The Ohio State University

The William G. Lowrie Department of Chemical and Biomolecular

Engineering Graduate Program

Cordially invites you to attend a seminar on

Profiling Immune Responses for HIV Prevention with a Global Impact

Ivana Parker

Assistant Professor J. Crayton Pruitt Family Department of Biomedical Engineering University of Florida

Thursday, April 6th, 11:30 AM 130 Koffolt Lab CBEC 151 W Woodruff Ave Reception at 11:00 AM - CBEC Lobby

<u>Bio</u>

Dr. Ivana Parker is a Fulbright Scholar who recently completed a year-long study at the University of Cape Town in South Africa. Her project assessed the risk of a commonly used tuberculosis vaccine, BCG, on HIV susceptibility in infants using proteomics and systems biology approaches. She completed a two-year postdoctoral fellowship as an American Society for Microbiology postdoctoral fellow at the Centers for Disease Control within the Division of HIV/AIDS Prevention. Ivana received her PhD in Bioengineering from Georgia Tech in 2015. During her time at Georgia Tech, she received the NSF graduate research fellowship and was selected to be a trainee on an NIH Cell and Tissue Engineering Training Grant. She also received a Whitaker Grant to develop artificial aortic valves in Cape Town, South Africa and facilitated set-up of a lab in Addis Ababa, Ethiopia during her PhD training. Ivana earned her BS in Mechanical Engineering from the University of Florida in 2009.

<u>Abstract</u>

HIV remains a global epidemic and currently 37.9 million people are living with HIV worldwide (UNAIDS, 2018). Various prevention strategies, including pre-exposure prophylaxis (PrEP) and antiretroviral treatment in pregnant women with HIV have shown to be effective in decreasing HIV transmission. As these prevention strategies are becoming more commonly used, it is important to understand their effects on HIV antibody responses relevant for proper diagnosis and treatment. In addition, elucidating inflammatory responses/mediators that can increase HIV susceptibility is also key in to reducing HIV transmission. Altered immune responses in patients with HIV that occur as a response to PrEP, are poorly understood and the tools to characterize this altered response is lacking. Furthermore, as chronic inflammation is an important risk factor that can increase HIV risk, it is important to increase understanding of mechanisms mediating these processes. This talk will discuss the methods I have developed to explore immune responses related to HIV prevention and diagnosis, from characterization of HIV antibodies commonly used for diagnostic tests, to proteomics-based systems biology approaches used to analyze epigenetic mechanisms of inflammation mediating increased HIV susceptibility.

