzhou Institutes of Biomedicine and Health, CAS)	12
16:50-17:00	***Closing Remarks for day 1*** **Prof. Kwok Wing Stephen Tsui** **(Associate Director, School of Biomedical Sciences, CUHK)**		
18:15-21:00	***Banquet (by invitation)***		

Speaker Biography and Abstract



Professor Ya-Ping ZHANG (張亞平), PhD, is an Elected Members and Principal Investigator of the Chinese Academy of Sciences (CAS), former Vice President of CAS, Foreign Academician of European Academy of Sciences, and an Academician of Third World Academy of Sciences. He also serves as Honorary President of Yunnan University and Chairman of the China National Committee for UNESCO's Man and the Biosphere Programme. He is a recipient of the 3rd International Biodiversity Leadership Awards (the first recipient in Asia). His long-term research focuses on evolutionary genetics. He pioneered the application of adaptive evolution theory to analyze complex animal traits and, in recent years, has focused on establishing a new system of domestic dog models for social disorder diseases and new drug development. He has published over 500 SCI papers in international journals such as Science, Nature, Nat Genet, and Proc Natl Acad Sci USA, and one monograph. His awards include the Ho Leung Ho Lee Prize for Scientific and Technological Progress, and the National Natural Science Award (Second Class, 2006 and 2014). He co-initiated the International Barcode of Life Project (iBOL), making China one of its four global nodes, led the World Cold Code Project for amphibians and reptiles, co-led the Dog10K international consortium, and represented China in the Genome 10K project, generating extensive international impact.

Five recent representative publications:

1. He Y#, Zhang X#, Peng MS#, ... Rattanakrajangsri K; Consortium of Anthropological Research in Southeast Asia and Southwest China (CASEAC); Kong QP*, **Zhang YP***, Su B*. "Genome diversity and signatures of natural selection in mainland Southeast Asia." ***Nature***, 2025; 643(8071):417-426. DOI: 10.1038/s41586-025-08998-w

2. Dai SS#, Sulaiman X#, Isakova J#, Xu WF#, ..., Cheng LF*, Peng MS*,**Zhang YP***. "The genetic echo of the Tarim mummies in modern Central Asians." ***Molecular Biology and Evolution***, 2022; 39(9):msac179. DOI: 10.1093/molbev/msac179

3. Xie HB#, Yan C#, Adeola AC#, Wang K#, Huang CP#, **...,** Han JL*, Wang W*, Peng MS*, **Zhang YP*.** "African suid genomes provide insights into the local adaptation to diverse African environments." ***Molecular Biology and Evolution***, 2022; 39(12):msac256. DOI: 10.1093/molbev/msac256

4. Xie HB#*, Wang LG#, Fan CY#, Zhang LC#, Adeola CA, Yin X, Zeng ZB*, Wang LX*, **Zhang YP*.** "Genetic architecture underlying nascent speciation of Eurasian domestic pigs." ***Molecular Biology and Evolution***, 2020; 38:3556-3566 DOI: 10.1093/molbev/msab117

5. Wang MS#, Thakur M#, Peng MS#, Jiang Y#, Frantz LAF#, ..., Han JL*, Wu DD*, **Zhang YP*.** "863 genomes reveal the origin and domestication of chicken." ***Cell Research***, 2020; 38: 693-701. DOI: 10.1038/s41422-020-0349-y

Research interests / Technical expertise:

1. Establishment and application of animal models of human social disorders
2. Molecular basis of complex trait inheritance
3. Genetic breeding and new variety creation

New animal models for social and affective disorders: Insights from the convergent evolution of dogs and humans

Depression, anxiety, autism, and other social deficit disorders impose a tremendous burden on society. Current antidepressants are not only limited in efficacy but also associated with significant side effects. Our previous research has revealed convergent genetic evolution between domestic dogs (Canis familiaris) and humans during domestication, along with remarkably similar social behaviors. We therefore propose that the domestic dog represents the optimal model organism for investigating advanced human social behavior and social deficit disorders. We have established the world's first canine model of depression. This model effectively recapitulates core symptoms of human depression. Meanwhile, we are systematically developing a suite of canine disease models and a corresponding pharmacological evaluation technology platform. Utilizing this canine depression model, we have systematically evaluated the efficacy and safety of fluoxetine, ketamine, and other pharmacological agents, obtaining results that closely mirror clinical outcomes. This approach overcomes the longstanding bottleneck in mechanistic studies and drug discovery for depression and other social deficit disorders. Encouragingly, the food-derived polysaccharide LC-K11, identified and validated using this model, exhibits potent antidepressant activity, demonstrating notable efficacy even in treatment-resistant cases with no observable significant side effects. Our work establishes an effective and innovative pathway for elucidating the mechanisms underlying social deficit disorders such as depression and for accelerating the development of novel therapeutics.

Speaker Biography and Abstract



Professor Greg STUART completed a BSc (Honours in Physiology) at Monash University (Melbourne, Australia) followed by a PhD in Neuroscience at the Australian National University (Canberra, Australia). He then spent five years working at the Max Planck Institute of Medical Research in Heidelberg, Germany, in the department of Nobel Laureate Bert Sakmann. After his time in Germany he returned to the Australian National University (ANU) to establish his own research program. He was Head of the Department Neuroscience at the John Curtin School of Medical Research at the ANU from 2005 to 2012 and Head of the Eccles Institute of Neuroscience at the ANU from 2012 to 2021. He moved to the Department of Physiology at Monash University in April 2022. Professor Stuart has made seminal contributions to understanding how information is processed by individual nerve cells in the brain. He has developed and implemented techniques for making electrical recordings from the fine processes of nerve cells called dendrites. These techniques, which are used throughout the world, have led to important discoveries describing the initiation and spread of nerve impulses in different nerve cell types. His current research is focused on how individual neurons in the cortex and superior colliculus process visual information. He was appointed a Fellow of the Australian Academy of Science in 2012 in recognition of his seminal contributions to understanding how information is processed by individual nerve cells in the brain.

Five recent representative publications:

1. Honnuraiah S, Huang HH, Furlanis E, Perumal MB, Ryan WJ, Broersen R, Connelly WM, Fishell G, **Stuart GJ**. "Non-reciprocal callosal projections and input gradients underlie interhemispheric communication in binocular visual cortex." ***Cell reports***, 2026; 45, 116806.

2. Broersen R, Thompson G, Thomas F, **Stuart GJ**. "Binocular processing facilitates escape behavior through multiple pathways to the superior colliculus." ***Current Biology***, 2025; 35, 1242–1257.

3. Jiang S, Honnuraiah S, **Stuart GJ**. "Characterization of primary visual cortex input to specific cell types in the superior colliculus." ***Frontiers in Neuroanatomy***, 2023; 17:1282941. doi: 10.3389/fnana.2023.1282941.

4. Testa-Silva G, Rosier M, Honnuraiah S, Guzulaitis R, Morello Megias A, French C, King J, Drummond K, Palmer LM, **Stuart GJ**. "Higher synaptic threshold for NMDA spike generation in human neurons." ***Cell Reports***, 2022; 41 (11), 111787.

5. Gharaei S, Honnuraiah S, Arabzadeh E, **Stuart GJ**. "Superior colliculus modulates cortical coding of somatosensory information." ***Nature Communications***, 2020; 11, 1693.

Research interests / Technical expertise:

Sensory processing, single neuron computation, synaptic plasticity, electrophysiology, two-photon imaging, optogenetics

Cellular and circuit mechanisms underlying binocular vision

How the brain combines information received independently by our two eyes is not fully understood. In my presentation I will describe how information from our eyes is combined at the level of single cells in the cortex. This requires integration across the two hemispheres of the brain. I will present data describing a non-reciprocal circuit for interhemispheric communication in mouse binocular visual cortex via anatomically and functionally segregated neuronal populations. We find that callosal receiving neurons in binocular visual cortex make weak or no callosal projections, whereas callosal projecting neurons receive weak or no callosal input. Both populations receive direct input from the thalamus. These two populations had different cellular properties. Callosal receiving neurons had reduced excitability compared to callosal projecting neurons due to elevated Kv1 potassium channel expression, encoded by the Kcna2 gene. At the functional level we find that callosal receiving neurons are predominately binocular, with binocularity correlated with callosal input, whereas callosal projecting neurons are predominately monocular. In summary, we find that non-reciprocal callosal projections between callosal receiving and projecting neurons, together with differences in excitability shaped by callosal input, underlie interhemispheric communication in binocular visual cortex.

Speaker Biography and Abstract



Dr. Huihui Vivian HUANG (黄卉卉) earned her Ph.D. from The Chinese University of Hong Kong and completed her postdoctoral training at Massachusetts General Hospital and Beth Israel Deaconess Medical Center, Harvard Medical School. She is currently an Instructor at Beth Israel Deaconess Medical Center, Harvard Medical School. Her research focuses on the molecular mechanisms of chronic kidney disease, with a particular emphasis on the role of mitochondrial DNA heteroplasmy in regulating cellular metabolism and stress responses. Using multi-omics approaches, her work aims to investigate how crosstalk between mitochondrial and nuclear genomes contributes to kidney disease progression and further identify novel therapeutic strategies.

Five recent representative publications:

1. **Huang H**, Wang Y, Zsengeller ZK, Gorham JM, Vemireddy V, Clark AJ, Pan H, Dreyfuss JM, Jotwani V, Shlipak MG, Sarnak MJ, Parikh CR, Thiessen-Philbrook H, Katz R, Waikar SS, Lake NJ, Lek M, Shi W, Puiu D, Hong YS, Seidman JG, Arking DE, Parikh SM. "Reversible compromise of physiological resilience by accumulation of heteroplasmic mtDNA mutations." ***Science***, 2025; 390(6769): 164-172.

2. Zhang Y, **Huang H**, Kong Y, Xu C, Dai L, Geng X, Deng Y, Wang Y, Liu Y, Meng C, Zhang X, Li J, Qin J, Feng B, Mak KK, Wang L, Huang Y, Wang W, Lan HY, Yang B, Lu HAJ, Xia Y. "Kidney tubular transcription co-activator, Yes-associated protein 1 (YAP), controls the expression of collecting duct aquaporins and water homeostasis." ***Kidney International***, 2023; 103(3):501-513.

3. **Huang H**, Parikh SM. "Skimming the fat in diabetic kidney disease: KIM-1 and tubular fatty acid uptake." ***Kidney International***, 2021; 100(5):969-972.

4. **Huang H**, Jin W, Huang M, Capen DE, Xia Y, Paunescu TG, Lu HAJ. "Gentamicin induced acute kidney injury involves necroptosis of collecting duct principal cells and is attenuated by inhibiting necroptosis." ***Journal of the American Society of Nephrology***, 2020; 31(9):2097–2115.

5. **Huang H**, Xu C, Wang Y, Meng C, Liu W, Zhao Y, Huang XR, You W, Feng B, Zheng ZH, Huang Y, Lan HY, Qin J, Xia Y. "Lethal (3) malignant brain tumor like 2 (L3MBTL2) protects against kidney injury by inhibiting the DNA damage-p53-apoptosis pathway in renal tubular cells." ***Kidney International***, 2018; 93(4):855-870.

Research interests / Technical expertise:

My research focuses on identifying metabolic therapeutic targets for acute kidney injury (AKI) and chronic kidney disease (CKD) by integrating diverse model systems, including large-scale human datasets (e.g., UK Biobank), patient kidney biopsy samples, animal models, and cutting-edge multi-omics approaches.

My research areas include:

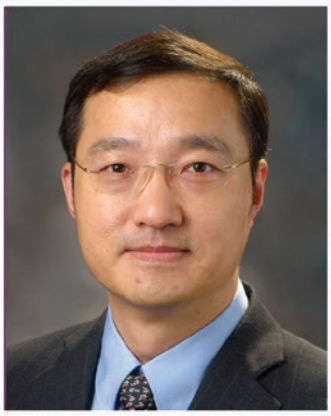
1. Mechanisms underlying AKI and CKD
2. Mitochondrial function and metabolic regulation in aging
3. Genetic risk variant–driven focal segmental glomerulosclerosis (FSGS), particularly APOL1-associated nephropathy

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Persistent injury-induced heteroplasmic mitochondrial DNA compromise kidney function

Aging is a major risk factor for compromised kidney function in both acute kidney injury (AKI) and chronic kidney disease (CKD). Somatic mitochondrial DNA (mtDNA) mutations accumulate in the kidney during aging; however, the causal link between mtDNA mutations and impaired kidney function following injury remains unclear. Here, we show that diverse transient injuries induce bursts of stochastic mtDNA mutations that persist and impair cellular and physiological resilience to subsequent acute injury. Analysis of 369,912 human genomes further demonstrates that accumulated mtDNA mutations predict the risk of acute kidney injury. Mechanistically, mtDNA mutations suppress energy-intensive nucleotide biosynthesis. Repletion of adenosine, but not other nucleotides, restores ATP levels and cellular fitness, an effect that requires the nuclear-encoded purine biosynthetic enzyme adenylate kinase 4 (AK4). Together, these findings suggest that mtDNA mutation burden reflects the cumulative impact of acute injuries in metabolically active cells, thereby impairing metabolic fitness, and highlight a potential therapeutic avenue through mitochondrial–nuclear crosstalk mediated by the regulation of purine biosynthesis.

Speaker Biography and Abstract



Professor Zhimin LU (呂志民) M.D., Ph.D., is professor and Dean of Institute of Translational Medicine and Deputy Dean of Faculty of Medicine and Pharmaceutical Sciences at Zhejiang University in China. He was recruited by Zhejiang University in 2019 after his service at MD Anderson Cancer Center for more than 16 years. He was elected as a fellow of American Association for the Advancement of Science in 2017 and a foreign member of Academia Europaea in 2021.

Prof. Lu's milestone discoveries include demonstration of the protein kinase activity of metabolic enzymes, discovery of protein phosphatase activity of metabolic enzymes, and revelation of the instrumental, non-metabolic functions of metabolic enzymes and metabolites in tumorigenesis.

He has published more than 160 research articles in top peer-reviewed journals, and about 80 of these papers, as a corresponding author, were published in *Cell, Nature, Cancer Cell, Nature Cancer, Nature Cell Biology, Cancer Discovery, Cell Metabolism, Molecular Cell, Nature Metabolism, Nature Structural and Molecular Biology, Nature Chemical Biology, Science Advances, Nature Reviews Molecular Cell Biology, Nature Reviews Cancer, Annual Review of Biochemistry, Trends in Cell Biology, Trends in Cancer,* and *Trends in Biochemical Sciences*.

Prof. Lu has received several awards, including The Chinese Medical Science and Technology Award, in 2022, Wuxi AppTec Life Science and Chemistry Outstanding Achievement Award in 2022, the Dallas/Fort Worth Living Legend Faculty Achievement Award in Basic Research in 2016, the Potu N. Rao Award for Excellence in Basic Science in 2013, the MD Anderson Faculty Scholar Award in 2011, and the Peter Steck Memorial Young Investigator Award in 2008.

Five recent representative publications:

1. Guo D, Meng, Y, Yang Q, Luo S, Jiang X, Zheng Y, Wu L, Yang Q, Li S, Jiang H, Li S, Wang Z, Li M, Wu Q, Xiao L, Zhu R, He X, Hu Y, Zhao H, Ye X, Tong Y, Fang J, Xu D, Xu J, Yuan Y, **Lu Z.** "Lactate binds and inhibits STING to promote tumor immune evasion." ***Immunity***, in press.

2. Guo D, Meng Y, Zhao G, Wu Q, **Lu Z.** "Moonlighting functions of glucose metabolic enzymes and metabolites in cancer." ***Nature Reviews Cancer***, 2025; 25(6):426-446. doi: 10.1038/s41568-025-00800-3. doi: 10.1038/s41568-025-00800-3. PMID: 40175621.

3. Zhu R, Ye X, Lu X, Xiao L, Yuan M, Zhao H, Guo D, Ying Meng Y, Han H, Luo S, Wu Q, Jiang X, Xu J, Tang Z, Tao Y, **Lu Z.** "ACSS2 acts as a lactyl-CoA synthetase and couples KAT2A to function as a lactyltransferase for histone lactylation and tumor immune evasion." ***Cell Metabolism***, 2025; 37(2):361-376.e7. doi: 10.1016/j.cmet.2024.10.015. PMID: 39561764

4. Li M, Wang Z, Tao J, Jiang H, Yang H, Guo D, Zhao H, He X, Luo S, Jiang X, Yuan L, Xiao L, He H, Yu R, Fang J, Liang T, Mao Z, Xu D, **Lu Z.** "Fructose-1,6-bisphosphatase 1 dephosphorylates and inhibits TERT for tumor suppression." ***Nature Chemical Biology***, 2024; 20(11):1505-1513. doi: 10.1038/s41589-024-01597-2. PMID: 38538923.

5. Wang, J, Yang Y, Shao F, Meng Y, Guo D, He J, **Lu Z.** "Acetate reprograms tumor metabolism and promotes PD-L1 expression and immune evasion by upregulating c-Myc." ***Nature Metabolism***, 2024. doi: 10.1038/s42255-024-01037-4. PMID: 38702440.

Research interests / Technical expertise:

1. Cancer metabolism and immune metabolism
2. Tumorigenesis and tumor progressionaches

Metabolic regulation of cancer and immunity

We elucidated instrumental mechanisms of the Warburg effect, discovered the protein kinase and phosphatase activity of metabolic enzymes, and revealed the non-metabolic functions of metabolic enzymes in tumorigenesis. (1) Our work elucidated important mechanisms underlying the RTK-promoted Warburg effect, which are regulated by nuclear function of pyruvate kinase M2 (PKM2) and mitochondrial function of phosphoglycerate kinase 1 (PGK1). (2) We discovered that metabolic enzymes (PKM2, PGK1, PCK1, HK2, PI3K, and fructokinase KHK-A) can function as protein kinases to regulates cell cycle progression, mitochondrial function, autophagy, and de novo nucleic acid synthesis. (3) We discovered for the first time that metabolic enzymes can function as protein phosphatase. Fructose-1,6-bisphosphatase 1 (FBP1) dephosphorylates histone H3 and TERT and suppresses gene transcription. (4) Our work revealed that metabolic enzymes, including fumarase, acetyl-CoA synthetase 2 (ACSS2), and alpha-ketoglutarate dehydrogenase (KGDH) can possess nonmetabolic functions in regulation of instrumental cellular activities including DNA repair and gene expression. The discoverers of tumor-promoting functions of metabolic enzymes provide novel approaches for diagnosis and treatment of human cancer.

Speaker Biography and Abstract



Professor Congying WU (吳聰穎), Associate Professor, Vice Dean of the School of Basic Medical Sciences, Deputy Director of the Institute of Systems Biomedicine, Peking University. She received her bachelor's degree from the School of Life Sciences, Tsinghua University. She obtained her PhD from the University of North Carolina at Chapel Hill (UNC-Chapel Hill) and conducted her postdoctoral research at the UNC Lineberger Cancer Center.

Her research group utilizes electron microscopy, super-resolution live-cell imaging, image informatics, mathematical modeling and other approaches to explore how cells and inter-cellular organelles respond to mechanical input and exert force. She also uncovers how tumor cells invade and metastasis, identifying cytoskeleton and motor proteins that have the potential to be therapeutically targeted.

She was selected into the Young Program of the National Overseas High-Level Talent Introduction Plan, awarded the Excellent Young Scientists Fund by the National Natural Science Foundation of China, and presided over the Young Scientist Project of the National Key R&D Program as the principal investigator. She serves as Vice President of the Cell Structure and Cell Behavior Branch of the Chinese Society for Cell Biology, Vice President of the Mechanobiology Branch, Biophysical Society of China and Secretary-General of the Beijing Society for Cell Biology.

Her honors include the Second Prize for Female Scientific Research Achievements from the Biophysical Society of China, Class II Grant of the CSB-Zeiss Female Scientist Fund, Peking University Health Science Youth Science and Technology Award, Luye Biopharma Outstanding Young Scholar Award, Lin Songnian Outstanding Young Scholar Award and other academic distinctions.

Five recent representative publications:

1. Zhou F, Ju R, Kang C, Li J, Yang A, Libert A, Sun Y, Liang L, Ai Y, Hu X*, Samantha J Stehbens S*, **Wu C***. "Mechanical confinement induces ferroptosis through mitochondrial dysfunction". ***Nature Communications*** 2025
2. Yang W, Wang Y, Liu G, Wang Y, **Wu C***. "TPM4 condensates glycolytic enzymes and facilitates actin reorganization under hyperosmotic stress". ***Cell Discovery***. 2024
3. Zhang C#, Wang Y#, Zhen Z, Li J, Su J, **Wu C***. "mTORC1 Mediates Biphasic Mechano-Response to Orchestrate Adhesion-Dependent Cell Growth and Anoikis Resistance". ***Advanced Science*** 2024
4. Shi P#, Meng J#, Ren X#, Sun Y, Liu Y*, Huang X*, Li B*, **Wu C.*** "Mechanical instability generated by Myosin 19 contributes to mitochondria cristae architecture and OXPHOS". ***Nature Communications*** 2022
5. Wang Y#, Zhang C#, Yang W, Shao S, Xu X, Sun Y, Li P, Liang L*, and **Wu C***. "LIMD1 phase separation contributes to cellular mechanics and durotaxis by regulating focal adhesion dynamics in response to force". ***Developmental Cell*** 2021

Research interests / Technical expertise:

1. Mechanobiology of cellular organelles
2. Cancer metastasis

Mechano-regulation of cellular organelles

Our research has been focusing on the mechano-regulation of membrane-bound organelles, membraneless organelles, and organelle interactions. Building on previous work, two major research directions have been systematically explored: (1) the mechanical shaping of organelles by the cytoskeleton; and (2) the effects of the mechanical microenvironment on the structure and function of organelles. Key findings include the characterization of mechano-regulatory mechanisms in diverse membrane-bound organelles (e.g., nucleus, mitochondria, Golgi apparatus, and autophagosomes) and membraneless organelles (e.g., focal adhesions and glucosomes), along with their functional implications in tumorigenesis. We have uncovered novel functions of mechanical energy derived from the cytoskeleton and motor proteins, and established an "active mechanical regulation" paradigm for organelle research.

Speaker Biography and Abstract



Professor Duan Cunming (段存明) is a professor of Molecular, Cellular, and Developmental Biology and Director of the Undergraduate Program in Neuroscience at the University of Michigan Ann Arbor. He received his Ph.D. at the University of Tokyo and completed postdoctoral training at the University of Washington and the University of North Carolina School of Medicine before joining the faculty of the University of Michigan.

His research program focuses on insulin and insulin-like growth factors (IGFs), two evolutionarily ancient hormonal pathways of central importance in medical sciences and fundamental biology. His group lab also contributes to advancing the understanding of oxygen sensing and hypoxia biology. He has published over 130 articles and given 210 invited talks and seminars at international/national conferences and peer institutions.

Prof. Duan has mentored 38 postdoctoral fellows/visiting scholars, 30 graduate students, and over 100 undergraduate researchers in his research lab.

Prof. Duan is a leader in the scientific community, currently serving as the Vice President in the International Society for IGF Research and a council member in the North American Society of Comparative Endocrinology. He is an editor/editorial board member in 9 scientific journals. He has organized a number of conferences and symposia, including the 2017 Gordon Research Conference on IGF and Insulin in Physiology and Diseases. He is an elected fellow of the North American Society of Comparative Endocrinology and received a number of awards.

Five recent representative publications:

1. Choi E#, **Duan C#**, Bai C.# "Regulation and function of insulin and insulin-like growth factor receptor signaling." ***Nat Rev Mol Cell Biol***, 2025; 26, 558–580. # co-corresponding author.
2. Li Y, Liu C, Rolling L, Sikora V, Chen Z, Gurvin J, Barabell C, Lin J, **Duan C**. "ROS signaling-induced mitochondrial Sgk1 expression regulates epithelial cell renewal." ***Proc Natl Acad Sci USA***, 2023; 120: e2216310120.
3. Zhang W, Yang Y, Li Y, Yu L, Zhang B, Zhang J, Cho WJ, Venkatarangan V, Chen L, Burugula BB, Bui S, Wang Y, **Duan C**, Kitzman J, Li M. "GCAF(TMEM251) regulates lysosome biogenesis by activating the mannose-6-phosphate pathway." ***Nature Communications***, 2022; 13:5351.
4. Liu C, Li S, Noer PR, Kjaer-Sorensen K, Juhl AK, Goldstein A, Ke C, Oxvig C, **Duan C**. "The metalloproteinase Papp-aa controls epithelial cell quiescence to proliferation transition." ***eLife***, 2020; 9:e52322.
5. Allard JB, **Duan C**. "IGF Binding Proteins: Why do they exist and why are there so many?" ***Front. Endocrinol***, 2018; 9:117.

Research interests / Technical expertise:

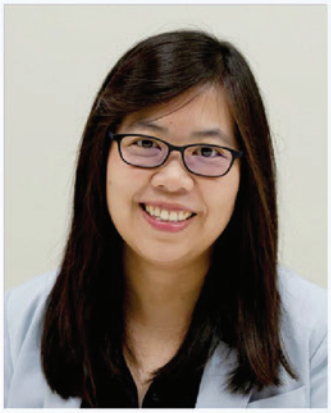
1. Insulin and insulin-like growth factors
2. Cell quiescence and cell cycle plasticity
3. Oxygen sensing and hypoxia

06

Regulation of master regulators: molecular and physiological mechanisms specifying insulin-IGF actions

Insulin and insulin-like growth factors (IGFs) are structurally related peptide hormones that regulate multiple aspects of human and animal physiology throughout life. Dysregulation of key components in these hormonal pathways has been linked to major human diseases, including diabetes, growth disorders, neurodegenerative diseases, and cancer. Despite enormous progress made over the past century since the discovery of insulin as a lifesaving medicine, significant gaps in our knowledge remain. For instance, insulin and IGFs have distinct functions, yet their pleiotropic actions are mediated by two highly homologous receptor tyrosine kinases, which share downstream signaling pathways. How these homologous systems give rise to distinct biological functions, and how insulin-IGF signaling translates into different, and sometimes opposing, cellular responses, remain poorly understood. Recent studies have revealed novel, cell type-specific functions of insulin-IGF signaling, but the underlying mechanisms are still not well defined. In this talk, I will discuss recent structural and functional insights into the activation of insulin–IGF receptors. I will present findings from mammalian and zebrafish models on the roles of hypoxia, nutrient availability, and IGF-binding proteins in specifying insulin-IGF action, as well as newly discovered roles of mitochondrial ROS in mediating insulin-IGF signaling and regulating cell cycle plasticity.

Speaker Biography and Abstract



Professor Christine WONG (黄少玲) is an awardee of the Nanyang Assistant Professorship, and an Assistant Professor of Metabolic Disorders in Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore. Her research revealed that diabetes predisposes individuals to form neutrophil extracellular traps (NETs) and identified the first detrimental implication of NETs in diabetes: impaired wound healing. Her current work centres on target discovery to intercept pathological NET formation in metabolic disease and its complications, with the ultimate goal of translating the bench-side findings to bedside applications in collaboration with bioengineers and clinicians.

Asst Prof Wong received numerous accolades, including the Higher Education Outstanding Scientific Research Output Award (Second-Class Award), Ministry of Education, People's Republic of China (2018), Young Investigator Award of the International Society on Thrombosis and Haemostasis (2013), GlaxoSmithKline/Immune Disease Institute Alliance Fellowship (2011), and the prestigious Postgraduate Research Output Award of the Chinese University of Hong Kong (2010). She has been invited to speak at various international conferences and seminars, including the Late-breaking Oral Communication at the 2022 Annual Congress of the International Society on Thrombosis and Haemostasis, where she was featured in the Daily Congress News Interview. Asst Prof Wong is a co-inventor of a licensed patent regarding the use of anti-NET compounds in facilitating wound healing. She also holds a technical disclosure (with provisional patent) regarding activation of a natural intrinsic anti-NETosis inhibitor as a strategy to suppress NETosis.

Asst Prof Wong received her Ph.D. (Physiology) from The Chinese University of Hong Kong and completed her postdoctoral training at Boston Children's Hospital, Harvard Medical School, where she was promoted to Instructor in Pediatrics.

Five recent representative publications:

1. Wang LD, Dalan R, Hou HW, **Wong SL**. "Sirtuin 1 is an endogenous NETosis inhibitor that becomes dysfunctional in diabetes." ***J Leukoc Biol***, 2026; 118(3):qiag006. PMID: 41549423

2. He L, Tay HM, Chen F, Cheng HS, Wang LD, Nam Q, Thannirmalai A, Gong L, Chung AJ, Tan NS, Li KHH, Dalan R, **Wong SL**, Hou HW. "High throughput electro-mechano-phenotyping of single leukocytes for cardiovascular risk stratification in type 2 diabetes mellitus." ***Adv Sci***, 2026; 13(9):e16021. PMID: 41313750

3. Antypas H, Schmidtchen V, Staiger WI, Li Y, Tan JW, Ng KKF, Neo CJY, Radhesh SM, Tanoto FR, da Silva RAC, Winter CC, Manzano C, Chong K, Wong JJ, Brugger S, **Wong SL**, Tyne DV, Zinkernagel A, Kline KA. "Loss of Fsr quorum sensing promotes biofilm formation and worsens outcomes in enterococcal infective endocarditis." ***Nat Comm***, 2026; 17(1):1668. PMID: 41535299

4. Stocks CJ, da Silva RAG, Antypas H, Jeyabalan N, **Wong SL**, Kline KA. "Enterococcus faecalis persists and replicates intracellularly within neutrophils." ***Infect Immun***, 2026; 94 (1), e00364-25. PMID:41400490

5. Blickisdorf T, Wood LG, Valkenborghs SR, Dixon AE, Horvat JC, Weaver NA, Yoong S, Berthon BS, Williams EJ, Brown AC, Jenkins CR, Morrissey ML, Wark PA, Wynne K, Grainge CL, El-Omar EM, Williams LM, Brannan JD, Wang LD, **Wong SL**, Scott HA. "Personalising the management of obesity-related asthma using medical nutrition therapy and physical activity prescription: The IDEAL study protocol." ***Contemp Clin Trials***, 2026; 108178. PMID: 41352529

Research interests / Technical expertise:

1. Neutrophil activation and NETosis
2. Metainflammation and inflammaging
3. Metabolic and cardiovascular diseases

07

Neutrophil ‘nuclear’ warfare: The critical role of NETosis in liver fibrosis and therapeutic implications

Chronic liver disease is a silent killer that affects 1.5 billion individuals globally, resulting in liver fibrosis and eventually cirrhosis which is irreversible. To date, treatment options for liver fibrosis are limited and most only slow its progression. Early detection and intervention of liver fibrosis remain challenging. Lipofuscin, an oxidatively modified lipid and protein complex that is often observed in senescent cells, has been reported in liver biopsies from patients with liver fibrosis of various etiologies. However, the relationship between lipofuscin and liver fibrosis, as well as immune activation, has not been defined. In this talk, I will share about how hepatic lipofuscin accumulation can trigger NETosis which contributes to liver fibrosis. The potential use of tirzepatide as an intervention will also be discussed.

Speaker Biography and Abstract



Dr. Ching On WONG (黃正安) earned his B.Sc. in Biochemistry from CUHK in 2005. He then joined Dr. Xiaoqiang Yao's laboratory in the Department of Physiology as an M.Phil. student, before transitioning into the Ph.D. program after one year. During his doctoral training, he studied ion channels and cardiovascular physiology, obtaining his Ph.D. in 2009. He remained for an additional year as a postdoctoral fellow, during a period that coincided with the inauguration of the School of Biomedical Sciences.

In late 2010, Dr. Wong moved to the United States to pursue postdoctoral research in neurobiology at the University of Texas Medical School. His work in the U.S. marked a shift in focus from cardiovascular physiology to the nervous system, laying the foundation for his later independent research program. From 2015 to 2019, he served as a nontenure-track faculty member, during which he secured his first independent research grant from the National Institutes of Health.

In 2020, just before the onset of the COVID-19 pandemic, Dr. Wong established his research laboratory at Rutgers University as a tenure-track assistant professor. His lab investigates brain cell metabolism, with a particular interest in how metabolic processes support the function of different brain cell types and how their disruption contributes to disease.

Five recent representative publications:

1. Bhupana JN, Pabon A, Leung HH, Rajmohamed MA, Kim SH, Tong Y, Jang MH, **Wong CO***. "Endolysosomal processing of neuron-derived signaling lipids regulates autophagy and lipid droplet degradation in astrocytes." ***Nature Communications***, 2025; 16(1):5073.

2. Pabon A, Bhupana JN, **Wong CO***. "Crosstalk between Degradation and Bioenergetics: How Autophagy and Endolysosomal Processes Regulate Energy Production." ***Neural Regeneration Research***, 2024; 20(3), 671-681.

3. Leung HH, Mansour C, Rousseau M, Nakhla A, Kiselyov K, Venkatachalam K, **Wong CO***. "Drosophila tweety Facilitates Autophagy to Regulate Mitochondrial Homeostasis and Bioenergetics in Glia." ***Glia***, 2024; 72(2):433–451. doi: 10.1002/glia.24484.

4. Scoma ER, Da Costa RT, Leung HH, Urquiza P, Guitart-Mampel M, Hambardikar V, Riggs LM, **Wong CO**, Solesio ME. "Human Prune Regulates the Metabolism of Mammalian Inorganic Polyphosphate and Bioenergetics." ***Int J Mol Sci***, 2023; 24(18):13859.

5. Karagas NE, Gupta R, Rastegari E, Tan KL, Leung HH, Bellen HJ, Venkatachalam K*, **Wong CO***. "Loss of Activity-Induced Mitochondrial ATP Production Underlies the Synaptic Defects in a Drosophila Model of ALS." ***J Neurosci***, 2022; 42(42):8019-8037.

Research interests / Technical expertise:

1. Endolysosomal biology
2. Neuron-glia metabolic crosstalk
3. Disease modeling using Drosophila and iPSC-derived cells

08

Fuel metabolism in brain cells

The brain is one of the most energy-demanding organs in the body, and sustained neural activity requires a continuous and tightly regulated supply of fuel. Disruption of bioenergetic homeostasis is a hallmark of aging and neurodegenerative disease, highlighting the importance of understanding how brain cells acquire, store, and catabolize energy substrates such as glucose and lipids. These processes are highly interconnected and coordinated among distinct brain cell types. In particular, neurons and glia perform specialized yet complementary metabolic functions that are essential for maintaining cellular and tissue-level homeostasis. Here, I will present an overview of two studies from my lab that examine how energy substrate metabolism is coordinated between brain cells in health and disease. The first study investigates how glial cells adjust their catabolic activity in response to neuron-derived signaling lipids. The second study focuses on familial tauopathy and explores the role of neuronal glucose metabolism in bioenergetic homeostasis and neurodegeneration. Together, these studies highlight the central role of cell-type-specific fuel metabolism in supporting brain function and identify actionable metabolic targets that may help reverse bioenergetic deficits in brain aging and neurological diseases.

Speaker Biography and Abstract



Dr. Li Jianzhen (李建真) received his Ph.D. from the Department of Biochemistry at The Chinese University of Hong Kong (CUHK) in 2011. After completing his doctorate, he joined the College of Life Sciences at Northwest Normal University in western China as a faculty member. He later returned to the School of Biomedical Sciences of CUHK for postdoctoral training from 2014 to 2017.

In 2022, Dr. Li became Dean of the College of Life Sciences at Northwest Normal University, and in 2025, he was appointed as Deputy General Manager of Gansu Pharmaceutical Group, bridging academic research with industrial drug development. His research focuses on hormone biology. He identified the receptor of asprosin, a glucose-raising hormone, and discovered and named another novel glucogenic hormone, gonacin. His current interests include novel peptide hormone discovery, zebrafish disease models, and GPCR-based screening of TCM components for drug leads.

Dr. Li has published over 30 papers and co-authored ***A Brief History of Human Hormones*** (2026). He has also served as PI on multiple NSFC projects and led major research programs supported by Gansu Province, contributing to biomedical research and pharmaceutical development in western China.

Five recent representative publications:

1. Liu Z, Wang P, Hu Y, Zhang N, Xu L, Kang T, ..., **Li J**. "Ptprf is the conserved receptor for Asprosin's glucogenic effects in vertebrates." ***Cell Reports***, 2026; 45(2).
2. Hu Y, Chen Y, Zhang Y, Liu Z, **Li J**. "Protocol for conditional mutagenesis in zebrafish germ cells using Tol2 transposon and a CRISPR-Cas9-based plasmid system." ***STAR protocols***, 2025; 6(1).
3. Liu Z, Zhang N, Wang C, Shi L, Hu Y, Wang Y, **Li J**. "Lrp13a and Lrp13b serve as vitellogenin receptors in the ovary of zebrafish." ***Biology of Reproduction***, 2024; 111(1), 123-134.
4. Hu Y, Zhao S, Liu Z, Kang T, Hsueh AJ, **Li J**. "Gonacin: A germ cell-derived hormone with glucogenic, orexigenic, and gonadal activities." ***Iscience***, 2023; 26(10).
5. Zhiquan L, Caiyan N, **Li J**. "Pyroptosis is involved in ovulation of zebrafish." ***Cell Discovery***, 2021; 7(1).

Research interests / Technical expertise:

1. Novel peptide hormone discovery
2. Zebrafish disease models
3. Ovarian development and ovulation
4. GPCR-based natural product screening

09

From biomedical basic research to drug discovery: a case study of ovulatin, a novel peptide hormone regulating ovulation

The translation of a fundamental biomedical discovery into a drug candidate is a lengthy and challenging process. This talk uses our recent discovery of Ovulatin, a conserved peptide hormone that mediates the action of luteinizing hormone (LH) on ovulation, as a case study to examine this process. I will present our ongoing work, from initial discovery to exploratory translational studies. First, I will describe the identification of Ovulatin as a secreted hormone that responds to LH stimulation in the ovary. We have identified EPHA6, a receptor tyrosine kinase, as a candidate receptor for Ovulatin. Mechanistic studies are consistent with a model in which the Ovulatin-EPHA6 axis contributes to LH-induced mitochondrial activation and ATP production in the ovary. I will then present in vivo data from zebrafish and mouse genetic models, in which loss of Ovulatin results in ovulatory failure and subfertility. Finally, I will discuss preliminary translational observations: exogenous Ovulatin treatment appears to sensitize the ovary to LH and increase ovulatory yield in animal models, and the presence of Ovulatin in humans raises the possibility that it may merit further investigation as a target for ovulatory disorders.

Speaker Biography and Abstract



Dr. Long Qi (龍琪) After receiving the Ph.D. degree in School of Biomedical Sciences, The Chinese University of Hong Kong in 2020, Dr. Long established his lab in the Joint School of Life Sciences, Guangzhou Medical University. His research focuses on the roles of mitochondria in cell fate determination and mitochondrial disease treatment. His team has revealed a new mechanism of mitochondrial nucleoid organization and transcription regulation by phase separation, and presented a novel role of nuclear translocation of mitochondrial TCA enzymes in cell reprogramming and cell fate transition. Furthermore, the team developed a new technology of mitochondrial transplantation and studied its application in the treatment of mitochondrial diseases.

Dr. Long has published 16 papers in journals including ***Cell***, ***Nature Structural & Molecular Biology***, ***Science Advances***, serving as either corresponding or first author. He was awarded as the Young Top Talent of Guangdong Province and a Nanshan Scholar of Guangzhou. As a key member, he received the First Class Guangdong Provincial Natural Science Award and the First Class Guangdong Precision Medicine Award in 2020.

Five recent representative publications:

1. Du S #, **Long Q#***, Zhou Y #, Fu J #, Wu H, Yang L, Xie Y, Ding Y, Zhang M, Guo J, Wang M, Lin J, Hu M, Zhang J, Yao D, Li W, Bao F, Xiang G, Wu Y, Huang Y, Liang H, Wang R, Li H, Chen B, Li C, Wang J, Zhang J, Qin D, Sun J, Zhu Y, Sun F, Wang W, Lu G, Chan W, Zhao H, Liu C, Liu X *. "Transplantation of encapsulated mitochondria alleviates dysfunction in mitochondrial and Parkison's disease models." ***Cell***, 2026; 1-13.
2. **Long Q**, Yan K, Wang C, Wen Y, Qi F, Wang H, Shi P, Liu X, Chan WY, Lu X, Zhao H.* "Modification of Maternally Defined H3K4me3 Regulates the Inviability of Interspecific Xenopus Hybrids." ***Science Advances***, 2023.
3. Li W#, **Long Q#**, Wu H#, Zhou Y, Duan L, Yuan H, Ding Y, Huang Y, Wu Y, Huang J, Liu D, Chen B, Zhang J, Qi J, Du S, Li L, Liu Y, Ruan Z, Liu Z, Liu Z, Zhao Y, Lu J, Wang J, Chan WY, Liu X. "Nuclear Translocation of Mitochondrial TCA Cycle Enzymes Modulates Pluripotency via Histone Acetylation." ***Nature Communications***, 2022.
4. **Long Q#**, Zhou Y#, Wu H#, Du S, Hu M, Qi J, Li W, Guo J, Wu Y, Yang L, Xiang G, Wang L, Ye S, Wen J, Mao H, Wang J, Zhao H, Chan WY, Liu J, Chen Y, Li P, Liu X. "Phase separation drives the self-assembly of mitochondrial nucleoids for transcription modulation." ***Nature Structural & Molecular Biology***, 2021.
5. Zhou Y#, **Long Q#**, Wu H, Li W, Qi J, Wu Y, Xiang G, Tang H, Yang L, Chen K, Li L, Bao F, Li H, Wang Y, Li M, Liu X.* "Top ology-dependent, bifurcated mitochondrial quality control under starvation." ***Autophagy***, 2020.

Research interests / Technical expertise:

1. Development of new method for mitochondrial transplantation
2. Clinical application of mitochondrial transplantation
3. Mitochondrial metabolism and mitophagy

10

Mitochondrial transplantation and organelle therapy

As a group of genetic diseases, mitochondrial diseases still lack efficient treatment. Mitochondrial transplantation holds great potential, but how to efficiently deliver mitochondria to somatic cells or tissues is still unsolved. We developed a new mitochondrial transplantation technology by encapsulating mitochondria with a membrane derived from erythrocytes. These mitochondrial capsules could deliver mitochondria into cells and tissues with high efficiency, and they could complement the loss, deletion or mutation of mitochondrial DNA, thereby rescuing the associated bioenergetic and biochemical defects in patient-derived cells with mitochondrial disorders. Furthermore, mitochondrial capsules rescued the mitochondrial DNA depletion syndrome and Leigh syndrome in Dguok$^{-/-}$ and Ndufs4$^{-/-}$ mouse models, respectively. Moreover, mitochondrial capsules rescued neuron loss, improved motor skills and restored mitochondrial function in a model of Parkinson's disease. Mitochondrial transplantation by mitochondrial capsule provides a potential treatment for mitochondrial disorders, and proposes an "organelle therapy" strategy in regenerative medicine.

Speaker Biography and Abstract



Professor Evandro Fei FANG-STAVEM (方飛) is Professor of Gerontology and Neuroscience at the University of Oslo (UiO), Norway, and his group are working on the molecular mechanisms of human ageing and dementia (https://evandrofanglab.com/), focusing on restoring the NAD+-mitophagy/autophagy axis. His team is fascinated with and actively engaged in moving their laboratory findings to translational applications, with the overarching goal of establishing novel and safe biological approaches to promote longer and healthier human lives.

As a Clarivate Highly Cited Researcher 2025, he has published over 150 papers in peer-reviewed journals including papers in *Cell*, *Cell Metabolism*, *Nature Neuroscience*, *Nature Ageing*, *Nature Biomedical Engineering*, and *Lancet Healthy Longevity*. He routinely reviews grants for more than 30 leading foundations, including European Research Council (ERC, EU), Medical Research Council (MRC, UK), and AFAR (USA). He was associate Editor-in-Chief of 4 leading ageing journals, including Ageing Research Reviews, Mechanisms of Ageing and Development, npj Ageing, and Journal of Gerontology: Biological Section. He has received several awards including the Butler-Williams Scholar on Aging 2016 by NIA (USA), and the 2023 Norwegian National Dementia research award presented by H.M. King Harald V of Norway.

After finishing his Ph.D. at The Chinese University of Hong Kong in 2011, he had a 6-year postdoc training with Prof. Vilhelm Bohr on molecular gerontology and Prof. Mark Mattson on neuronal resilience in Alzheimer's disease at the NIA, Baltimore. He opened his lab in Oslo in the fall of 2017. He is the founding (co)coordinator of the Norwegian Centre on Healthy Ageing network (NO-Age, www.noage100.com), the Norwegian National anti-Alzheimer's disease Network (NO-AD, www.noad100.com), and the Hong Kong-Nordic Research Network. He sits in the expert roundtable on aging research for the United Nation's Scientific Advisory Board. He is an academician of the Norwegian Academy of Science and Letters (DNVA,

Five recent representative publications:

1. Pan JP., et al., **Fang EF**. "Reduced ULK1 links impaired autophagy/mitophagy to Alzheimer's disease pathology." ***Nature Ageing***, in press.
2. Lagartos-Donate MJ...**Fang EF**. "Upregulation of the NAD+-REST axis ameliorates Alzheimer's disease." ***Brain***, 2026.
3. Zhang J et al., **Fang EF**. "Emerging strategies, applications and challenges of targeting NAD+ in the clinic." ***Nature Ageing***, 2025.
4. Xie C. et al., **Fang EF**. "Amelioration of Alzheimer's disease pathology by mitophagy inducers identified via machine learning and a cross-species workflow." ***Nature Biomed Eng***, 2022.
5. **Fang EF**. et al. "Mitophagy inhibits amyloid-beta and tau pathology and reverses cognitive deficits in models of Alzheimer's disease." ***Nature Neurosci***, 2019.

Research interests / Technical expertise:

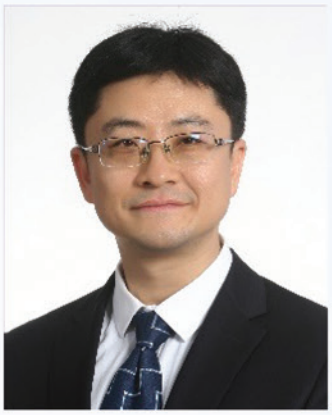
1. NAD^+ in healthy longevity and brain resilience.
2. Mechanisms of autophagy, focusing on mitophagy and lipophagy.
3. Mechanisms of and drug development for Alzheimer's disease.

11

Changing our nutrition and lifestyles to promote healthy longevity

Why do we age and how can we age successfully – especially the brain? To address these questions, we need to understand the sophisticated and multi-layered nature of biological ageing. One cause of ageing is compromised autophagy. In this lecture, I will share the mechanisms of autophagy and the linkage between compromised autophagy (especially mitophagy) and ageing and several other conditions, with a focus on neurodegenerative diseases (including Alzheimer´s disease / AD and depression). Publicly accessible approaches such as calorie restriction and exercise and small natural molecules such as NAD^+ precursors, urolithin A, and a small molecule EFF-AA from passion fruit hold promise for the slowing down of ageing and dementia, likely at least partially via mitophagy induction. I will also give an update on our translational progress, including NAD^+-based clinical trials investigating the treatment of conditions such as premature ageing diseases, brain diseases, and the applications of autophagy proteins and NAD^+ pathway intermediates as biomarkers of disease progression; progress on a Phase II clinical trial looking into the potential benefits of urolithin A for Alzheimer's patients will be covered. Opportunities and strategies in addressing ageing challenges in the populational and societal levels are included.

Speaker Biography and Abstract



Dr. Fei SUN (孫飛) is the professor at Guangzhou Institute of Biomedicine and Health (GIBH), Chinese Academy of Sciences. He is currently serving as the deputy director general of GIBH. He is also a professor at Institute of Biophysics (IBP), Chinese Academy of Sciences, and director of Biological Imaging Center at IBP.

In the past twenty years, Dr. Sun led the team to carry out structural biology research and bioimaging technology development mainly focusing on cryo-electron microscopy (cryo-EM) and completed the construction of world-class bioimaging center facilities in China. His team has made a series of important achievements in the frontier technology innovation, equipment development and scientific application research of biological electron microscopy. He has authored more than 180 research papers, including publications in top international journals such as *Cell*, *Nature*, *Science*, *Nature Methods*, etc., which have been cited more than 9400 times with H-index 45. Besides he has authorized more than 20 authorized invention patents with two commercialized. Besides academic research, Dr. Sun also led his engineer team to develop new electron microscopes, including 200kV ultra-fast (photon induced emission) cryo-electron microscope, high throughput 30kV field emission STEM for imaging resin embedded biological sections and the first domestic field emission 120kV transmission electron microscope TH-F120, etc. The achievements by Dr. Sun and his team have made great contributions to the development, innovation and educations of cryo-EM technologies in China.

Five recent representative publications:

1. Zhu Y*#, Lin T*, Yin G, Tai L, Chen L, Ma J, Huang G, Lu Y, Zhang Z, Wang B, Chen S#, **Sun F#**. "In situ structure of the mouse sperm central apparatus reveals mechanistic insights into asthenozoospermia." ***Cell Res***, 2025; 35(8):551-567.

2. Xu J*, Liao C*, Yin CC, Li G#, Zhu Y#, **Sun F#**. "In situ structural insights into the excitation-contraction coupling mechanism of skeletal muscle." ***Sci Adv***, 2024; 10(12): eadl1126.

3. Li S*, Wang Z*, Jia X, Niu T, Zhang J, Yin G, Zhang X, Zhu Y#, Ji G#, **Sun F#**. "ELI trifocal microscope: a precise system to prepare target cryo-lamellae for in situ cryo-ET study." ***Nature methods***, 2023; 20, 276–283.

4. Du J*, Wang D*, Fan H*, Xu C*, Tai L*, Lin S*, Han S, Tan Q, Wang X, Xu T, Zhang H, Chu X, Yi C, Liu P, Wang X, Zhou Y, Pin J, Rondard P, Liu H#, Liu J#, **Sun F#**, Wu B#, Zhao Q#. "Structures of human mGlu2 and mGlu7 homo- and heterodimers." ***Nature***, 2021; 594, 589-593.

5. Qiao A*, Han S*, Li X*, Li Z*, Zhao P*, Dai A, Chang R, Tai L, Tan Q, Chu X, Ma L, Thorsen T, Runge S, Yang D, Wang M, Sexton P, Wootten D#, **Sun F#**, Zhao Q#, Wu B#. "Structural basis of Gs and Gi recognition by the human glucagon receptor." ***Science***, 2020; 367, 1346-1352.

Research interests / Technical expertise:

1. Cryo-electron Microscopy Technology and In Situ Structural Biology
2. Structure and Function of Membrane Proteins and Large Supramolecular Complexes
3. Volume Electron Microscopy Technology and Architectural Biology
4. Development of Life Science Instruments

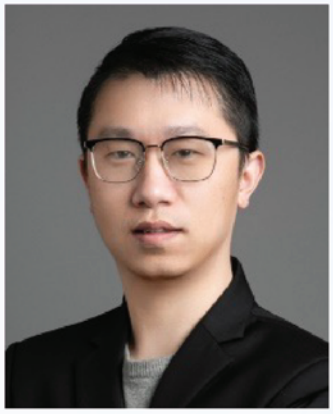
12

In situ structural insights into asthenozoospermia

Mammalian sperm motility relies on flagellar beating, the core of which lies in its specialized axonemal structure. The sperm axoneme typically exhibits a “9+2” configuration, consisting of nine peripheral doublet microtubules (DMTs), two central microtubules (central apparatus, CA), and other associated structures. Using cryo-electron tomography, we resolved high-resolution in situ structures of DMT and CA in mouse sperm axonemes, identifying 36 distinct microtubule inner proteins (MIPs) in DMTs (4.5-7.5 Å resolution) and 39 components in CA (up to 5.5 Å resolution), including 8 previously uncharacterized CA components. Besides, by integrating gene knockout mouse models with in situ structural techniques, we identified CFAP77 as the core protein mediating ciliary/flagellar axonemal microtubule linkage, clarifying the molecular cascade and motility defects caused by its deletion and solving a long-standing key scientific question in the field. We also discovered a new mechanism by which ANKRD5 regulates sperm axoneme structure and function, revealing the molecular pathway by which its knockout leads to reduced sperm motility and male infertility, providing a new potential target for asthenospermia research. Additionally, we found that the barrel-shaped structure connecting radial spokes RS1 and RS2 in mammalian sperm flagellar axonemes is a sperm-specific TRiC chaperonin complex, and confirmed the existence of in situ protein translation in sperm flagella; this TRiC promotes nascent protein folding required for flagellar motility, proposing a new mechanism by which mammalian sperm flagella maintain sustained motility through "in situ translation-in situ folding" for self-maintenance. Furthermore, we successfully resolved the high-resolution in situ structure of human sperm axonemes, identified multiple new component proteins, which is expected to deepen the understanding of human sperm motility mechanisms and the pathogenesis of axoneme-related diseases, and promote the development of male infertility diagnosis and treatment technologies.

SBS 15th Anniversary:
Research Day and Alumni Homecoming 2026
29-30 May 2026

30 May 2026	*Career Development*		
Time	**Title of Presentation**	**Speaker**	
	SESSION 1: Moderator: Prof. Bo Gao		
09:15-09:40	Academia, industry, or entrepreneur	**Prof. Jianqing Ruan** (Soochow University)	13
09:40-10:05	Beyond the bench: Anchoring the value of your PhD in the modern pharmaceutical industry	**Dr. Lut Heng Wayne Ho** (AstraZeneca)	14
10:05-10:30	Career in publishing as a scientific editor	**Dr. Ting Hei Thomas Chan** (Nature Communications)	15
10:30-10:45	Tea Break		
	SESSION 2: Moderator: Prof. Hui Zhao		
10:45-11:10	Science across borders: Building an international research career from academia to biotech	**Dr. Walfred Tang** (Insmed Innovation UK)	16
11:10-11:35	From bench to biotech investing: Reflections on the life sciences ecosystem	**Dr. Ka Wing Cheung** (EQT Partners)	17
11:35-12:00	From lab bench to trading desk: A PhD's journey across two worlds	**Dr. Yinglan Shu** (HSBC Qianhai Securities)	18
12:00-12:15	***Closing remarks for Day 2*** Prof. Man Lok Andrew Chan (Director, School of Biomedical Sciences, CUHK)		



Prof. Jianqing RUAN joined the School of Pharmaceutical Sciences of Soochow University as an associate professor after graduating from SBS in September 2013. He has been mainly engaged in research related to clinical pharmacology of new drug discovery. He has successively won honorary titles such as Jiangsu Provincial Double Innovation Talent and Leading Talent of Suzhou Industrial Park. Meanwhile, he entered the industry to start a business in 2020 and founded Weiyan Zhongfang Biotechnology Co., Ltd., providing professional clinical pharmacology research services for pharmaceutical enterprises. Within five years, as general manager, he led Weiyan Zhongfang to achieve an annual revenue exceeding ￥80 million, with an annual growth rate of over 50%.

Academia, industry, or entrepreneur

Drawing on dual experience spanning both industry and academia, combined with personal entrepreneurial practice, this presentation elaborates on the three core career paths in the biomedical field: academia, industry, and entrepreneurship. It introduces the characteristics and advantages of each path, and shares how to evaluate one's own competency profile to identify the most suitable career direction.

Speaker Biography and Abstract



Dr. Lut Heng Wayne HO is a Medical Science Liaison specializing in Oncology, with deep expertise in communicating current oncology updates in the clinical field to generate strategic insights. After completing his PhD and navigating the academic job market, he successfully pivoted to the pharmaceutical industry, where he now bridges the gap between cutting-edge clinical research and healthcare providers. A passionate science communicator, Dr. Ho leverages his academic background to foster collaborative dialogues in the medical community.

Beyond the bench: anchoring the value of your PhD in the modern pharmaceutical industry

The journey from a PhD program to a fulfilling career in the pharmaceutical industry is rarely a straight line. Navigating the transition from academia to industry often involves periods of uncertainty and a re-evaluation of one's career trajectory.

In this talk, I share my personal transition from academic research to becoming a Medical Science Liaison (MSL) in oncology.

By reflecting on key turning points—from organizing postgraduate events to a pivotal networking conversation that shifted his focus away from a traditional postdoc— I will highlight how the "extracurricular" experiences of a PhD are actually core career competencies in the modern industry - leveraging scientific communication, adaptability, and openness to stand out in a competitive job market.

The session will provide practical advice on interview preparation, effective networking, and shifting from an authoritative academic mindset to a collaborative, dialogue-driven industry approach.

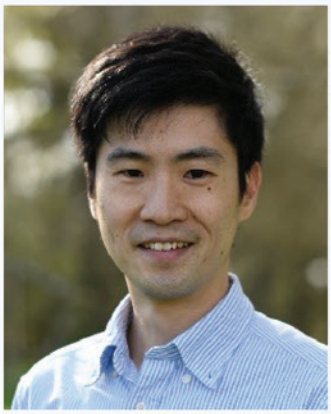


Dr. Ting Hei Thomas CHAN obtained his PhD in Biomedical Sciences and carried out his postdoctoral training in The Chinese University of Hong Kong, where he focused on hepatic immune microenvironment in colorectal cancer liver metastasis. Previously, he also investigated on epigenetics and aging in reproductive biology. He joined *Nature Communications* in March 2025 as an associate editor in the Translational and Clinical Team, handling pre-clinical and clinical manuscripts in the fields of hepatology, obesity and metabolism.

Career in publishing as a scientific editor

Publishing a research article is often regarded as a "black box", with the fate of the article being decided behind the scenes without transparency. The talk provides an inside perspective of the editorial process at *Nature Communications*, as well as what life as an academic editor looks like. I will also walk through how manuscripts are handled from initial submission and peer review to editorial decision making, thus provide insights for early career researchers.

Speaker Biography and Abstract



Dr. Walfred TANG began his scientific training at The Chinese University of Hong Kong, where he earned a BSc in Biochemistry followed by an MPhil in Anatomy within the newly established School of Biomedical Sciences. He conducted research in the laboratories of Professor Wai Yee Chan and Dr Alisa Shum, studying the mechanisms of germ cell and embryonic kidney development, respectively. This formative period shaped his long-standing interest in developmental biology.

He later received a highly competitive Croucher Cambridge International Scholarship to pursue a PhD in Physiology, Development and Neuroscience at the University of Cambridge. Under the supervision of Professor Azim Surani, a pioneer in epigenetics, Walfred identified key genetic and epigenetic regulators of human germ cell development and contributed to establishing the first human germ cell models derived from pluripotent stem cells. Supported by a Croucher Postdoctoral Fellowship, he continued his research in Cambridge, publishing widely cited work in Cell, Nature, Nature Reviews Genetics, Nature Cell Biology, and Science Advances on human germline epigenetic reprogramming.

Inspired during the COVID 19 pandemic to translate basic science into therapy, Walfred joined Adrestia Therapeutics, a Cambridge-based biotech company focused on drug discovery for rare genetic diseases. Following its acquisition by Insmed Inc., he advanced to the role of Director of Biology, leading projects and teams to apply stem cell and functional genomics technologies to discover targets for neurodegenerative diseases.

Science across borders: Building an international research career from academia to biotech



Dr. Ka Wing Otto CHEUNG is a biotech investment professional with a multidisciplinary background spanning biomedical research, life sciences strategy consulting, and venture/private equity investing. He began his career in translational cancer research at The Chinese University of Hong Kong, where his PhD focused on big-data and next-generation sequencing analyses to identify novel therapeutic targets in liver cancer. He subsequently joined Monitor Deloitte, advising global pharmaceutical and healthcare companies on commercial strategy, pricing, revenue forecasting, and regulatory considerations, before moving into biotech venture investing at ORI Capital, where he led scientific and investment analysis for global therapeutics opportunities. Otto is currently an Associate at EQT Partners, leading Asia biotech investment coverage. His work focuses on identifying breakthrough innovations that address meaningful unmet medical needs, integrating scientific diligence, clinical and commercial assessment, financial analysis, and ecosystem engagement to support the development and value creation of healthcare companies.

From bench to biotech investing: Reflections on the life sciences ecosystem

This talk will share a personal career journey from biomedical research at the School of Biomedical Sciences, CUHK, to life sciences strategy consulting and biotech venture/private equity investing. Drawing on experience across academic cancer research, pharmaceutical consulting, biotech venture capital, and global private equity, the session will explore how scientific training can be translated into careers beyond the laboratory. It will offer practical observations on the life sciences ecosystem, including how breakthrough innovations are identified, how scientific ideas are assessed against clinical and market needs, and how biotech companies are built, financed, and supported. Through personal reflections, the session aims to provide PhD students and early-career researchers with a clearer view of non-academic career paths and the skillsets needed to succeed at the intersection of science, business, finance, and entrepreneurship.

Speaker Biography and Abstract



Dr. Yinglan SHU is a healthcare equity analyst with a foundation in both science and economics—dual degrees from Peking University and a PhD from CUHK. After cutting the career in government institution, she spent eight years leading healthcare equity research at HK based domestic broker, and global investment banks, with AsiaMoney awards for market insights.

From lab bench to trading desk: A PhD's journey across two worlds

From counting cells to pricing biotech stocks, my eight-year sell-side journey taught me that a PhD's real edge isn't technical depth—it's translating complexity into conviction under pressure. I'll cut through the jargon to share what actually separates buy-side from sell-side, why primary and secondary markets reward entirely different skill sets, and how your science background becomes a moat when everyone else is just reading press releases.

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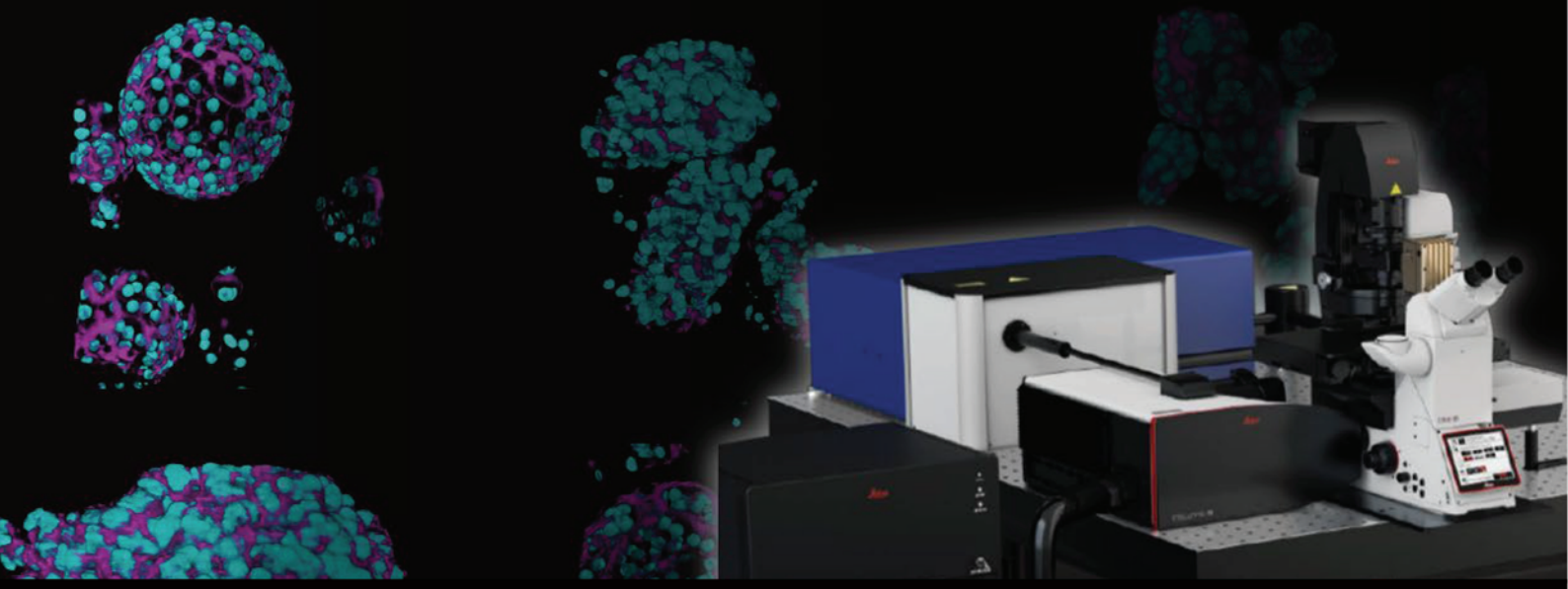
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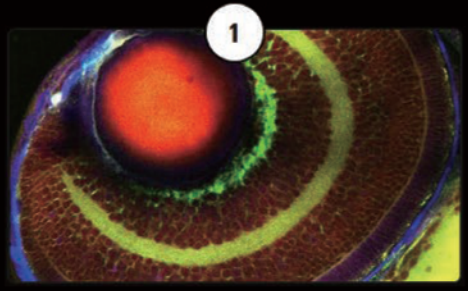
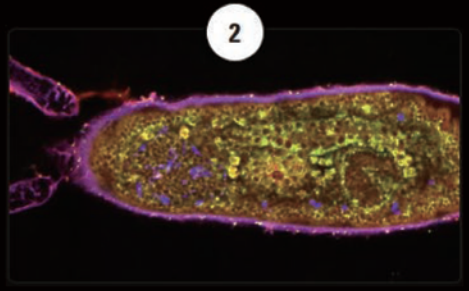


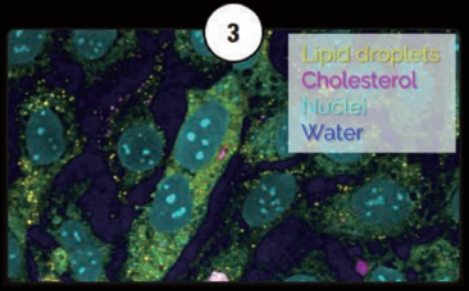
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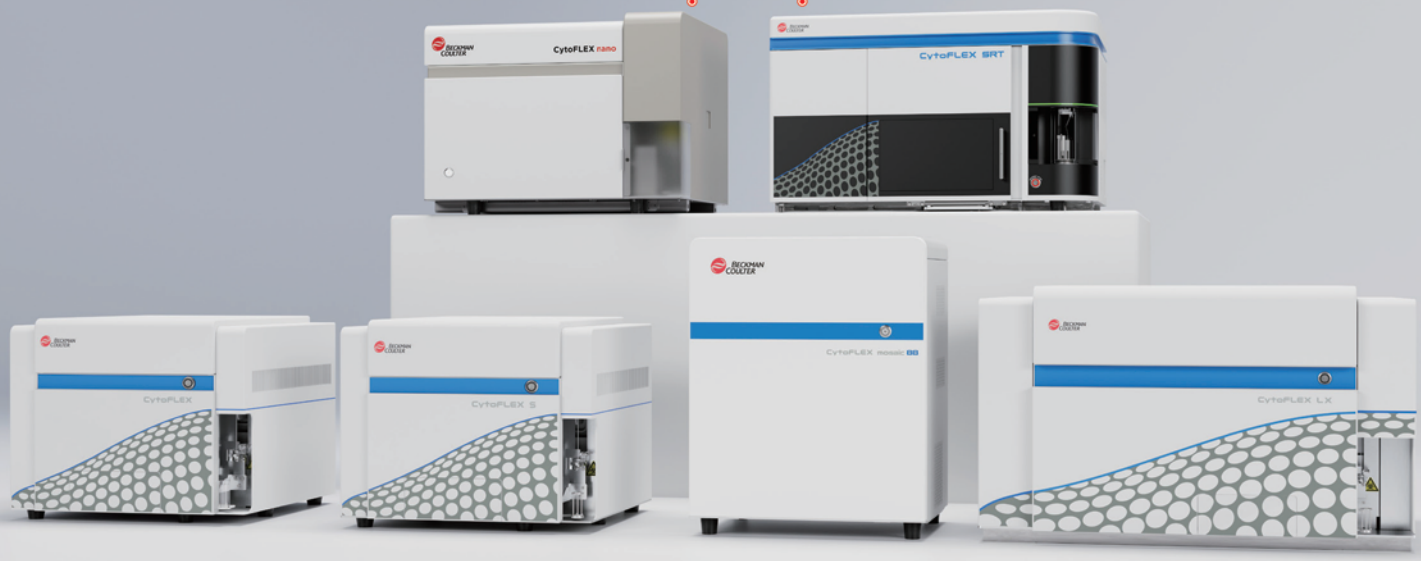
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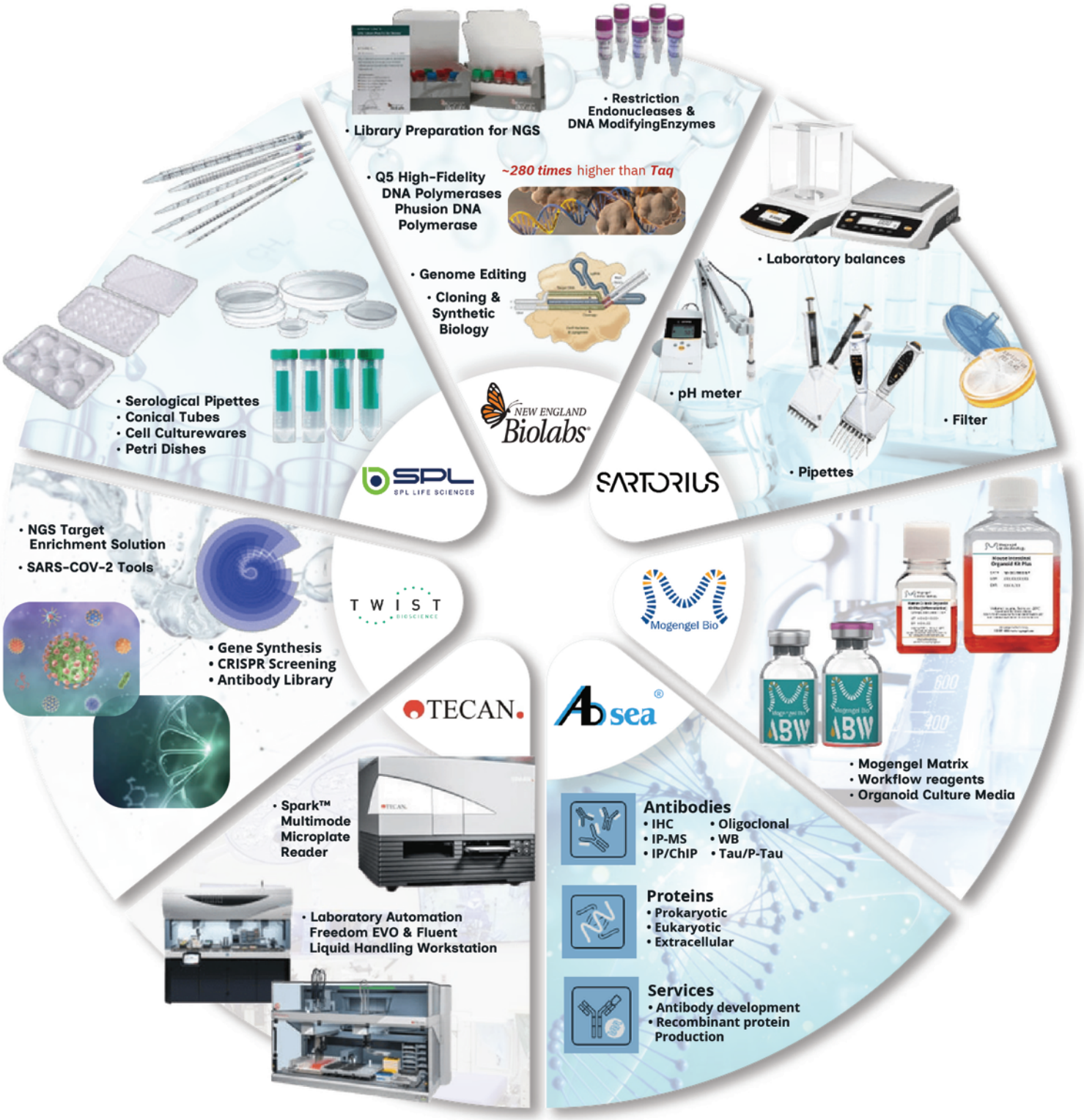
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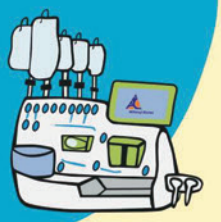
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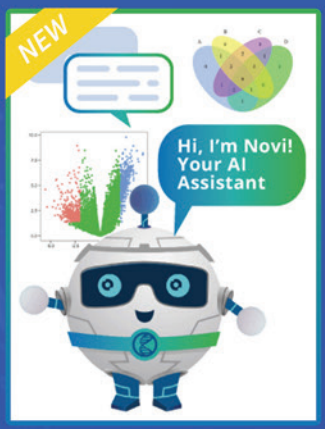


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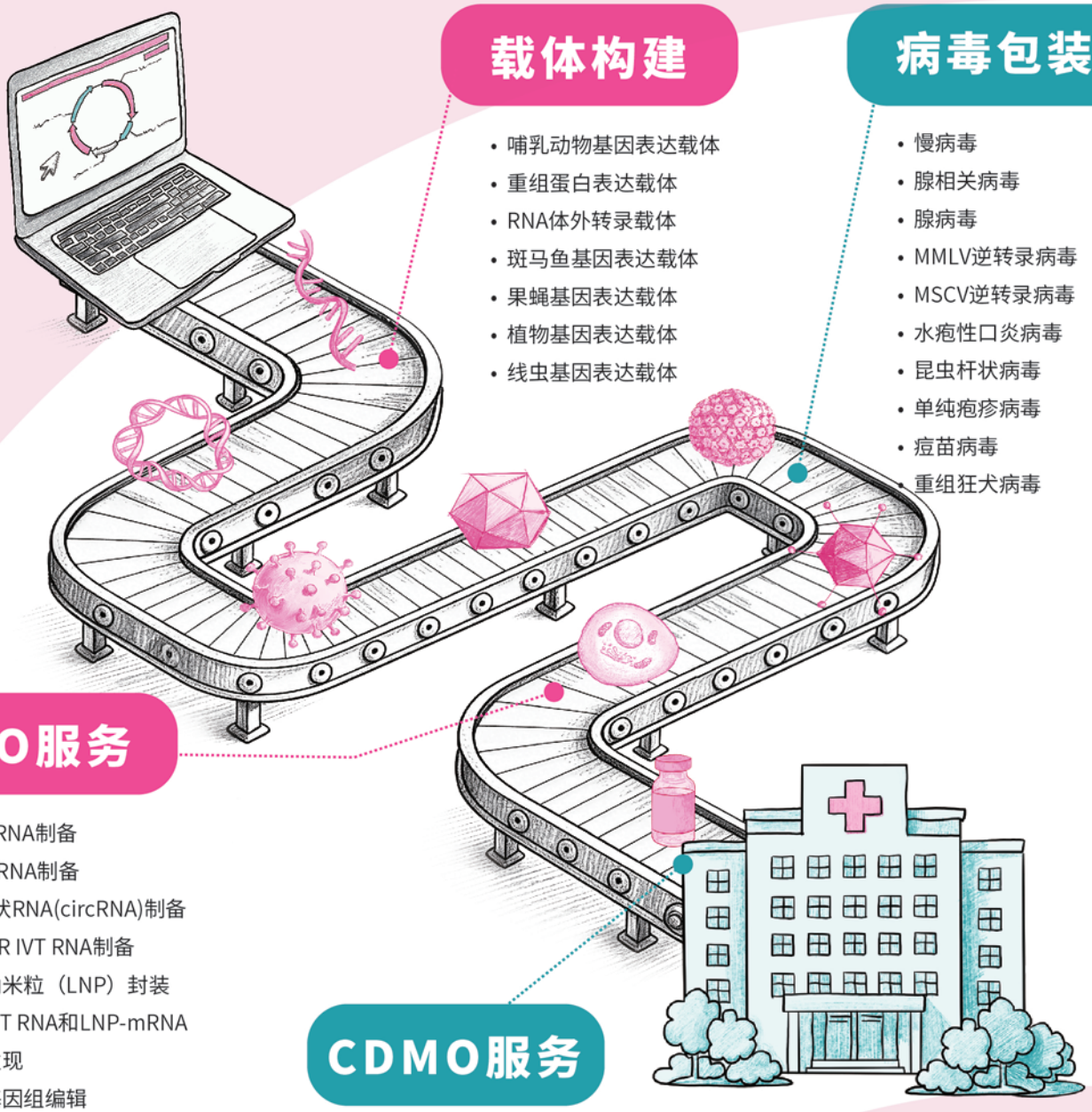
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