NUS | iHealthtech

National University of Singapore | Institute for Health Innovation & Technology

iHealthtech Seminar

8 NOV, FRI, 10:30 AM –11:30 AM

NUS, College of Design and Engineering, Building E7, Level 3, Seminar Room 2

Dr Matthew Tay Zirui

Principal Investigator
Antimicrobial Biologics Laboratory
A*STAR Infectious Diseases Labs

Breaking the Chain: Decoding Coronavirus Evolution for Next-Generation Therapeutics

The past two decades have witnessed the emergence of three novel human coronaviruses, two of which have now become endemic. Coronaviruses evolve rapidly in the face of immune pressure. Identifying the degree of mutability in coronaviruses is key toward defining the space that must be covered by next-generation escape-resistant vaccines and therapeutics. These efforts include the identification and targeting of conserved epitopes that are not necessarily immunodominant. This can be done through high-throughput strategies including mammalian cell display, microfluidics-based high-throughput functional screening, and pseudovirus-based deep mutational scanning. Conserved epitopes against diverse coronavirus strains are a basis for development of broadly-neutralizing therapeutics, including monoclonal antibodies and receptor-based decoys. These can enable us to better combat endemic coronaviruses, as well as prepare for emergent coronaviruses.

Speaker biography:

Matthew Zirui Tay graduated in Immunology from Brown University, USA, and then obtained his PhD at Duke University, USA in 2018, where he studied the Fc effector functions of antibodies against HIV-1. He returned as a postdoctoral fellow at the Singapore Immunology Network (SIgN), where he continued research work on antibodies, malaria, and subsequently SARS-CoV-2. He is now a Principal Investigator at the A*STAR Infectious Diseases Labs leading the Antimicrobial Biologics Laboratory, where he is exploring antibody-pathogen interactions and their applications in pandemic preparedness and novel biotherapeutics discovery.

iHealthtech website: Link

Email: ask.iht@nus.edu.sg

Register here

【Link to the registration form】