



Wylie, Kristine

Dr. Kristine Wylie is an Assistant Professor in the Department of Pediatrics at Washington University School of Medicine and the McDonnell Genome Institute. Her main research interest is the study of the dynamics of the microbiome and microbial infections during pregnancy. As a virologist, she is particularly interested in studying the virome (the viral component of the microbiome). During Dr. Wylie's postdoctoral work, she developed methods for analyzing high-throughput metagenomic shotgun sequence data sets to study the human virome. Dr. Wylie analyzed the virome (eukaryotic viruses) in the healthy subjects from the Human Microbiome Project, providing the first analysis of the commensal virome in a large cohort of generally healthy, asymptomatic people. She and her colleagues developed a targeted sequence capture panel, ViroCap, designed to enrich nucleic acid from eukaryotic DNA and RNA viruses from 34 families that infect vertebrate hosts. This approach greatly enhances the study of eukaryotic viruses using metagenomic sequencing. Using these methods, she and her colleagues have found that characteristics of the eukaryotic virome in the vagina associate with preterm birth. They are currently studying the dynamic associations between the vaginal microbiome (viruses and bacteria) and host response in a larger cohort of pregnant women and carrying out in vitro experiments to understand the mechanisms underlying associations between the microbiome and preterm birth.