The Covid-19 pandemic continues to impact the health and well-being of communities all across the globe. From the outset, epidemic models have played a key role in advancing understanding of the potential threat and in shaping public health responses. In this talk, I will highlight both near- and long-term challenges in controlling Covid-19. In doing so, I will focus on ongoing efforts to characterize non-canonical features of spread (including gathering-associated risk and the impacts of heterogeneity) as well as efforts to use testing (including PCR and serological tests), as a means to mitigate and control ongoing spread.