

Medical Microbiology Post-graduate Diploma: 2023 (Ver 4: 2Apr23)

Overview

This course provides a comprehensive survey of diagnostic microbiology theory and practice. Relevant research from LMIC settings is highlighted. The faculty include LMIC-experienced microbiologists (medical and scientific), infectious diseases physicians and medical research and laboratory scientists.

Target audience

- Postgraduate medical registrars/residents from LMIC settings
- LMIC pathologists or physicians who wish to update their diagnostic microbiology and infectious diseases knowledge
- Other interested health care professionals

Course pre-requisites

Health care professional able to put aside approximately 4 hrs per week for course activities and review of materials.

Course outline and duration

In 2023, there will be 27 weekly modules running across 2 semesters from March (Appendix) with the main lecture occurring on Wednesdays at 12:00 hour, Australian Eastern Standard Time (AEST). The first semester focuses on foundation level content and semester 2 addresses more advanced topics. An online teaching site is used to provide access to recorded presentations and supplementary materials (written and video). Course texts are recommended at the outset with background reading suggested for each module.

Students are expected to participate in the PRIDA journal club (fortnightly, Fridays 12:00 hour AEST) and prepare and present at least one journal article review during 2023. The journal club can also be accessed independently by email to Dr Knippenberg ben.knippenberg@gmail.com. On alternate Fridays, students will be expected to take turns presenting a recent case for discussion.

Course Faculty

- **Assoc. Professor John Ferguson, Microbiologist & Infectious Diseases Physician, John Hunter Hospital, NSW, Australia (Course Coordinator)**
- **Dr Trine Gulholm, Microbiologist & Infectious Diseases Physician, Prince of Wales Hospital, Sydney, NSW, Australia (Course Coordinator)**
- **Dr Ben Knippenberg, Microbiologist & Infectious Diseases Physician, SE Sydney Local Health District, NSW, Australia (Course Coordinator)**
- Dr Khin Chaw, Microbiologist & Infectious Diseases Physician, Brisbane, QLD, Australia
- Dr Chris Ashhurst-Smith, Senior microbiology scientist, Pathology North, NSW, Australia
- Ms Fiona Oehme, Senior microbiology scientist, Pathology North, NSW, Australia
- Dr Rob Norton, Director of Microbiology and Pathology, Townsville University Hospital, QLD, Australia
- Dr David Siebert, Medical Virologist (Pathologist), Infectious Diseases Physician, Princess Alexandra Hospital, QLD, Australia
- Dr Indy Sandaradura, Microbiologist & Infectious Diseases Physician, ICPMR, Westmead Hospital, NSW Australia
- Dr Bianca Graves, Microbiologist, Pathology Queensland, QLD, Australia
- Dr Sarah Cherian, Microbiologist and Pathologist-in-Charge of Sullivan Nicolaidis Pathology
- Dr Claire Heney, Microbiologist, Pathology Queensland, Brisbane, Australia

- Mr Joe Hessel, Pharmacist, Western Pacific - World Health Organisation
- Dr Kate McCarthy, Microbiologist – Pathology Queensland, Infectious diseases Physician, Royal Brisbane Womens Hospital, QLD
- Dr Nikki Townell, Microbiologist & Infectious Diseases Physician, Sunshine Coast University Hospital, QLD, Australia
- Dr Belinda Bin Lin, Microbiologist & Infectious Diseases Physician, Royal Melbourne Hospital and University of Melbourne
- Dr Anthony Elias, Microbiologist & Infectious Diseases Physician, Gosford Hospital, NSW, Australia
- Dr Ian Marr, Microbiologist & Infectious Diseases Physician, Canberra, ACT, Australia and Menzies Institute for East Timor
- Dr Siobhan Hurley, Microbiology and Infectious Diseases Registrar, Prince of Wales Hospital, Sydney, Australia
- Dr Andrew Vallely, Epidemiologist and research scientist, Kirby Institute, NSW, Australia
- Dr Chris Coulter, Microbiologist & Infectious Diseases Physician, Brisbane, QLD, Australia, Director, Queensland Mycobacterium Reference Laboratory,
- Dr Harsha Sheorey, Microbiologist, St Vincent's Hospital, Melbourne, Victoria, Australia
- Dr Syeda Naqvi, Microbiologist & Infectious Diseases Physician, John Hunter Hospital, NSW, Australia

Course assessments and outcome

Attendance at weekly teleconferenced tutorials/lectures and the revision week sessions is expected but not compulsory- recorded tutorials are made available for later review. Each student is expected to complete pre and post module short MCQ tests.

Assessments occur at the end of each semester. Satisfactory completion (mark of at least 50%) is required. An unsatisfactory paper will lead to a request to complete a supplementary assessment.

Student participation in the PRIDA Journal club is expected, including presentation of at least one paper (a journal club mentor is made available to assist). Presentation of at least one case-based discussion is also expected.

Course endorsements

The Fiji National University requires successful completion of this course as a pre-requisite to entry into the Pathology Masters program. The University of PNG currently recommends course completion as part of their post part 1 Master of Medicine (Pathology) program. The RCPA also acknowledges that it supports the course.

This course is certified by CIFAL Newcastle. CIFAL provides certification for training courses that build the capabilities of individuals and communities towards the achievement of the UN Sustainable Development Goals. Participants who successfully complete this course are eligible to receive a Certificate of Completion co-signed by UNITAR (United Nations Institute for Training and Research) and CIFAL Newcastle.

Enrolment process

Enrolment is arranged by emailing the course coordinator – **please email john.ferguson@health.nsw.gov.au before 31st January 2023**. Students can elect to enrol for either or both semesters in a calendar year. We will then contact the prospective student and arrange an enrolment interview prior to formal enrolment when AUD \$50 per semester is payable.

Arrangements will be made by the course faculty for each student to become an [affiliate member of the RCPA](#), enabling access to the laboratory safety and ethics courses and other resources.

Students from each country/location are assigned a specific academic mentor for the course duration.

Appendix: Course Timetable, 2023

Week commencing Monday	Semester week	Wednesday session (unless otherwise specified)	Presenter(s)	Module pre-reading/video instruction	Friday sessions
6/03/2023	1	Introduction to course, mentor and faculty introductions (Monday)	John Ferguson, Ben Knippenberg, Trine Gulholm	CDC Lab training - Basic micro training set enrolment	Journal club
	1	Classification of microbes, pathogenesis, host defences, immunocompromised states (Wednesday)	Khin Chaw	CDC1	
13/03/2023	2	Microscopy procedures, pre-analytical issues, diagnostic stewardship	Rob Norton	CDC2 ACORN guides	
20/03/2023	3	Basic culture media and biochemical tests Second presentation (powerpoint only) - Media practical aspects	Sarah Cherian Chris Ashurst-Smith, Senior Microbiology Scientist	CDC3	Journal club
27/03/2023	4	Gram positive and negative bacterial identification Second presentations for review : MALDI-ToF https://idmic.net/2020/06/17/introduction-to-maldi-tof-mass-spectrometry-two-webinars/	Khin Chaw Tony Elias Dan Lennan	CDC 4 & 5	No session
3/04/2023	5	Molecular microbiology techniques	David Siebert	Video instruction - PCR, genome sequencing techniques	Journal club
10/04/2023	6	Laboratory quality management, principles of internal quality control and external QA	John Ferguson	WHO IQMS Handbook 2011 QSE Stepwise website introductory video	Case presentation
17/04/2023	7	AST, breakpoints, internal quality control, key bacterial resistance phenotypes, multi-resistant organisms	Rob Norton	EUCAST videos	Journal club
24/04/2023	8	Laboratory safety & infection prevention & control	John Ferguson	CDC Lab training - 1 Lab Safety videos	Case presentation
1/05/2023	9	Antibiotics, PK/PD, antibiotic classes	Indy Sanderadura		Journal club
8/05/2023	10	Skin & soft tissue	Kate McCarthy	CAS-Pus bench reading https://idmic.net/2018/09/14/practical-bacteriology-bench-	Case presentation
15/05/2023	11	Respiratory tract infection	Belinda Bin Lin	CAS-resp bench reading https://idmic.net/2019/07/08/video-masterclass-respiratory-	Journal club
22/05/2023	12	GIT infection including rotavirus	Tony Elias	CAS-faeces plate reading https://idmic.net/2018/09/18/video-masterclass-part-3-	Case presentation
29/05/2023	13	Urinary tract infections	Bianca Graves	CAS-urine culture reading https://idmic.net/2018/09/17/video-masterclass-dr-chris-	Journal club
5/06/2023	14	Bloodstream bacterial infection and BSI surveillance/liaison, cardiac infections	Trine Gulholm	Common blood cx gram stains and clinical implications- info sheet	Case presentation
12/06/2023		End of semester revision session End of semester assessment Issue of semester 1 CIFAL certificates	Ben Knippenberg		Journal club
26/06/2023	1	Antimicrobial stewardship	John Ferguson Joe Hessel	WHO Hospital antibiotic policy and STG implementation	Journal club
3/07/2023	2	Tuberculosis diagnosis (Wednesday) Tuberculosis infection control (Friday)	Chris Coulter John Ferguson		Second tutorial
10/07/2023	3	CNS infections including cryptococcal infection	Ian Marr		Journal club
17/07/2023	4	Bone & joint - including diabetic foot infection	Nikki Townell		Case presentation
24/07/2023	5	Intra-abdominal infection Anaerobic infection	Syeda Naqvi		Journal club
31/07/2023	6	Hepatitis viruses - A,B,C,D,E and blood bank (WHO) practice for blood borne virus testing	Sarah Cherian	WHO Transfusion testing reference	Case presentation
7/08/2023	7	STI 1- HIV, HSV, HPV and point of care testing	Andrew Valely		Journal club
14/08/2023	8	Serological testing and antibody/antigen RDTs, Dengue, polio, measles, rubella as examples (Wednesday) Rickettsial infections (Friday)	Tony Elias Stephen Graves		Second tutorial: Rickettsial infections Dr Stephen Graves
21/08/2023	9	Advanced / emerging approaches to diagnostics	Ian Marr		Journal club
28/08/2023	10	STI 2 - Bacterial infections	Slobhan Hurley		Case presentation & lecture - Melioidosis - B Knippenberg
4/09/2023	11	Malaria	Ben Knippenberg		Journal club
11/09/2023	12	Diagnosis of other parasitic infections (protozoans and helminths)	Harsha Sheorey		Case presentation
18/09/2023	13	Fungal infections	David Siebert		Journal club
25/09/2023		End of semester revision session End of semester assessment	John Ferguson		
2/10/2023					Journal club
9/10/2023					
16/10/2023					Journal club
23/10/2023					
30/10/2023		Announcement of successful students Issue of course certificates (CIFAL Semester 2 and PRIDA) Graduation (virtual)			Journal club

