



Laboratory Medicine in the Era of Disruptive Technology

# LMCE 2017 & KSLM 58<sup>th</sup> Annual Meeting

October 18-20, 2017

Grand Walkerhill Seoul, Korea

[www.lmce-kslm.org](http://www.lmce-kslm.org)

## **Advancing clinical microbiology with MALDI-TOF MS: From implementation to Beta-Lactamase testing.**

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The implementation of matrix-assisted laser desorption ionization time-of-flight mass spectrometry (MALDI-TOF MS) for the routine identification of bacteria and yeast has revolutionized the practice of Clinical Microbiology around the world. Beyond organism identification, MALDI-TOF MS is now being utilized for advanced applications such as direct identification of organisms from positive blood cultures and detection of antimicrobial resistance mechanisms, such as the production of beta-lactamases. This lecture will discuss some of the lessons learned about the implementation of MALDI-TOF MS for organism identification. Specifically, we will discuss the basics of performing MALDI-TOF MS identification with a focus on the various work-flows that can be considered in order to optimize patient care. We will conclude with a discussion of some advanced uses of MALDI-TOF MS with a specific focus on beta-lactamase testing using the STAR BL assay (Bruker Daltonics).