



NCID MONTHLY RESEARCH MEETING

*BRINGING PEOPLE TOGETHER,
BRIDGING SCIENCE AND MEDICINE*

19 Jan 2024 | Friday | 11.00 am – 12.00 pm

About the Meeting

Our research meetings are held every third 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.

NCID Short Term Fellowship

The scheme, awarded by NCID with funding from Ministry of Health, aims to equip infectious disease professionals/researchers with skills and experience relevant to their area of research, encourage networking and research collaborations with overseas institutions, and provide promising young researchers with exposure to the diversity of infectious diseases research in Asia/Australasia.

Our awardees are invited to share their project findings/experience in a 15mins presentation, inclusive of Q&A.

- 11:00 AM **Spatial Transcriptomics Profiling of Central Nervous System Tuberculosis for Clinical and Mouse Samples**
Dr Loh Fei Kean
- 11:15 AM **What Constitutes Appropriate Therapy for Carbapenem-Resistant *Pseudomonas aeruginosa*?**
Prof David Paterson
- 11:30 AM **Short Term Fellowship to Peter Doherty Institute for Infection and Immunity and Alfred Hospital and Monash University**
Dr Choy Chiaw Yee
- 11:45 AM **Characterisation of Bacterial Extracellular Vesicles for Vaccine Application**
Dr Dinesh Kumar Kesavan

To Register

Visit <https://for.sg/jan24researchmeeting> or scan QR code.

This will be a Zoom session. *CME/CNE/CPE points will be awarded



Spatial Transcriptomics Profiling of Central Nervous System Tuberculosis for Clinical and Mouse Samples

by **Dr Loh Fei Kean** (FY22 Awardee)

Research Fellow

National University of Singapore



Central nervous system tuberculosis (CNS-TB) patients despite anti-tuberculous treatment may suffer permanent neurological complications and death. The immunopathological mechanism of CNS-TB remains undefined. We have performed laser capture microdissection and RNA sequencing for formalin-fixed paraffin-embedded (FFPE) samples from CNS-TB patients and mice model.

During my visit to SAiGENCI at The University of Adelaide, we have developed a preliminary bioinformatics pipeline to determine pathways driving matrix metalloproteinases (MMPs)-associated inflammation in CNS-TB. Pathways associated with inflammatory responses, neutrophil degranulation and extracellular matrix degradation were upregulated, indicating that neutrophils and MMPs may drive CNS-TB immunopathology.

What Constitutes Appropriate Therapy for Carbapenem-Resistant *Pseudomonas aeruginosa*?

by **Prof David Paterson** (FY22 Awardee)

Professor

National University of Singapore



Prof Juan Pablo Horcajada visited Singapore as a recipient of the NCID Short Term Fellowship. His area of expertise is treatment of serious infections with *Pseudomonas aeruginosa*.

Short Term Fellowship to Peter Doherty Institute for Infection and Immunity and Alfred Hospital and Monash University

by **Dr Choy Chiaw Yee** (FY23 Awardee)

Consultant

National Centre for Infectious Diseases



The NIVO-LD study is a phase 1b clinical trial to determine the potential role of nivolumab as a HIV latency reversing agent (LRA). The main site for the study is the Peter Doherty Institute in Melbourne and Singapore is a satellite site.

In preparation for this, the NCID HIV programme visited the Peter Doherty Institute and its affiliated sites to observe the conduct of the NIVO-LD study, the process of how they designed the trials and to establish and strengthen links with clinicians, scientists and other key opinion leaders and domain expert, so as to facilitate ongoing and future opportunities for collaborations and partnerships. We present the lessons gleaned from this fellowship, and how it could be used to improve on our own local research activities.

Characterisation of Bacterial Extracellular Vesicles for Vaccine Application

by **Dr Dinesh Kumar Kesavan** (FY23 Awardee)

Senior Research Fellow

Nanyang Technological University



Purification of extracellular vesicles from different serotypes of *Strep. pneumoniae*. Discussed with Swedish lab experts and worked with them on co-culturing macrophages and T cells and analysing various dosage levels of *Strep. pneumoniae* vesicles in in-vitro and in-vivo studies.