



Infectious
Diseases Labs

ID LABS



Dr David Bauer

RNA Virus Replication Lab,
The Francis Crick Institute, London, UK



Monday 7th October 2024

11:00 AM to 12:00 PM (SGT)

Venue: Curiosity meeting room,
A*STAR IDL, Immunos Level 5

Dissecting Pathogenicity, Immunity, and Imprinting in COVID-19

The Crick/UCLH Legacy Study has longitudinally followed over 850 healthy working-aged adults in London since 2021. This cohort is unique since its participants were under occupational health PCR screening for COVID-19 for most of the pandemic, and have detailed, known exposure and vaccination histories. Using with the Crick's high throughput live virus neutralisation platform, we have tracked cellular, humoral, and mucosal immunity to emerging variants in real-time, and have been able to dissect complex individual factors that drive both breadth and depth of immunity to SARS-CoV-2. I will also discuss our recent findings, which suggest that early exposures to do not "imprint" individuals' responses to contemporary variants.

In parallel, our group has established small animal models to evaluate pathogenicity of emerging variants within the Crick's ABSL-3 respiratory phenotyping suite. We find surprisingly that symptoms of Legacy Study participants track in part with measurements of pathogenicity in these models, with particular gene expression and metabolic changes being indicative of increased disease severity. I will also discuss work with the Wellcome Trust-funded "West Africa, West Indies, West London Consortium" to unify our understanding of viral and immune factors that contributed to the mild COVID-19 phenotype in West Africa.

Dr David LV Bauer is a virologist at the Francis Crick Institute in London, and heads the RNA Virus Replication Laboratory. The lab seeks to understand how RNA viruses replicate, how the unique properties of their RNA genome contribute to this process, and how immunity develops and in turn influences viral replication and evolution. The lab uses a wide range of models (from human cohort studies and in vivo animal models, to cultured cells and purified proteins in vitro), and focuses on influenza and coronaviruses.

Lab website: <https://www.crick.ac.uk/research/labs/david-lv-bauer>

Hosted by: Prof Lisa Ng

Seminar is open to all. No registration required.

Questions? Contact us at seminars@idlabs.a-star.edu.sg

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