

***Staphylococcus aureus* pathogenesis within the polymicrobial diabetic chronic wound**

Velez, Amanda¹; Parsons, Joshua¹; Tong, Heather¹; Rowe, Sarah¹; Conlon, Brian¹

¹Department of Microbiology and Immunology, University of North Carolina, Chapel Hill, NC 27599

Diabetes is a growing health crisis, and a serious complication of diabetes is the development of foot ulcerations, which are slow to heal and at high risk for infection. The majority of diabetic foot infections are polymicrobial, with *Staphylococcus aureus* being the most frequent pathogen isolated. For the current study, our methodology includes the establishment of a diabetic chronic wound polymicrobial infection model in SKH1-Elite nude mice. Using this model, we examined *S. aureus* pathogenesis and response to antibiotic treatment when co-infecting with microbes commonly isolated from diabetic foot infections, such as *Enterococcus faecalis*. We observed decreased dissemination of *S. aureus* from the wound during co-infection with *E. faecalis*, increased ability of *E. faecalis* to establish within the wound during co-infection with *S. aureus*, and decreased expression of *S. aureus* virulence genes during co-infection with *E. faecalis*. We hypothesize that *E. faecalis* promotes *S. aureus* commensalism, decreasing virulence factor expression and dissemination from the wound site. Our results suggest that the study of co-infection provides an altered picture of *S. aureus* pathogenesis within the diabetic host and may serve as a strategy to manipulate the course of infection.

Presentation author: *Select one*

	Undergraduate Student
	Graduate Student MS
X	Graduate Student PhD
	Post-Doctoral Researcher
	Professor/Professional

Presentation type preference: *Select one*

Rank	Presentation type
	Oral
X	Poster

[Submit your abstract as a Word document .doc or .docx]