

Sydney Summer School in Pathogen Genomics and Global Health 2023

University of Sydney, Camperdown

13 - 17 February 2023

Expressions of Interest (EOI) Open

This Summer School aims at recent graduates as well as researchers, clinicians and public health professionals that are interested in the field of translational pathogen genomics and communicable disease control. The program includes a mix of inspiring keynotes and master classes from international experts, practical hands-on demonstrations, and laboratory visits. Our team of experienced postdoctoral level tutors will teach the basics of genomics of bacteria, viruses, and fungi with epidemic potential and critically examine the approaches to the analysis of genomes in global health context. Hands-on exercises will be organised to illustrate the power of genomics, functional genomics, and metagenomics in answering important questions on the assessment of evolution, virulence, transmissibility, and drug resistance as well as on detection of outbreaks and deciphering of transmission pathways. The School will also offer opportunities for exchange of ideas and discussions with presenters and fellow participants.

The number of places in the School is limited so the organisers will select participants based on their provided information about motivation, prior knowledge, and interests. Participants are encouraged to submit or bring fastQ files from their own experiments if they prefer to use them as their training exercises.

Course Information

Dates: 13 - 17 February 2023

Venue: University of Sydney, Camperdown and Centre for Infectious Diseases and Microbiology-Public Health, Westmead Hospital, Westmead

EOI Submission Link (EOI close date 2nd December 2022):

<https://redcap.sydney.edu.au/surveys/?s=NRAWRX4LD8MKKFL9>

Registration Fees:

AU\$800.00: General registration fee (Australian & International participants)

AU\$400.00: University of Sydney students and academics (current)

AU\$250.00: International participants from low and middle-income countries

Enquiries: WSLHD-CIDM-PH@health.nsw.gov.au

The Summer School is organized by the Centre for Infectious Diseases and Microbiology – Public Health (CIDM-PH) WSLHD, and Sydney Infectious Diseases Institute (Sydney ID) University of Sydney, with the support of the Sydney Informatics Hub, University of Sydney.



Topics to be covered

- **Main concepts of translational microbial genomics.** What can the analysis of microbial genomes tell translational researchers' clinicians? How to select sequencing and bioinformatics solutions for specific research questions? Genome-wide association studies and patient outcomes
- **Genomics data analytics and visualization.** Integrated data models, data analytics for knowledge discovery and data visualization (we will employ phylogenetics and phylodynamics as case studies)
- **Clinical microbial genomics and metagenomics.** Implementation of microbial genomics in clinical laboratories. Genomics of drug resistance. Tools for responsible genomic data sharing and mobilisation
- **Pathogen Genomics for Precision Public Health and Global Health.** Methods of genomic surveillance. Integration of genomic and epidemiological data: global and local perspectives and solutions. Genomics-guided interventions in hospital and community settings