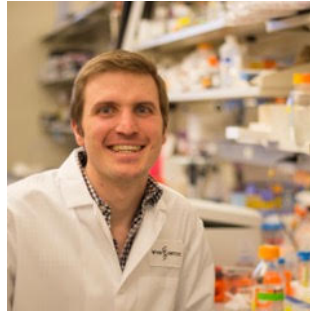




Channing Microbiome Seminar

February 12, 2016, 11am @ 5th floor conference room



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Gut Feelings: engineering bacterial circuits to probe the mammalian gut in sickness and in health

Abstract: Our ability to non-invasively interrogate the mammalian gut remains extremely limited, making diagnosis and monitoring of gut diseases difficult, slow, and often unreliable. In particular, current techniques are either invasive and costly, such as colonoscopy which costs the US ~\$10 billion/ year, or rely on the extremely limited set of indirect biomarkers that are stable enough to be excreted in feces. The same methodological limitations have broader impacts also, with many fundamental questions unanswered on a more basic level. For example, current technology is unable to measure the growth dynamics of individual bacteria. This question, however, is central to understanding colonization of the gut by pathogens and probiotics alike. To address these issues we are developing engineered bacteria as sensors of the mammalian gut. Using these bacteria as tools we aim to better understand gut function and to better detect and understand gut disorders.

Bio: David Riglar, PhD, is a Human Frontier Science Program postdoctoral fellow and the 2014 RG Menzies/ NHMRC fellow with Prof. Pamela Silver at Harvard Medical School. His research aims to utilize synthetic biology for the development of live biological sensors to functionally probe the mammalian gut. Prior to joining the Silver lab David completed his PhD at the Walter and Eliza Hall Institute and University of Melbourne, Australia. His PhD research focussed on the process of red blood cell invasion by malaria parasites, and included the development of methods to visualize this process in super-resolution. David's work has led to various accolades, including the Victorian Young Achiever's Award and a commendation in the Victorian Premier's Award for Health and Medical Research.

Hosted by Yang-Yu Liu