Derek Cummings is an infectious disease epidemiologist who studies the transmission dynamics of dengue, influenza, coronaviruses, Zika and other pathogens. His work is focused on developing effective strategies for the control of these infectious diseases using a combination of field, trial and theoretical techniques. Much of his work is focused on immunity in individuals and populations and its impact on the ecology, evolution and transmission dynamics of pathogens. His recent work includes a study of the phylodynamics and antigenic landscapes of dengue viruses in Thailand, a randomized trial of mosquito interventions against dengue in Brazil, work to characterize serological responses to SARS-CoV-2 and studies of the immune landscapes of human influenza in Southern China (the FluScape study).