



# NCID MONTHLY RESEARCH MEETING

*BRINGING PEOPLE TOGETHER,  
BRIDGING SCIENCE AND MEDICINE*

**17 Feb 2023 | Friday | 11.00am – 12.00pm**

## About the Meeting

Our research meetings are held every 3<sup>rd</sup> Friday of the month, with the aim to:

- Inspire research ideas and participation
- Provide guidance on research studies
- Foster research collaborations

## Who Should Attend

All who are interested in research are welcome to attend.

## Programme

**11:00 AM Smallpox Vaccine Longevity and Persistent COVID in the Singapore Population**

**Dr Conrad Chan En Zuo**

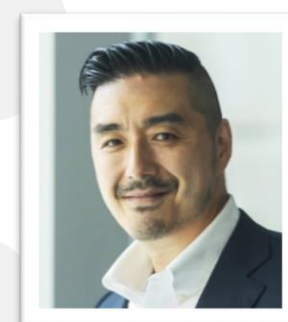
Principal Scientific Officer  
National Centre for Infectious Diseases



**11:30 AM Crowdsourced Combination Therapy for Pandemic Preparedness**

**Prof Dean Ho**

Provost's Chair Professor  
Director, The N.1 Institute for Health (N.1)  
Director, The Institute for Digital Medicine (WisDM)  
Head, Department of Biomedical Engineering  
National University of Singapore



*5 to 10 mins Q&A will follow after each talk*

## To Register

This will be a Zoom meeting.

Visit <https://for.sg/feb23researchmeeting> or scan QR code.

\*CME/CNE/CPE points will be awarded



# Smallpox Vaccine Longevity and Persistent COVID in the Singapore Population

by **Dr Conrad Chan**

Principal Scientific Officer

National Centre for Infectious Diseases

We conducted serological testing of Singaporeans who received childhood smallpox vaccination and found anti-vaccinia IgG binding and neutralizing activity indicating long-term humoral immunity. There was correlation between IgG and neutralizing titres indicating IgG could be used as a surrogate marker for humoral immunity. Separately, an ongoing study in immunocompromised patients with persistent COVID infection show interesting genetic changes.

## Learning Points

1. There is significant residual vaccinia-specific immunity in the Singapore population.
  2. Anti-vaccinia IgG titre can be used as a surrogate marker for humoral immunity.
  3. Sequencing of genomic sequences in patients with persistent COVID indicate mutations reverting back to wild-type.
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# Crowdsourced Combination Therapy for Pandemic Preparedness

by **Prof Dean Ho**

Provost's Chair Professor

Director, The N.1 Institute for Health (N.1)

Director, The Institute for Digital Medicine (WisDM)

Head, Department of Biomedical Engineering, National University of Singapore

A key barrier to combination therapy design has been low clinical success rates. To address this challenge, we harnessed IDentif.AI to rapidly pinpoint actionable regimens towards applications that span SARS-CoV-2 through AMR and beyond. The IDentif.AI workflow is based on early and continuous clinician involvement in drug selection, regimen prioritisation, and validation. Importantly, IDentif.AI findings align with clinical outcomes without requiring data from the respective trials.

## Learning Points

1. IDentif.AI differs from traditional AI in that it does not use pre-existing big data sets.
2. IDentif.AI is not purely computational.
3. In combination therapy design, it is important to move beyond using single drug sensitivity.