NIMBioS Interdisciplinary Seminar
3:30 p.m.**, Tuesday, January 15, 2013

Dr. Odo Diekmann*
Mathematical Institute, Utrecht University
NIMBioS Postdoctoral Fellows Invited Distinguished Visitor

Hallam Auditorium, Room 206
Claxton Education Building, 1122 Volunteer Blvd.

"How to compute R_0?
(The general idea and a complicated example)"

After introducing some general concepts underlying structured population models, in particular the notions of i-state (i for individual) and i-state-at-birth, I shall focus on the way to deduce generation dynamics from real time dynamics and show how to construct a next-generation matrix from a decomposition of the relevant Jacobi matrix into a transition part and a transmission part. Next I will consider a model for infectious disease transmission on a dynamic sexual network. The population model incorporates demographic turnover as well as, for each individual, a variable number of simultaneous partnerships. The resulting network serves as a template for the transmission of an infectious disease. The first aim is to characterize R_0. The ultimate aim is to shed some light on the impact of concurrency on the spread of HIV. This part of the talk is based on ongoing joint work with KaYin Leung and Mirjam Kretzschmar.

***Join us for refreshments at 3 p.m. in the 1st floor visitor breakroom.*

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