

Longitudinal Network Analysis with RSIENA

Five-day course, 16th to 20th September 2013

Presented by

Department of Management at the University of Bologna

School of Economics, Management and Statistics at the University of Bologna

Location: [CeUB \(Bertinoro\)](http://www.ceub.it/default.asp?id=346) (<http://www.ceub.it/default.asp?id=346>) - University of Bologna

Instructor: [Christian Steglich](http://www.ppsw.rug.nl/~steglich/sites/index.htm) (<http://www.ppsw.rug.nl/~steglich/sites/index.htm>)

Content

The course is designed primarily for researchers who are currently doing longitudinal social network research or who are embarking upon it. More specifically, the course is about how to analyze *panel* data (observed at two or more discrete moments in time) on *complete* social networks (all the network ties within a set of actors are observed as present or absent, except a moderate amount of missing data). The course will treat the statistical modeling of the dynamics of social networks and of the co-evolution of networks and actors, according to the actor-based approach of *SIENA* models. Some attention will be given also to non-longitudinal network models, the so-called Exponential Random Graph Models (ERGM).

The course will cover both theoretical and practical issues and includes extensive laboratory practice with RSIENA, the implementation of SIENA models in the R environment for statistical computing. For extensive information, materials and references about the statistical analysis of social network dynamics and the SIENA approach see the [SIENA website](http://www.stats.ox.ac.uk/~snijders/siena/) (<http://www.stats.ox.ac.uk/~snijders/siena/>)

Those who are new to Social Network Analysis are advised to look at some introductory materials, such as:

- The free online textbook on social network analysis (2005) by Robert Hanneman and Mark Riddle, [Introduction to social network methods](http://faculty.ucr.edu/~hanneman/nettext/) (<http://faculty.ucr.edu/~hanneman/nettext/>)
- John Scott, *Social Network Analysis: A Handbook*. (2nd edition). Sage, 2000

Instructor

Christian Steglich is a very experienced instructor of this course, which he taught many times (included two previous editions at the University of Bologna, Bertinoro Centre, in 2009 and 2011) and is still currently teaching around the world. He began his academic career under the mentorship of Tom Snijders, who first introduced this approach for the statistical modeling of social network dynamics in the late 1990s.

Christian Steglich currently works as a researcher at the ICS research school and the Faculty of Behavioral and Social Sciences of the University of Groningen. His research is mainly concerned with the formal modeling of network structure and network dynamics, with special focus on social influence processes in the context of a changing network.

Fee and accommodation

The registration fee is 600 euro (VAT included). The fee includes course and materials, coffee breaks (morning and afternoon), internet access (WiFi and LAN). Participants are expected to bring their own laptop for laboratory practice.

Room accommodation, lunches and dinners are not included in the registration fee. Rooms are available at cheap rates inside the university facility that hosts the course (buffet breakfast and self-service lunch included in the room price). Room reservation can be done together with the course registration.

Course registration and room reservation

Venue

The course is held at the Bertinoro Centre of the University of Bologna, a facility of the university located in the restored medieval castle on the top of Bertinoro, small town on the hills between Forlì and Cesena, 80 km south of Bologna.

[Bertinoro Centre](http://www.ceub.it/default.asp?id=346) (<http://www.ceub.it/default.asp?id=346>)

[Location and Directions](http://www.ceub.it/default.asp?id=435#.UQ9alfK57NI) (<http://www.ceub.it/default.asp?id=435#.UQ9alfK57NI>)

Course Schedule

Monday 16th	Introduction to dynamic network modeling
09:00 – 11:00	An introduction to stochastic actor-oriented models for network dynamics
11:00 – 11:30	Coffee break
11:30 – 13:00	Introduction to SIENA
13:00 – 14:00	Lunch
14:00 – 16:00	Examples of applications
16:00 – 16:30	Coffee break
16:30 – 17:30	Computer work with Siena
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Tuesday 17th	Continued dynamic network modeling; Modeling of networks and behavior
09:00 – 11:00	The basic estimation algorithm. Parameter interpretation
11:00 – 11:30	Coffee break
11:30 – 13:00	Model specification; Special topics: composition change, structurally determined values, missing values
13:00 – 14:00	Lunch
14:00 – 16:00	Introduction to co-evolution of networks and behavior. Estimation
16:00 – 16:30	Coffee break
16:30 – 17:30	Computer work with Siena: co-evolution of networks and behavior
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Wednesday 18th	Examples and further background
09:00 – 11:00	Diverse examples
11:00 – 11:30	Coffee break
11:30 – 13:00	Continuation of computer work with SIENA
13:00 – 14:00	Lunch
14:00 – 16:00	Model specification. Goodness of fit tests
16:00 – 16:30	Coffee break
16:30 – 17:30	Simulation with Siena
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Thursday 19th	Exponential random graph models; Multilevel dynamic network analysis
09:00 – 11:00	Non-longitudinal network models: Exponential Random Graph Models (ERGMs)
11:00 – 11:30	Coffee break
11:30 – 13:00	Continuation of ERGMs, computer work with pnet or statnet
13:00 – 14:00	Lunch
14:00 – 16:00	Meta-analysis of dynamic network analysis results
16:00 – 16:30	Coffee break
16:30 – 17:30	Computer work with Siena: running Siena through batch files
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Friday 20th	Communication of results; New developments
09:00 – 11:00	Communication of results to a wider audience
11:00 – 11:30	Coffee break
11:30 – 13:00	Last question time
13:00 – 14:00	Lunch
14:00 – 16:00	Individual Consultation on data analysis projects
16:00 – 16:30	Coffee break
16:30 – 17:30	Individual Consultation on data analysis projects

Other information and contacts

The maximum number of participants is 30. Other info (e.g.: for software and installation) or materials (e.g.: example data files, slides) will be given either by e-mail or at the beginning of the course.

For inquiries related to the content of the course, course materials, software ...

contact the *course organizers*

Raffaele Corrado (raffaele.corrado@unibo.it)

Simone Ferriani (simone.ferriani@unibo.it)

For inquiries related to the processing of course registration, room reservation, payments ...

contact the *Bertinoro Centre representative*

Roberta Partisani (rpartisani@ceub.it).