Controlling infection within heterogeneous populations

Dr K A Jane White, Department of Mathematical Sciences, University of Bath.

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Public information

During my visit to NIMBioS, I explored the potential for ideas in classic engineering control to be exploited for control of infectious diseases. I focussed on a mathematical model for an infectious disease outbreak which meant that I could use a simplified model to which the classical control theory can be applied. I was able to show the importance of prior information in creating an effective control and I was able to compare different control strategies to see what each might offer and how each might be implemented. Some additional numerical work is needed to complete this preliminary study which I will use as a basis for my follow-up visit next summer. At that time, Professor Lenhart and I shall work on a more complicated, nonlinear problem which can be used to describe infection in a highly heterogeneous population .

Whilst at NIMBioS, I had many fruitful discussions and planning sessions with Prof Suzanne Lenhart, NIMBioS, Math Department, University of Tennessee, Knoxville.