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Friday, March 3, 2017
at 10 a.m. in SSC 2315

“Clostridium difficile Pathogenesis:
New Lessons Learned from an Old Foe”

Clostridium difficile is a Gram-positive, anaerobic, spore-forming, enteric pathogen. It is a causative agent of antibiotic-associated diarrhea and, in a subset of patients, can engender severe sequelae. C. difficile infection (CDI) impacts healthcare systems across North America, and the pathogen has been designated as an “Urgent” threat to US healthcare.

Toxins A and B (TcdA and TcdB respectively), the primary C. difficile virulence factors, are significant mediators of intestinal damage and pathology. However, the contributions of non-toxin virulence factors to C. difficile colonization and disease are beginning to be increasingly appreciated. Like many enteric pathogens, C. difficile must associate with the intestinal mucosa to begin the process of host colonization. Current research endeavors in our laboratory focus on cell-surface moieties that mediate C. difficile colonization and impact virulence. Specifically, we study para-crystalline surface proteins such as SlpA, a major contributor to C. difficile adherence. Pre-treatment of host cells with crude or purified SlpA, or incubation of vegetative bacteria with anti-SlpA antisera significantly reduces C. difficile attachment. We are also intensively investigating PSII, a cell-wall glycopolymer that modulates innate immune response(s) during C. difficile infection. Taken together, our studies reveal active remodeling of the bacterial cell surface in virulent strains of C. difficile, as well as critical roles for surface-associated molecules in C. difficile colonization and disease.

Dr. Vedantam is serving as the External Examiner for Christian Carlucci’s Ph.D. Final Oral Examination on Thursday, March 2, 2017.

Everyone is welcome to attend