

Department of Molecular and Cellular Biology
Graduate Seminar MCB*6500

Friday, October 30, 2020 @12:00 PM

presented by:

Benjamin Muselius

(Advisor: Dr. J. Geddes-McAlister)

“Characterizing the action of TolA as a klebicin import factor in *Klebsiella pneumoniae*”

Bacteriocins are a class of bacterial toxins that inhibit growth of a narrow range of bacteria with no collateral effects. I will investigate bacteriocins that target *Klebsiella pneumoniae*, klebicins, to gain a better understanding of how the Tol-Pal pathway is exploited by this class of bacteriocin to enter bacterial cells. I will first construct a strain of *K. pneumoniae* lacking *tolA*. I will then use a variety of assays, including mass spectrometry-based proteomics to characterize this new strain. Finally, I will compare the susceptibility of the mutant and wild type strains to selected klebicins that utilize the Tol-Pal pathway to infiltrate the cell. The long-term goal of my research is to understand the effects of physiological host conditions that can reduce TolA expression in *K. pneumoniae*, leading to reduced susceptibility to klebicins. Bacteriocins have been proposed as an alternative to antibiotics and my research will help in understanding their viability for clinical use.