Queen Mary
University of London

CoSyDy meeting on
Complexity and Epidemic Dynamics

Organisers: Leon Danon and Rosemary J. Harris
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Monday, 31st March 2014

Description

Complex systems theory has played an increasingly important role in infectious disease epidemiology. From the fundamental basis of transmission between two interacting individuals, complexity can emerge at all scales, from small outbreaks to global pandemics. Traditional ODE models rely on simplistic characterisations of interactions and transmission, but as more and more data become available these are no longer necessary. The descriptive and predictive power of transmission models can be improved by statistical descriptions of behaviour and movement of individuals, and tools from complex systems contribute greatly to the discussion.

This workshop will cover advances in mathematical epidemiology that have been shaped by complex systems approaches. The workshop is intended to cover a broad spectrum of topics, from theoretical aspects of transmission on networks to current work shaping public policy on diseases of livestock and honey bees.

Schedule

11:30–12:10	Vincent Jansen, *Royal Holloway, University of London* *Rats, Fleas and the Tip of the Tongues: Modelling the Epidemiology of the Plague*
12:10–12:40	Jon Read, *University of Liverpool* *Mobility, social encounter patterns and influenza exposure in Southern China*
12:40–13:30	Buffet Lunch
13:30–14:10	Frank Ball, *University of Nottingham* *Epidemics on random networks with tunable clustering, degree correlation and degree distribution*
14:10–14:40	Kieran Sharkey, *University of Liverpool* *Prevalence, invasion and duality for SIS dynamics on finite Networks*
14:40–15:10	Helen Johnson, *London School of Hygiene and Tropical Medicine* *Keeping it Real: Calibration and Parametric Inference for Complex Epidemic Models*
15:10–15:40	Tea and Coffee
15:40–16:20	Rowland Kao, *University of Glasgow* *Supersize me: how big data and whole genome sequencing are transforming epidemiology*
16:20–16:50	Mike Tildesley, *University of Exeter* *Mathematical Modelling of Infectious Diseases in the Presence of Uncertainty*
16:50–17:20	Samik Datta, *University of Warwick* *Modelling the spread of disease in honeybees*
17:20–	Drinks and discussion

Information and registration

The meeting will be held in the Maths Lecture Theatre in the Mathematics Building at Queen Mary University of London. Directions can be found at `http://www.maths.qmul.ac.uk/about-us/travel-details` and the nearest underground stations are Stepney Green (District Line) and Mile End (Central Line)

Attendance at this workshop is free and open to everyone. However, for catering purposes, please register your attendance via email to l.danon@qmul.ac.uk or rosemary.harris@qmul.ac.uk by 21st March.

The meeting is part of the CoSyDy series, a London Mathematical Society Scheme 3 network bringing together UK mathematicians investigating Complex Systems Dynamics. Travel support is available for participants from the member nodes.