Centre for Transformative Innovation

Social Network Analysis 4-Day Course
Theory, Method and Application

14-17 February 2017, Swinburne Hawthorn Campus

In this 4-day intensive course you will learn how to conduct social network research, moving from the fundamentals of networks to how to use cutting-edge statistical network models. Some general statistical knowledge is assumed. You will require your own PC laptop (or Mac with Windows installed). The course will cover the following key points:

Day 1: Network Fundamentals
- What is distinctive about social network research?
- Network representations and network data.
- Qualitative versus quantitative data collection.
- Primary versus secondary data collection.
- Ethics and network research.
- Organisational network methods.
- Data entry, data processing and management.
- Software options for visualisation and analysis
- Network Case Study: Network research design.

Day 2: Key Concepts & Descriptive SNA
- Density and reciprocity.
- Clustering and triadic closure.
- Influential nodes and degree distributions.
- Preferential attachment and small worlds.
- Actor attributes.
- Multiplex and bipartite networks.
- Simple random graph distributions.
- Network Case Study: Why do we need statistical models for social networks?

Day 3: Introduction to ERGM
- What are exponential random graph models?
- Formation of network structure.
- MPNet software for network models.
- Working with graph distributions.
- Dependence assumptions: Bernoulli, Markov and Social Circuit models.
- Estimating ERGMs (modelling network data).
- Network Case Study: ERGMs for organisations.

Day 4: ERGM extensions
- Simulation and Goodness of Fit with ERGM.
- Estimating directed ERGMs.
- Estimating ERGMs with actor attributes.
- Multilevel networks.
- Causality in networks.
- ALAAMs – social influence models.
- Problem solving for ERGM model fit.
- Future directions.
- Network Case Study: Applications of ERGM.

Click here for workshop registration

The course includes all course exercise materials, lunch and afternoon tea.

Lecturers: Associate Professor Dean Lusher, Dr Peng Wang, Prof Garry Robins, Dr Julien Brailly & Dr Colin Gallagher
Cost: $2,400 (Full-time PhD students $1,200; discounts for Swinburne staff and students)
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