

Inaugural edition: Summer School Network Statistics In Health Research

This course will be organised from 18-22 August 2014 at Ghent University Hospital, Belgium.

Summer School Programme

Participants of this one-week summer school will be introduced to the field of statistical analysis of network data, with an emphasis of model applications in health research.

After a brief review of traditional compartmental (SIR) models and the methodology for classical descriptive network analysis, (static) Exponential family Random Graph Models (ERGMs) and dynamic temporal ERGMS will be introduced. ERGMs represent the processes that drive the formation of links in networks and are a natural and flexible tool to model (sexual) network data. Participants will learn how to develop stochastic network models for epidemics, with a focus on empirical models of HIV transmission and control.

Stochastic Actor Oriented Models (SAOMs) offer an alternative approach to model the evolution of a network, and the changes in actor attributes. In this modelling framework, individuals change their network ties and adjust their attributes (such as health seeking behaviours) in response to the current network. The approach allows distinguishing processes of selection and influence in network contexts.

During computer lab sessions, participants will go through examples and tutorials with applications of both the ERGM and SAOM approach to modelling network data. The labs

will develop programming skills, using the R packages *statnet*, *EpiModel*, and *RSiena*. These software packages provide state-of-the-art tools for statistical network analysis, simulation and visualisation.

Participants

There are only 25 spaces available. Participants are expected to bring their own laptop computer, with R and RStudio pre-installed. Although experience with R is not strictly required, participants who have not previously used R are advised to familiarise themselves with the R language, using suggested tutorials.

This summer school is primarily aimed at PhD and Master's students from Flemish Universities, but applications from other (post-doctoral) researchers, as well as applicants from non-Flemish institutions are welcome too.

Instructors

Kate Sabot - London School of Hygiene & Tropical Medicine

Martina Morris, Steven Goodreau and Samuel Jenness - University of Washington Per Block, Nuffield College and University of Oxford

For more information visit our website:
<http://www.networkstatisticsinhealth.ugent.be/>