

ANTIMICROBIAL RESISTANCE Foundations Course, Tuesday and Thursdays at **Noon-1:00 PM**

REGISTRATION: please contact kethun@rice.edu

Zoom link to come.

| Wk | Topic (faculty) | Objectives | Dates |
|----|--|--|----------------------------|
| 1 | AMR: a global public health threat (Arias) | Provide an overview of main AMR problems and their impact on clinical practice | Tue, Oct 5, 2021 |
| | Genomics and AMR (Hanson) | Provide overview of current genomic tools used to study dissemination and spread of AMR organisms | Thurs, Oct 7, 2021 |
| 2 | Mechanisms of AMR I: macrolides, lincosamides, tetracyclines, oxazolidinones, aminoglycosides, quinolones (Shamoo, Zechiedrich) | Antibiotic mechanism of action and resistance; implications for research and therapy | Tue, Oct 12, 2021 |
| | Mechanisms of AMR II: β -lactams, fosfomycin, glycopeptides and derivatives, daptomycin and polymyxins (Palzkill, Miller) | Antibiotic mechanism of action and resistance; implications for research and therapy | Thur, Oct 14, 2021 |
| 3 | Pharmacokinetics / pharmacodynamics (Tam, Tran) | Review relevant concepts of PK/PD and their influence on development and prevention of resistance | Tue, Oct 19, 2021 |
| | Microbiome and AMR (Shelburne, Jenq) | Discuss the important interactions of antibiotics with the microbiome and the evolution of AMR organisms | Thurs, Oct 21, 2021 |
| 4 | Antibiotic stewardship, infection control (Trautner, Septimus) | Review most effective approaches for infection control and antibiotic stewardship in the context of emergent resistance in hospital pathogens. | Tue, Oct 26, 2021 |
| | New diagnostic approaches in clinical microbiology for diagnosis of resistance (Bhatti, Wanger) | Discuss new emerging technologies for identification and diagnosis of multidrug-resistant organisms | Thurs, Oct 28, 2021 |
| 5 | AMR and the environment (Chopra, 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, Nov 2, 2021 |
| | Drug discovery, non-traditional antibiotics (Garsin, Hurdle) | Discuss non-traditional antibiotic approaches to combat antibiotic-resistant bacteria. | Thurs, Nov 4, 2021 |
| 6 | Antifungal resistance (Lorenz, Aitken) | Review major mechanisms of fungal resistance and their clinical impact | Tue, Nov 9, 2021 |
| | <i>C. difficile</i> : pathogenesis and treatment strategies (Darkoh, Garey) | Examine current concepts related to pathogenesis of <i>C. difficile</i> infections and therapeutic approaches. | Thurs, Nov 11, 2021 |