DANIEL COOMBS, University of British Columbia, Dept. of Mathematics, Vancouver, BC V6T 1Z2
Virus competition at multiple scales

Viruses compete and are subject to natural selection at multiple levels: within-cell, within-host and within-population (of hosts). We looked at how viruses can optimally exploit their hosts and how this behaviour may influence the most successful strategy at the between-host, or epidemiological level. I will present a fairly general way to consistently combine models of disease process and disease spread with the goal of understanding the net selection pressure on a model virus. The method is illustrated using a popular model for HIV dynamics nested within a simple epidemiological model.

This is joint work with Mike Gilchrist (Tennessee).