

# NCID MONTHLY RESEARCH MEETING:

*BRINGING PEOPLE TOGETHER,  
BRIDGING SCIENCE AND MEDICINE*

**15 Oct 2021 | Friday | 11.00 am – 12.00 pm**

## About the Meeting

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

- 1) Inspire research ideas and participation
- 2) Provide guidance on research studies
- 3) Foster research collaborations

## Who should attend

All who are interested in research are welcome to attend.

## To register

This will be a Zoom meeting. Please register using the link or QR code below.

<http://tiny.cc/octresearchmeeting>



## Programme

11:00 AM **“Using Viral Genetics to Improve Virus Transmission Modelling ”**

by **Dr October Sessions**

Assistant Professor

Saw Swee Hock School of Public Health  
& Department of Pharmacy,  
National University of Singapore

11:30 AM **“Pre-clinical Evaluation of Metformin as a Therapeutic Approach to Fight Dengue”**

by **Mr Cheang You Zhi Nicholas**

PhD Graduate Student

Infectious Diseases Translational Research  
Programme,  
National University of Singapore

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



## Using Viral Genetics to Improve Virus Transmission Modelling

by **Dr October Sessions**

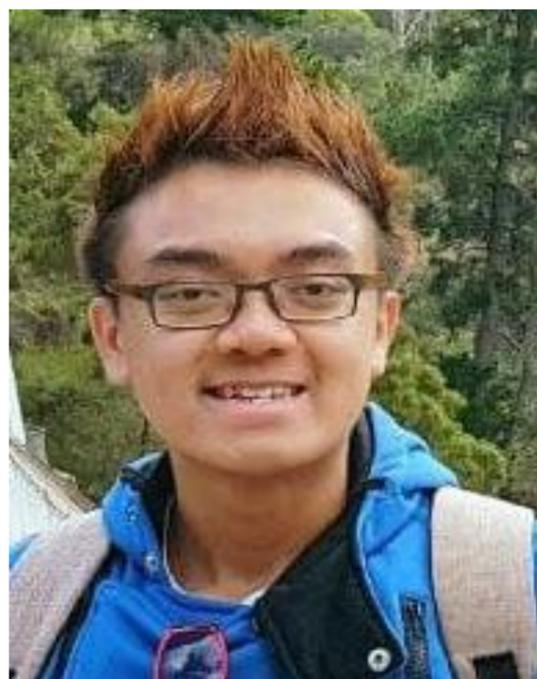
Assistant Professor

Saw Swee Hock School of Public Health & Department of Pharmacy,  
National University of Singapore

Nicaragua experienced a large Zika epidemic in 2016, with up to 50% of the population in Managua infected. With the domesticated *Aedes aegypti* mosquito as its vector, it is widely assumed that Zika virus transmission occurs within the household and/or via human mobility. We investigated these assumptions by using viral genomes to trace Zika transmission spatially.

### Key Learning Points

1. Our finding highlights that community transmission, often involving long geographical distances, played a much more important role in epidemic spread than within-household transmission.
2. Our study has emphasized the importance of implementing vector control measures outside as well as inside homes in order to successfully control future arboviral outbreaks in similar settings.
3. The underlying methods that we describe here are not limited to Zika virus alone - we believe that application of these techniques to other deep sequencing data sets, in particular SARS-CoV-2, would greatly improve existing contact tracing efforts.



## Pre-clinical Evaluation of Metformin as a Therapeutic Approach to Fight Dengue

by **Mr Cheang You Zhi Nicholas**

PhD Graduate Student

Infectious Diseases Translational Research Programme,  
National University of Singapore

Metformin (MET), a first-line antidiabetic drug and indirect AMP-activated protein kinase (AMPK) activator, has recently emerged as a potential anti-DENV therapeutic candidate, based on some experimental evidence supporting anti-DENV activity in vitro and widely reported anti-inflammatory properties.

Here, we examined MET in vitro activity against the four DENV serotypes in two different mammalian cell lines. The in vivo efficacy of Met was also determined using asymptomatic and symptomatic mouse models of dengue.