

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

REGISTRATION: please contact jessica.poli@rice.edu

Zoom link provided once registered for the course

Wk	Topic (faculty)	Objectives	Dates
1	Drug discovery, non-traditional antibiotics (Julian Hurdle)	Discuss non-traditional antibiotic approaches to combat antibiotic-resistant bacteria.	Tue, Oct 4, 2022
	Genomics and AMR (Blake Hanson)	Provide overview of current genomic tools used to study dissemination and spread of AMR organisms	Thurs, Oct 6, 2022
2	Mechanisms of AMR I: macrolides, lincosamides, tetracyclines, oxazolidinones, aminoglycosides, quinolones (Yousif Shamoo, E. Lynn Zechiedrich)	Antibiotic mechanism of action and resistance; implications for research and therapy	Tue, Oct 11, 2022
	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 13, 2022
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 18, 2022
	ID Week No class		Thurs, Oct 20, 2022
4	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.	Tue, Oct 25, 2022
	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	Thurs, Oct 27, 2022
5	Pharmacokinetics / pharmacodynamics (Cecilia Truc Tran)	Review relevant concepts of PK/PD and their influence on development and prevention of resistance	Tue, Nov 1, 2022
	Microbiome and AMR (Samuel Shelburne, Robert Jenq)	Discuss the important interactions of antibiotics with the microbiome and the evolution of AMR organisms	Thurs, Nov 3, 2022
6	Antifungal resistance (Michael Lorenz)	Review major mechanisms of fungal resistance and their clinical impact	Tue, Nov 8, 2022
	<i>C. difficile</i> : pathogenesis and treatment strategies (Charles Darkoh, Kevin Garey)	Examine current concepts related to pathogenesis of <i>C. difficile</i> infections and therapeutic approaches.	Thurs, Nov 10, 2022
7	AMR: a global public health threat (Cesar Arias)	Provide an overview of main AMR problems and their impact on clinical practice	Tue, Nov 14, 2022