Annual Scientific Retreat 2023





Speaker Profiles

1.		A/Prof. Sng Li Hwei IDRI Co-Director, Snr. Consultant; Dept. of Microbiology & Div. Pathology, SGH		
		Title	Welcome Address	
		Biography	Dr Sng Li-Hwei is a pathologist specializing in medical microbiology, a Senior Consultant, SGH since 2003. She graduated from the National University of Singapore, received microbiology training at the SGH Department of Pathology and the Cleveland Clinic Foundation, USA; and Mycobacteriology specialist training at the Centres of Disease Control and Prevention, Atlanta, USA. She is actively involved in various workgroups for mycobacterial diagnosis and control, and laboratory biosafety. Her interests involve novel diagnostic methods and the integration of advanced technology and testing platforms in clinical diagnostic laboratories, antimicrobial resistance and epidemiological studies, especially mycobacteria. The CTBL serves as the national reference laboratory for tuberculosis (TB) and has collaboration with local and international scientists and researchers in developing TB diagnostics, fingerprinting assays, and studies involving whole genome sequencing and evolutionary biology.	
		Research interests	 Biosafety and Laboratory management Diagnostic methods for the detection and susceptibility testing of mycobacteria, strain typing Antimicrobial resistance 	
		E-mail	sng.li.hwei@singhealth.com.sg	
2.		Ms. Koh Mingshi Director; Chief Health Scientist Office, Ministry of Health, Singapore		
		Title	Sharing of Research Data: Trusted Research and real-world Utilisation & Sharing Tech platform (TRUST)	
		Biography	Ms. Koh Mingshi is the Director @ Chief Health Scientist Office (CHSO), Ministry of Health. Her experience in the biomedical sciences sector spans across strategy development at the national and institutional levels, managing strategic funding initiatives, as well as overseeing research operations. In her capacity at the CHSO, she leads the Office's efforts to foster an enabling environment for health and biomedical research and translation, strengthen the development of MOH's Science & Technology agenda, and advance the translation of research to achieve better health outcomes.	
		E-mail	KOH_Mingshi@moh.gov.sg	
3.		Dr. Ayesa Research Fel	Syenina low, Programme in Emerging Infectious Diseases, Duke-NUS Medical School	
		Title	Baseline enrichment of T and NK cell genes elevates susceptibility to post- MRNA vaccination fatigue	
		Abstract	IDRI-Strategic Collaboration Fund (SCF) 2021 Awardee: Research Project Update	
		Biography	Ayesa completed her PhD training in Public Health at the Saw Swee Hock School of Public Health under the supervision of Prof. Eng Eong Ooi. Her PhD thesis focused on investigating the molecular determinants of dengue virus epidemiological fitness. She is interested in developing molecular tools to assess the outcome of early phase clinical trials of vaccines and therapeutics for infectious diseases.	
		Research interests	 Host-pathogen interactions Molecular determinants of viral epidemiological fitness Pre-clinical and clinical development of therapeutics and vaccines 	
		E-mail	ayesa.syenina@duke-nus.edu.sg	

Annual Scientific Retreat 2023



4.		Dr. Yeo Jia Hao Research Fellow II, Pharmacy - Inpatient Dept., SGH	
		Title	Assessing bactericidal dynamics of persisters-manifested Escherichia coli clinical isolates in the presence of immune cells and antibiotics in-vitro
		Abstract	IDRI-Strategic Collaboration Fund (SCF) 2021 Awardee: Research Project Update
		Biography	 Research Fellow: 2021 to date Pharmacy - Inpatient Dept., SGH Postdoc Position: 2018 - 2020 The University of Sydney, NSW, Australia Doctor of Philosophy (PhD): 2018 The University of Sydney, NSW, Australia Bachelor of Science (Hons I): 2013 The University of Sydney, NSW, Australia Diploma in Biomedical Science: 2008 Temasek Polytechnic, Singapore
		Research	Antimicrobial resistance, Flow cytometry, Microscopy
		interests E-mail	yeo.jia.hao@sgh.com.sg
5.		Dr. Ong Ziying Eugenia Principal Research Scientist, Programme in Emerging Infectious Diseases, Duke-NUS Medical School	
	200	Title	Updates from ViREMiCS
		Biography	Eugenia completed her PhD training in Integrated Biology and Medicine at Duke-NUS Medical School under the supervision of Prof. Eng Eong Ooi. Her PhD thesis focused on investigating Fc-gamma receptor signaling during antibody-enhanced dengue virus infection. She is interested in developing molecular tools that can provide an accurate assessment of safety and efficacy for evaluating vaccines and therapeutics for infectious diseases during early phase clinical trials.
		Research interests	 Antibody-dependent enhancement Host-pathogen interactions Pre-clinical development and adaptive trial design for therapeutics and vaccines
		E-mail	eugenia.ong@duke-nus.edu.sg
6.			n James Smith Director, Programme in Emerging Infectious Diseases, Duke-NUS Medical School
		Title	Emerging Infectious Diseases Programme: Significant Research Highlights
		Biography	Prof. Smith's, primary training was in ecology and evolution at The University of Melbourne. He obtained his PhD from The University of Hong Kong, where he also undertook his post-doctoral training in the Department of Microbiology before joining Duke-NUS in 2010. Prof. Smith's research programme investigates the ecology and evolution of zoonotic viruses and the molecular epidemiology of human respiratory pathogens. Specifically, his work seeks to better understand viral disease ecosystems in Asia, particularly at the animal-human interface, to inform and enhance disease control and prevent pandemic emergence. Prof. Smith has been engaged in research on genetic changes in SARS-COV-2 and their potential implications for the course of the COVID-19 pandemic. Some of his current projects include investigating the intra-host genetic diversity of SARS-CoV-2 to identify mutations that may be indicative of host adaptation, emerging drug resistance or vaccine escape.
		Research interests	 Influenza Respiratory viruses Emerging infectious diseases Evolution Molecular epidemiology
		E-mail	gavin.smith@duke-nus.edu.sg

Annual Scientific Retreat 2023



7.		Prof. Antonio Bertoletti Professor, Programme in Emerging Infectious Diseases, Duke-NUS Medical School		
		Title	Act early and at the right location: kinetic and localization of SARS-CoV-2 T cells	
		Biography	Antonio Bertoletti, MD is an expert in the field of viral hepatitis, with a specific interest in the immunopathogenesis of HBV infection. He began working in viral hepatitis as a medical student at the University of Parma (Italy). During his MD specialization (1991) in Infectious Diseases he spent two years at The Scripps Research Institute (La Jolla) characterizing for the first time the Hepatitis B virus (HBV) specific cytotoxic T cell response in man. He returned to the University of Parma, where he worked in the Department of Infectious Diseases as a Clinical Scientist continuing his study of human HBV specific T cells. Dr. Bertoletti then joined (1995) the MRC Unit in the Gambia, as Senior Immunologist, to study HIV-2 specific T cell Immunity before accepting a position of Senior Lecturer at "The UCL Institute of Hepatology" at University College of London (UK) (1997). In 2006 he moved to Singapore where he was the Director of Infection and Immunity Program at the Singapore Institute for Clinical Sciences (A*STAR) until 2013 before moving, as Full Professor, at the Emerging Viral Disease Program at Duke-NUS Medical School. He also maintains an Adjunct Position at the Singapore Immunology Network, (A*STAR). He won for two consecutive terms the Singapore Translational Research Awards (2013 and 2018).	
			His current research is focus on the development of new immunological based therapies (TCR-redirected T cells) for the treatment of HBV chronic infection and Hepatocellular carcinoma and on the characterization of antiviral Immunity in chronic HBV patients. In the last 2 years, after the start of the COVID-19 pandemic, his laboratory has been actively involved in the characterization of SARS-COV2 specific T cell immune response (Le Bert et al, Nature 2020, 584: 457-62) in COVID-19 and SARS convalescent and healthy individuals.	
		Research interests	Immunopathogenesis of HBV infection T-cell immunotherapy in HBV related HCC and HBV infection	
		E-mail	antonio@duke-nus.edu.sg	

Annual Scientific Retreat 2023



8.		Dr. Shirin Kalimuddin Senior Consultant, Dept. Infectious Diseases, SGH	
		Title	The Staphylococcus aureus Network Adaptive Platform trial (SNAP)
			Dr Shirin Kalimuddin is clinically trained as an infectious disease specialist and currently holds the position of Consultant with the Department of Infectious Diseases at the Singapore General Hospital (SGH). She is also an Assistant Professor with the Emerging Infectious Diseases programme, Duke-NUS Medical School (Duke-NUS).
		Dia awarahar	Dr Kalimuddin was at the forefront of clinical trials to study the safety and efficacy of therapeutics, for the treatment of COVID-19. She was also engaged in research to study the role of virological and host factors in determining COVID-19 outcome.
		Biography	Her research spans basic, translational and clinical sciences. She investigates the role of the gut microbiome in the development of antibiotic-associated gastrointestinal adverse effects. She also studies the application of advanced imaging techniques on dengue patients to define sites of inflammation and plasma leakage. As a member of the Singapore Infectious Disease Clinical Research Network Executive Council, she is also actively involved in several clinical trials studying optimal therapeutic management for MRSA, Klebsiella and multidrug-resistant gram-negative bacterial infections.
			In 2019, Dr Kalimuddin was awarded the NMRC Transition Award.
		Research interests	 Viral infections, in particular Dengue virus Vaccine and therapeutics in Infectious Disease – both early and late phase clinical trials Infectious Disease Epidemiology and Outbreaks
		E-mail	shirin.kalimuddin@singhealth.com.sg
9.	(A)	Andrea Kwa Lay Hoon Assistant Director, Pharmacy (Research), Pharmacy-Inpatient Dept., SGH	
		Title	Implementation of Bacteriophage Therapy for the treatment of refractory resistant infections
			Dr Andrea Kwa received her Doctor of Pharmacy Degree in 2006, from New York's Albany College of Pharmacy and Health Sciences. Prior to this, she had completed her undergraduate studies at the National University of Singapore in 1996. She completed her two-year postdoctoral research fellowship at the University of Pittsburgh's Division of Infectious Diseases, where she researched anti-fungal resistance and molecular diagnostics.
		Biography	Dr Andrea Kwa is currently a Pharmacy Clinician Scientist and Assistant Director of Health Services Related Research Unit at Singapore General Hospital. She is also a faculty member of Duke-NUS Medical School's Emerging Infectious Diseases program. Dr Kwa also heads a laboratory that looks at antimicrobial pharmacodynamics/ pharmacokinetics and resistance at Academia. She also performs health services research involving antimicrobial stewardships, risk factors and outcomes of resistant infections. Dr Kwa has authored more than 60 publications and is an avid reviewer for many scientific journals
		Research interests	 Elucidation of multiple antibiotics in combination against extreme drug resistant bacteria in an one compartment static in-vitro model or a dyamic in-vitro pharmacokinetic/pharmacodynamic two-compartmental model simulating fluctuating clinically achievable antibiotic concentrations. Population pharmacokinetics/pharmacodynamics of antimicrobials. Molecular diagnostics in fungal diseases and anti-fungal resistance. Risk factors and outcomes via statistical modelling. Health services research involving antimicrobial stewardships.
	1	E-mail	andrea.kwa.l.h@sgh.com.sg

Annual Scientific Retreat 2023



10.		Prof. Wang Linfa		
		Professor, Programme in Emerging Infectious Diseases, Duke-NUS Medical School		
		Title	Programme of Research in Epidemic Preparedness and Response (PREPARE)	
		Biography	Prof Wang is a Professor in the Prog. in Emerging Infectious Diseases at Duke-NUS Medical School and the Executive Director of the Programme for Research in Epidemic Preparedness and Response (PREPARE). He is one of the world's leading experts in zoonotic diseases, bat immunology & pathogen discovery. Prof Wang holds a PhD degree from the University of California, Davis USA. He is a member of multiple WHO committees on COVID-19. His work has been internationally & locally recognised through various awards, the very recent one; the Public Administration Silver Medal (COVID-19) & the prestigious Singapore's President Science Award in 2021. He has published in more than 500 scientific papers, invited book chapters & holds nine patents. His recent research contributions include developing antibody based serological tests to detect the SARS-CoV-2 virus, & the early & successful culture of the virus from an infected patient sample. His team is focusing on research into the origins of SARS-CoV-2, developing assays which can better assess vaccine efficacy for a potential immunity passport strategy & a novel vaccination strategy to broaden protective immunity against future variants & emerging SARS-related coronaviruses.	
		Research interests	 Emerging zoonotic viruses and virus-host interaction, specialising in bat-borne viruses Pathogen identification, development of novel diagnostic platforms and better preparedness for EID responses 	
		E-mail	linfa.wang@duke-nus.edu.sg	
11.			ctor, Centre for Population Health Research & Implementation, SingHealth tor, Health Services Research, CGH	
		Title	Centre for Population Health Research and Implementation (CPHRI): A Nexus To Bridge Research & Care Delivery into the Community.	
		Biography	Dr. Oh Hong Choon is the Deputy Director @CPHRI, Data & Analytics Div., within Health Services Research Dept., CGH.	
			After earning his doctoral degree in engineering in 2009, Dr Choon has been involved extensively in healthcare analytics including prescriptive analytics in various public healthcare institutions in Singapore. Besides being invited regularly to give talks or conduct workshops on healthcare analytics, he has received funding support for several research studies as Principal Investigator and Co-Investigator. Moreover, Dr Choon is also lead author and co-author of several peer-reviewed publications in both clinical and engineering journals.	
			Dr. Choon head's the Health Services Research Dept, overseeing the development of health services research in CGH to support management decision-making, and to deliver the best patient outcomes through translating data into evidence to guide decision making.	
		Research interests	• Discrete event simulation, System Dynamics, Prescriptive Analytics and Cost Effectiveness Evaluation.	
		E-mail	oh.hong.choon@singhealth.com.sg	