

Team Members

Functional Proteomics Laboratory (FPL)

Team Bio:



Dr. Chen Liyan
Senior Scientist

Liyan started her mass spectrometry career at the Singapore Eye Research Institute, providing analytical support for pharmacokinetic and metabolomic studies. She worked on the human tear metabolome and markers of diabetic retinopathy for her PhD at the National University of Singapore, and studied proteome-metabolite interactions as a postdoctoral fellow at Nanyang Technological University. She works on clinical research projects in biomarker discovery and personalized medicine, and is the lab's frontrunner in data-independent acquisition. Liyan also has several ongoing experiments outside the lab, such as optimizing conditions for growing vegetables and brewing coffee. She also runs a semi-exclusive board game pop-up shop from her car.



Dr. Wang Loo Chien, Jeremy
Senior Scientist

Jeremy is a postgraduate alumnus of National University of Singapore (NUS) where he was first introduced to the amazing world of vertical lines and numbers amazing people can use to interpret the physical world (he later learned it is called a mass spectrum). He worked on understanding cellular changes using mass spectrometry (MS) techniques, particularly amide hydrogen/deuterium exchange. He then joined Nanyang Technological University (NTU) for his postdoctoral research studying membrane proteomics and protein-drug interactions using cellular thermal shift assay coupled with MS. Currently, he works on cancer proteomics through collaboration with local and international partners. His other research interests include

(but are not limited to) metabolic changes induced by drug compounds as well as application of specific MS techniques to address important biological questions. Outside of research, he loves reading (this includes scientific papers, hopefully), playing computer and board games, and resting his mind's eye.



Dr. Koh Wai Ling Hiromi

Senior Scientist

Hiromi completed her PhD with School of Public Health at National University of Singapore developing bioinformatics tool to integrate multi-omics datasets and identify predictive signatures separating phenotypic outcomes using a network-based approach. She has a strong interest in method development to find new and innovative ways to extract signal from noise and applying it in complex diseases such as cardiovascular disease and diabetes to help improve current diagnostics, prognostics and gain insights for developing new therapeutics. Her work in IMCB involves working with clinical projects to improve human population health. One of her projects involve combining gut-microbiome data with host -omics data to understand how the dysbiosis of the gut plays a role in affecting energy-balance to result in obesity and poor metabolic health. In her free time, she tutors math to secondary school children, plays Sudoku and cooks at home.



Dr. Ser Zheng

Senior Scientist

Zheng started his career in mass spectrometry as an undergraduate researcher under Dr. Jason Locasale at Cornell University in 2014. Zheng developed and optimized untargeted metabolomics approaches to study the metabolism of anti-metabolite drug and its effect on endogenous metabolites in cancer. Zheng then pursued and received his PhD from Cornell University, USA in 2020 under the Tri-Institutional PhD Program in Chemical Biology at Memorial Sloan Kettering Cancer Center under the supervision of Dr. Alex Kentsis. During his PhD, Zheng optimized and developed cross-linking mass spectrometry for mapping of the

chromatin protein-protein interaction network, applied cross-linking mass spectrometry towards an integrative structural biology effort to solve the molecular structure of the smc5/6 complex. Zheng was also involved in a variety of proteomics-based projects during his PhD, including using SILAC-iPOND to identify protein interactors of an oncogenic DNA transposase and proteomics profiling of cancer cell lines and samples. Zheng is currently a post-doctoral fellow at the Functional Proteomics Laboratory under Dr. Radoslaw Sobota. Zheng's current research work is focused on developing cross-linking mass spectrometry methods and tools to discover new protein-protein interactions and integrative structural biology in immunology, virology and cancer biology.



Dr. Maxine Lam
Senior Scientist

Maxine is a newcomer in the world of mass spectrometry. She obtained her PhD at University College London where she studied the role of actomyosin in oriented divisions for tissue homeostasis. She then did a postdoc at the Institute of Cancer Research (London) where she investigated the role of actomyosin in cancer cell extravasation using novel in vitro 3D culture systems. She expanded on this work after moving to the Institute of Molecular and Cell Biology (IMCB) where she developed complex in vitro 3D models for glioblastomas with a functional blood-brain barrier. She is interested in using next generation mass spectrometry technologies to study tumour heterogeneity and the tumour microenvironment. Outside of the lab, she likes to run in fields or punch some bags, but this has nothing to do with her mental state, nope not at all.



Dr. Guo Xue
Scientist

Guo Xue received her PhD from the Nanyang Technological University studying neurodegenerative diseases in aging mouse model. She investigated intact proteins and drug based small molecules using mass spectrometry for her first postdoctoral work at the EDDC.

Her current work focuses on developing robust spatial multi-omics with mass spectrometry imaging techniques, which aims to solve biological question related with analytes spatial localization.



Zhao Tian Yun

Lead Research Officer

Tianyun got her Masters degree from Nanyang Technological University. She spent years working on stem cells and their differentiation, then moved on to proteins from RNAs and DNAs. Her cellular and molecular techniques provide a solid support to the lab. She optimized the protocol to study phosphoproteomics and works on single cell proteomics right now. She is the safety officer and first aider in the lab.



Ler Siok Ghee

Lead Research Officer

Siok Ghee graduated from National University of Singapore with Master of Science. She works on proteomics and metabolomics workflows with various mass spectrometers to provide MS services under Advanced Proteomics Platform @ IMCB. She enjoys catching drama series and reading on IG for healthy baking and exercise to keep her sanity for work-life balance.



Jackson Low

Senior Research Officer

Jackson is a versatile researcher with a Master of Life Science in Chemistry from Nanyang Technological University (NTU). He can bridge chemistry and biology which allow him to view research problems from different angles. He has worked on clinical samples for metabolomics with mass spectrometry at the National University of Singapore (NUS) and developed a new material to separate red blood cells in dried blood spot cards. In his spare time, Jackson enjoys working out at the gym, playing video games, and spending time with his Corgi. He is also a foodie who loves to try new restaurants.

**Sandra Lim**

Research Officer

Sandra graduated from LaTrobe University with a bachelor's degree in biomedical sciences. She worked on large cohort clinical proteomic projects with her postdoc, Liyan. She is also part of the A*PROMPT Platform group working together with another postdoc, Jeremy. Aside from work, she is a pawrents of 2 cute pampered yorkies. She also loves to cook during her free time.

**Wang Shi Mei, Shimmy**

Research Officer

Shimmy graduated from Deakin University with a bachelor's degree in forensic science. Prior to joining the team as a research officer, she first joined as a trainee under the SGUnited Traineeships program for a year. She works on collaborative and cross-linking based projects together with Zheng and is also the lab's procurement officer. Outside of work, she enjoys spending time with her pet poodle, playing Zelda games on Switch and dragging her friends to play horror-themed escape rooms together.

Lab Alumni:



Dr. Lim Yan Ting



Dr. Wint Wint Phoo



Tan Kiat Yi