NZCRS Symposium 20-21 November 2025

Grafton Campus, University of Auckland, Auckland

Next-Generation Drug Delivery: From Concept to Clinic

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#NZCRS2025

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NZCRS Symposium Programme (Released on 14 Nov 2025)

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Thursday, 20th Nov, Day 1	
Venue: Faculty of Medical and Health Sciences, The University of Auckland (UoA), Grafton Auckland	
10 – 10.30 am	Conference Registration and Poster Set-up (Atrium, Grafton)
10.30 – 10.45 am (Room 501-110)	**Mihi/ Karakia** – A/Prof Shane Scahill, Head of the School **Welcome -** Prof Shyamal Das, President NZCRS **Opening remarks, house keeping** – Prof Jingyuan Wen, Chair
Session 1 (10.45 – 12.30 pm) Room 501-110	**Chair: Prof Jill Cornish; Co-chair: Simon Kellaway**
10.45 am	**Plenary Speaker 1:** Distinguished Prof Dame Margaret Brimble, UoA *"Peptide-Based Therapeutics: Paving the Way from the Lab to the Clinic"*
11.25 am	**Invited Speaker 1:** A/Prof Yan Li, Auckland University of Technology, *"Application of CRISPR-Cas9 System to Study Biological Barriers to Drug Delivery"*
11.50 am	Contributed talk 1 – Natalie Hughes *"Ibogaine – modified dosing to control plasma concentrations and reduce QT interval prolongation"*
12.02 pm	Contributed talk 2 – Marvin Liu *"From Needle to Nibble: PEGylated Nanocarriers for Oral Thymopentin Immunomodulator"*
12.14 pm	Contributed talk 3 – Liang Yan *"Exosome hybrid nanocarrier enables simultaneous co-delivery to suppress AKT/mTOR signaling and potentiate synergistic therapy in non-small cell lung cancer"*
12.30 – 1.30 pm	**Lunch (Atrium Grafton)**
Session 2 (1.30 – 3 pm) Room 501-110	**Chair: Dr Sachin Thakur; Co-chair: Priyanka Agrawal**
1.30 pm	**Invited Speaker 2:** Dr Tanveer Tabish, Oxford UK *"Drug delivery nanosystems to improve endothelial function and vascular health received"*

1.55 pm	Contributed talk 4 – Hong-Li Guo *"Pop-PK modeling enables the bidirectional prediction for exposure levels or individualized dosing of atomoxetine in children with ADHD within real-world clinical scenarios"*		
2.07 pm	Contributed talk 5 - Jessie Chau *"Translating Advanced Topical Drug Delivery Systems into Chronic Wound Care"*		
2.19 pm	Contributed talk 6 – Kaniz Fatema *"Dissolvable Microneedle Arrays for Pain-Free Transdermal Drug Delivery"*		
2.31 pm	Contributed talk 7 – Eileen Hulambukie *"Fabrication and Evaluation of Polymeric-Based Microneedle System for Transdermal Delivery of Insulin for the Treatment of Diabetes"*		
Session 3 (2.45 – 3.55pm)	**Poster Session** (Atrium, Grafton)	**2.45 – 3.15 pm** (Room 503-028)	**NZCRS, AGM**
3.30 -3.55 pm	**Poster session continues with Afternoon Tea (Atrium, Grafton)**		
Session 4 (4 – 5 pm) Room 501-110	**Chair: Prof Zimei Wu; Co-chair: Dr Patrick Pan**		
4.00 pm	**Invited Speaker 3:** Prof Defang Ouyang, Macau University *"Artificial intelligence for drug delivery: yesterday, today and tomorrow"*		
4.25 pm	Industry talk 1 - Anton Paar Australia Pty. Ltd.		
4.35 pm	Industry talk 2 – DEC, Hamilton		
4.45 pm	Industry talk 3 – SataTech and NanoSynthes		
5.30 - 9.00 pm	**Conference Dinner – Buffet Buffet, 406 Khyber Pass Road, Newmarket, Auckland**		

Friday, 21st Nov, Day 2	
Venue: Faculty of Medical and Health Sciences, The University of Auckland (UoA), Grafton Auckland	
9 – 9.30 am	Conference Registration, Group Photo (Atrium, Grafton)
Session 5 (9.30 – 11 am) Room 501-110	**Chair: Prof Jingyuan Wen; Co-chair: Dr Marvin Liu**
9.30 am	**Plenary Speaker 2:** Prof Wei Wu, Fudan University, China *"Seeing is believing: In vivo fluorescence bioimaging of drug nanocarriers"*
10.10 am	**Invited Speaker 4:** A/Prof Greg Walker University of Otago, Dunedin, *"Old Drug, New Trick: Reformulating Tranexamic Acid for the Field"*
10.35 am	Contributed talk 8 – Ederlyn Perolina *"An in vitro platform to assess ultrasound-induced bioeffects in cell culture – insights from evaluations in a nerve injury model"*
10.47 am	Contributed talk 9 – Simon Kellaway *"Improved in vitro models of nerve regeneration"*
10.59 am	Contributed talk 10 – Mahima Bansal *"Biocompatible polymeric formulations for the delivery of therapeutic agents for spinal cord injury"*
11.12 – 11.30 am	**Morning Tea (Atrium Grafton)**
Session 6 (11.30-12.45 pm) **Room 501-110**	**Chair: Prof Shyamal Das; Co-chair: Prof Fanzhu Li**
11.30 am	**Plenary Speaker 3:** Prof Kim Chan, University of Sydney, Australia *"Inhaled delivery of phage therapy"*
12.10 pm	**Plenary Speaker 4:** Prof Cornelia Keck, Germany *"Plant Crystals - a novel Next-Generation Drug Delivery platform"*

12.35 pm	Contributed talk 11- Priyanka Agarwal *"Bench-to-Bedside Translation of the First Eyedrop Treatment for Keratoconus"*
12.47 pm	Contributed talk 12 – Reem Khalaf *"Uptake and transport of a vitamin B_{12}-cyanine 5 conjugate in Caco-2 cells"*
12.59 pm	Contributed talk 13 – Jingjing Wang *"A Chemotherapy Nano-Cocktail Targeting Cancer Stem Cells Induces Immunogenic Cell Death to Potentiate PD-L1 Blockage in Tripple-Negative Breast Cancer"*
1.12 – 1.50 pm	**Lunch (Atrium Grafton)**
Session 7 (1.50 – 3.30 pm) Room 501-110	**Chair: Prof Darren Svirskis; Co-chair: Dr Mahima Bansal**
1.50 pm	**Plenary Speaker 5:** Prof Jadranka Travas-Sejdic, UoA *"Porous Electroactive Substrates for On-demand Drug Delivery and Electrical Stimulation"*
2.30 pm	**Invited Speaker 5:** Dr Amy Foster, Victoria University, Wellington *"Lipid Nanoparticles: Navigating Formulation and Function"*
2.55 pm	Contributed talk 14 – Kamel Ahmed *"Preclinical Validation of a pH-Sensitive Liposomal Nanococktail for Targeting Breast Cancer Stem Cells"*
3.07 pm	Contributed talk 15 – TBC
3.30 pm	**Award ceremony, closing remarks – Prof Jingyuan Wen + Organizing committee**
3.45 pm	**Vote of thanks, Announcement of new committee membership – Prof Shyamal Das**
4 pm	**NZCRS Symposium 2025 Ends**

Talk Summary

Talk Type	Number	Talk Time	Q&A
Plenary	5	30 min	10 min
Invited	5	20 min	5 min
Contributed (Oral)	15	10 min	2 min
Posters	19	-	-

Distinguished Prof Dame Margaret Brimble,
School of Chemical Sciences, University of Auckland, Auckland, New Zealand

Biography: Margaret is Distinguished Professor and Director of Medicinal Chemistry at the University of Auckland, New Zealand. She is an Executive Editor for Organic Letters, Past-President of IUPAC Organic and Biomolecular Division III and Past-President of the International Society of Heterocyclic Chemistry. She has published >700 papers and inventor on >50 patents. She is a Fellow Royal Society London, Dame Companion New Zealand Order of Merit and inducted into the ACS Medicinal Chemistry Hall of Fame. She was awarded the 2023 Davy Medal (Royal Society London), Rutherford, Hector and MacDiarmid medals (Royal Society NZ), 2022 RSC Pedler Award for Organic Chemistry and 2023 ACS Ernest Guenther award for Natural Products Chemistry. She was named 2007 L'Oreal-UNESCO Women in Science laureate in Materials Science for Asia-Pacific and a 2015 IUPAC Distinguished Women in Chemistry.

Margaret's research focusses on the synthesis of novel bioactive natural products, and peptides, antibody-drug conjugates, peptide vaccines and new biomaterials. Her lab carried out the medicinal chemistry for the FDA approved-drug Trofinetide/ DaybueTM (NNZ2566) to treat Rett Syndrome (http://www.neurenpharma.com; https://acadia.com). Her team also discovered the drug candidate Ercanetide (NNZ2591) currently in phase 2/3 clinical trials for four neurogenetic disorders: Angelman syndrome, Pitt Hopkins syndrome, Phelan-McDermid syndrome and Prader-Willi syndrome.

Prof Hak-Kim Chan,
Head of Advanced Drug Delivery Group
Sydney Pharmacy School, University of Sydney, Australia

Biography: Hak-Kim Chan, Professor in Pharmaceutics, is leading the Advanced Drug Delivery Group at the Sydney Pharmacy School, University of Sydney. He is a pioneer in applying novel particle engineering processes, characterization techniques and computational modelling for powder aerosols and inhaler design. His basic resarch has contributed to the diagnosis and treatment of life-threatening respiratory diseases through drug delivery by inhalation aerosol technology, from bench to market, culminating in the successful development of the formulations for two pharmaceutical respiratory products (Aridol and Bronchitol, Pharmaxis Ltd) approved by the US FDA. He has over 570 publications, with >29,000 citations and h-index 93 (via Google Scholar). Since 1995, his research has been funded by the Australian Research Council and the pharmaceutical industry, and more recently also by the Australian National Health and Medical Research Council, US Institutes of Health and US Food and Drug Administration. He is a Fellow of American Association of Pharmaceutical Scientists, was Vice President of Asian Federation for Pharmaceutical Science, Executive Editor of Advanced Drug Delivery Reviews, and recipient of the 2023 Career Achievement Award of The International Society for Aerosols in Medicine

Prof Wei Wu,
School of Pharmaceutical Sciences,
Fudan University, Shanghai, China

Biography: Dr. Wei Wu, in 2000, joined the School of Pharmacy at Fudan University, where he currently serves as a full professor in the Department of Pharmaceutics. He once held the position of Vice Dean of the school. Dr. Wu has been honored with several distinguished awards, including “New Century Excellent Teachers” by the Ministry of Education, “Shanghai Excellent Discipline Leaders,” “Shanghai Twilight Scholar,” and “Shanghai Excellent Young Teachers of Universities.” He also serves as an expert in drug evaluation for the State Drug Administration (SDA). Currently, Dr. Wu holds key editorial roles in several prestigious journals: he is Vice Editor-in-Chief of Acta Pharmaceutica Sinica B, Section Editor-in-Chief of Pharmaceutics, and Associate Editor for Chinese Chemical Letters and Journal of Drug Delivery Science and Technology. His research focuses on the biological fate of drug carrier systems, oral nanoparticulate drug delivery systems, novel dosage forms, and innovative pharmaceutical technologies. To date, Dr. Wu has published more than 300 peer-reviewed articles in the fields of pharmaceutics and nanomedicine.

Prof Jadranka Travas-Sejdic,
School of Chemical Sciences,
University of Auckland, Auckland,
New Zealand

Biography: Jadranka Travas-Sejdic is a Professor at the School of Chemical Sciences, The University of Auckland. She is co-director of the Centre for Innovative Materials for Health at The University of Auckland and a Principal Investigator of the MacDiarmid Institute for Advanced Materials and Nanotechnology. Her research interests are in the areas of biosensors and organic electronic materials for bioelectronics. Professor Travas-Sejdic has authored > 350 publications, including 11 book and encyclopaedia chapters. She is a Fellow of the Royal Society Te Apārangi (2017), a Fellow of the New Zealand Institute of Chemistry (2009), she received Early Career Research Excellence Award (2005), Easterfield Medal (2006), Maurice Wilkins Centre Prize for Chemical Sciences (2017), Shorland Medal (2018), Hector Medal (2019) and The University of Auckland Research Excellence Award (2022). She has been a Councillor of the Pacific Polymer Federation since 2009. She is an Associate Editor of ACS *Macromolecules*.

Prof Cornelia M. Keck ,
Department of Pharmaceutics and Biopharmaceutics, Marburg University, Marburg, Germany

Biography: Prof Keck is a pharmacist. She obtained a post-graduate certificate in pharmacy from Otago University in 2003 and a PhD in 2006 from the Freie Universität (FU) in Berlin. In 2009 she was appointed as Adjunct Professor for Pharmaceutical and Nutritional Nanotechnology at the University Putra Malaysia (UPM) and in 2011 she obtained her Venia legendi (Habilitation) at the Freie Universität Berlin and was appointed as a Professor for Pharmacology and Pharmaceutics at the University of Applied Sciences Kaiserslautern. Since 2016 she is Professor of Pharmaceutics and Biopharmaceutics at the Philipps-Universität Marburg.
Her field of research is the development and characterization of innovative nanocarriers for improved delivery of poorly soluble actives for healthcare and cosmetics. Prof. Keck is executive board member of the German Association of Cosmetics and Detergents (SEPAWA e.V.), Vize-chairman of the unit „Dermocosmetics“ at the German Society of Dermopharmacy, active member in many pharmaceutical societies and member of the BfR Committee for Cosmetics at the Federal Institute for Risk Assessment (BfR).

Dr Amy Foster,
Te Kāuru | Ferrier Research Institute
Te Herenga Waka | Victoria University of Wellington, New Zealand

Biography: Dr Amy Foster is a Research Scientist at the Ferrier Research Institute, working within New Zealand's RNA Platform to develop lipid nanoparticle (LNP) systems for mRNA delivery. Her research focuses on the synthesis of novel ionisable lipids, optimisation of formulation methods, and development of targeted LNPs to improve delivery efficiency and stability. Amy's work contributes to understanding how lipid structure and formulation parameters influence encapsulation, biodistribution, and the *in vivo* performance of mRNA–LNP therapeutics. Trained as a synthetic organic chemist, Amy's research has spanned synthetic and medicinal chemistry, including the development of immune-modulating glycolipids as vaccine adjuvants, transition–state inhibitors targeting bacterial and parasitic enzymes, and novel prodrug systems. She has designed and synthesised complex bioactive molecules and applied them in biological models to drive translational outcomes. Amy's work sits at the interface of chemical design, formulation science, and immunology.

A/P Yan Li,
Department of Biomedicine and Medical Diagnostics, Auckland University of Technology, Auckland, New Zealand

Biography: Dr Yan Li completed his clinical medical training in 1997. After completing Master of Science at the University of Auckland and PhD at the University of Otago, Dr Li worked as a research fellow for the Tokyo University of Science, Tohoku University and the University of Auckland. He joined AUT from 2011 and is currently an associate professor and the programme leader of biomedical science. He has supervised 11 PhDs and 18 Masters to completion. Dr Li has received research grants/awards from such bodies as Royal Society of NZ, the Health Research Council, Auckland Medical Research Foundation, the NZ Cancer Society, and NZ Heart Foundation. He is a member of the Cancer Theme Leadership Group of the Maurice Wilkins Centre in New Zealand. He serves as an Associate Editor on the Editorial Board of the journal Frontiers in Pharmacology (Drug Metabolism and Transport). Dr Yan Li is a molecular pharmacologist, specialising in membrane transporter proteins, pharmacokinetic disposition and drug resistance. Accumulating evidence suggests efflux transporters present from prokaryotes to humans play pivotal roles in drug resistance and immunity modulation. Dr Li's research focuses on membrane transporters, drug resistance, and novel tumour biomarkers. Leveraging the AUT-Roche Diagnostics Joint Laboratory and high-resolution mass spectrometry-based metabolomics and proteomics laboratories, he is primarily engaged in basic and translational research in gastrointestinal cancers and breast cancer, with a particular emphasis on drug resistance mechanisms mediated by membrane transporters and novel tumour biomarkers.

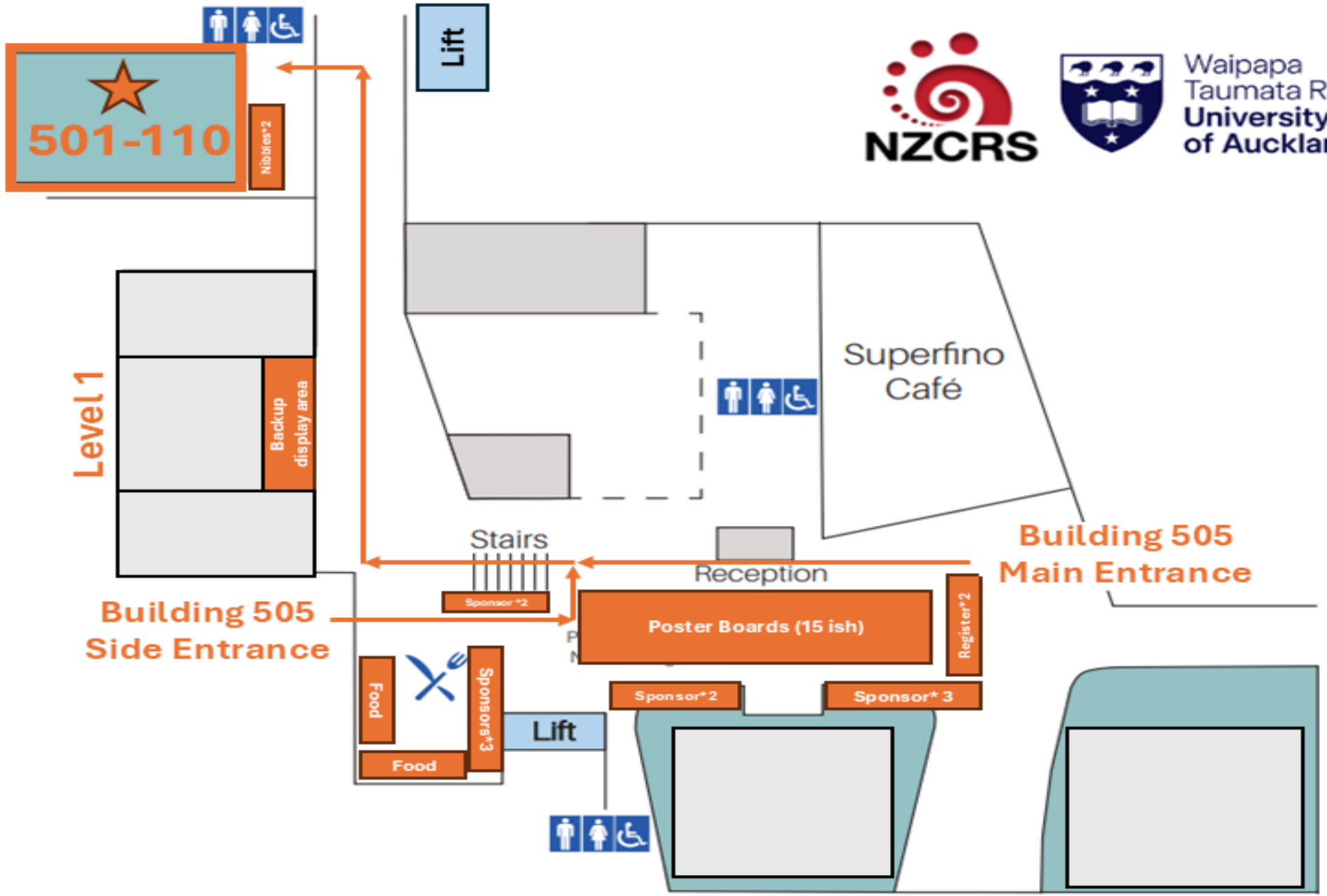
Dr Tanveer Tabish,
Radcliffe Department of Medicine, University of Oxford, Oxford, United Kingdom

Biography: Dr. Tanveer Tabish is Group Leader in Cardiovascular Nanotherapeutics at the Radcliffe Department of Medicine, University of Oxford. His research applies materials science, chemical biology and biomedical engineering to create next-generation functional biomaterials for precision medicine. He specialises in the rational design and chemical functionalisation of nanostructures for targeted drug delivery, bioimaging and real-time sensing. A major focus of his work is developing nitric oxide–releasing nanomedicines for cardiovascular regeneration, with the goal of building responsive delivery systems that adapt to complex biological environments and restore vascular homeostasis. His group explores how redox balance governs cardiovascular health and disease and how therapeutic gases such as nitric oxide can be hitched through nanomedicine to modulate vascular function, mitochondrial activity and inflammatory pathways. This includes designing redox-responsive nanocarriers capable of precise spatiotemporal drug release, as well as advanced imaging tools to monitor nitric oxide fluxes at the subcellular level. Dr. Tabish has published more than 50 peer-reviewed papers, delivered invited lectures at leading international conferences, and holds four patents. His work has been recognised by major funding bodies including the British Heart Foundation, Wellcome Trust, Royal Society, Cancer Research UK and EPSRC, and he received the Larry Hench Young Investigator Prize (UK Society for Biomaterials) for his innovative contributions to biomaterials research.

A/P Defang Ouyang,
Institute of Chinese Medical Sciences,
University of Macau, Macau, China

Biography: Prof. Ouyang has a multidisciplinary background in pharmaceutics & computer modelling, with experience in academia and industry. He obtained his bachelor (2000) and master (2005) in pharmaceutics from Shenyang Pharmaceutical University, China. He completed his PhD in pharmacy at The University of Queensland, Australia, in 2010 and progressed directly to his faculty position (Lecturer in Pharmaceutics, PI) at Aston University (UK). From the end of 2014, he moved to the University of Macau.
Since 2011, he has pioneered the integration of multi-scale modeling, artificial intelligence and big data techniques in the field of drug delivery – "computational pharmaceutics". He has published 2 books, 5 book chapters and over 150 refereed SCI journal papers, along with more than 150 invited talks. He held over 10 approved patents, which had been used in medicinal products. He edited the first book in this research domain <Exploring Computational Pharmaceutics – AI and Modeling in Pharma 4.0> (Wiley, 1st Edition in 2015 & 2nd edition in 2024). He has developed the crucial "Rule of 5" for effective AI drug delivery models and successfully built the first global artificial intelligence (AI)-based formulation platform "FormulationAI"D

A/P Greg Walker,
School of Pharmacy, University of Otago, Dunedin, New Zealand

Biography: Associate Professor Greg Walker received his PhD in Pharmaceutics from the University of Otago and subsequently held postdoctoral positions at the University of Vienna and Ludwig Maximilians University of Munich. Before returning to Otago, he spent 12 years working across academia and industry in Europe. As R&D Manager at the biotechnology company Haemostatix Ltd, he invented the company's lead product, PeproStat™, a topical haemostat designed to control bleeding during surgery. Following a successful Phase I clinical trial, Haemostatix Ltd was acquired by Ergomed plc, and PeproStat™ has since completed a successful Phase II trial.
At Otago, Greg leads a research group focused on addressing formulation challenges for both novel and repurposed compounds. He is also Head of the Animal Health, Pharmaceutical Science and Product Innovations team within the University of Otago which uses formulation science to improve animal welfare.

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