

**ANTIMICROBIAL RESISTANCE Foundations Course,
Tuesdays and Thursdays at **Noon-1:15 PM****

REGISTRATION: please contact elizabeth.lawrence@rice.edu

Wk	Topic (faculty)	Objectives	Dates
1	Drug discovery, non-traditional antibiotics (Julian Hurdle, Danielle Garsin)	Discuss non-traditional antibiotic approaches to combat antibiotic-resistant bacteria.	Tue, Oct 3, 2023
	Genomics and AMR (Blake Hanson)	Provide overview of current genomic tools used to study dissemination and spread of AMR organisms	Thurs, Oct 5, 2023
2	ID Week No class		Tue, Oct 10, 2023
			Thurs, Oct 12, 2023
3	AMR and the environment (Ashok Chopra, Natasha Kirienko)	Summarize the main influence of AMR in the environment (including hospital) in relation to dissemination of AMR determinants and their effect on human health.	Tue, Oct 17, 2023
	Mechanisms of AMR II: β -lactams, fosfomycin, glycopeptides and derivatives, daptomycin and polymyxins (Timothy Palzkill, William Miller)	Antibiotic mechanism of action and resistance; implications for research and therapy	Thurs, Oct 19, 2023
4	Mechanisms of AMR I: macrolides, lincosamides, tetracyclines, oxazolidinones, aminoglycosides, quinolones (Yousif Shamoo)	Antibiotic mechanism of action and resistance; implications for research and therapy	Tue, Oct 24, 2023
	Antibiotic stewardship, infection control (Barbara Trautner, Edward Septimus)	Review most effective approaches for infection control and antibiotic stewardship in the context of emergent resistance in hospital pathogens.	Thurs, Oct 26, 2023
5	New diagnostic approaches in clinical microbiology for diagnosis of resistance (Micah Bhatti, Audrey Wanger)	Discuss new emerging technologies for identification and diagnosis of multidrug-resistant organisms	Tue, Oct 31, 2023
	Pharmacokinetics / pharmacodynamics (Cecilia Truc Tran / Vincent Tam)	Review relevant concepts of PK/PD and their influence on development and prevention of resistance	Thurs, Nov 2, 2023
6	Microbiome and AMR (Samuel Shelburne, Robert Jenq)	Discuss the important interactions of antibiotics with the microbiome and the evolution of AMR organisms	Tue, Nov 7, 2023
	<i>C. difficile</i> : pathogenesis and treatment strategies (Charles Darkoh, Kevin Garey)	Review major mechanisms of fungal resistance and their clinical impact	Thurs, Nov 9, 2023
7	Antifungal resistance (Michael Lorenz)	Examine current concepts related to pathogenesis of <i>C. difficile</i> infections and therapeutic approaches.	Tue, Nov 14, 2023
	AMR: a global public health threat (Cesar Arias)	Provide an overview of main AMR problems and their impact on clinical practice	Thurs, Nov 16, 2023