

## **BMI Teaching Trends Newsletter – March 2021**

### **Teaching Matters**

The Medical Microbiology and Immunology Course and Its History of Firsts  
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Medical Microbiology and Immunology has been a pioneer in progressive lecture and small group delivery methods for the past 25 years. The medical microbiology curriculum was transitioned to an organ system-based structure in 1996 which allowed faculty from the Division of Infectious Diseases (ID) to participate in the course as lecturers and small group leaders. Lectures were structured so that a basic science faculty member provided a foundation in pathogenic mechanisms followed by presentation of the disease and its therapeutic interventions by an ID faculty member. PharmDs were asked to teach the foundations and clinical aspects of antimicrobial use as part of the course beginning in the late 1990s. Because the PharmDs were hospital-based practitioners they coordinated their lecture presentations with their ID colleagues so that students were exposed to state-of-the-art information on antimicrobial use. PharmDs were ultimately recruited to participate throughout the medical school curriculum teaching areas within their respective specialties in the Pathophysiology course, which was also organ system-based. In addition to expanding the disciplines involved in the Medical Microbiology and Immunology course, the responsible faculty have been the innovators in classroom educational technologies.

A 2002 grant to support educational technology infrastructure and software development was used to pilot the use of Pocket PCs for interactive teaching in the Medical Immunology and Microbiology course. Following the success of the pilot, these wireless devices, which pre-dated the smartphone, were required of all medical students to use for interactive learning, point-of-care access to information, and patient tracking. Another application that started with the Medical Microbiology and Immunology course was the video recording and distribution of lectures. There were no direct capture methods at that time so the School of Medicine hired audiovisual technicians to video tape and transfer lectures to CDs for distribution to medical students. In keeping with student expectations for on-demand access to course content, lecture capture and asynchronous delivery spread throughout the remaining medical school courses and then the university. Of course, this technology has forever changed the classroom environment and teaching methods. These two interventions, the distribution of prerecorded lectures for preparatory review and the Pocket PC for in class access to audience response software, were used to flip the classroom by the Medical Microbiology and Immunology course faculty long before that method became a widespread practice in higher education. Another element of the course which is not a first but a key contribution by the department faculty is the wet lab.

The wet lab teaching experience as a component of the Medical Microbiology and Immunology course has endured the pressures of budget and time constraints. In 2006, during a period when schools were aggressively eliminating wet lab experiences from medical school

curricula, the Wayne State Medical Immunology and Microbiology course was presented as the model for maintaining labs during a debate of the topic at the Association of Medical School Microbiology and Immunology Chairs Educational Strategies Workshop. Medical Microbiology and Immunology course directors in attendance were in favor of maintaining wet labs in spite of the pressures from their school administration to eliminate them. Observation of the lab assays that are required for clinical diagnosis and the immersive learning environment of labs were cited as reasons to maintain them. Faculty and graduate students from the Biochemistry, Microbiology and Immunology Department reflect these opinions by demonstrating a continued commitment wet lab teaching, consistently staffing 12 sections that run simultaneously. BMI's recent transition to virtual labs due to the pandemic is another example of the adaptability and commitment of the department faculty.