

“Too large a proportion of recent ‘mathematical’  
economics ... lose sight of the complexities  
and interdependencies of the real world.”  
John Maynard Keynes



Mathematical  
Institute

Network Science  
Social Networks  
Financial Networks  
Economic Complexity  
Urban Systems

The Oxford Summer School in

# Economic Networks

26–30 June 2017

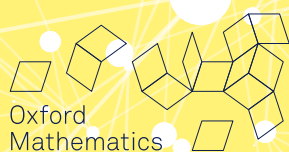
Mathematical Institute, Oxford

An interdisciplinary school for (mainly graduate)  
students of mathematics, economics, data science,  
statistics, development, policy, geography and more.

With special guests including Sanjeev Goyal,  
Vasco Carvalho, Mihaela van der Schaar  
and Doyne Farmer.

Further information:  
[www.maths.ox.ac.uk/r/economicnetworks](http://www.maths.ox.ac.uk/r/economicnetworks)

Contact:  
[economicnetworks@maths.ox.ac.uk](mailto:economicnetworks@maths.ox.ac.uk)



Institute for  
**New Economic Thinking**  
AT THE OXFORD MARTIN SCHOOL

**OCIAM**  
Oxford Centre for  
Industrial and Applied  
Mathematics



Dear summer school participants,

I am delighted to welcome you to the Mathematical Institute at the University of Oxford.

The Mathematical Institute has a very large and active research strand dedicated to applied mathematics, including a long history of collaboration with industry and other departments across the university. As host to the first Oxford Summer School on Economic Networks, we are delighted to continue to support and grow this multi-disciplinary tradition.

We are particularly pleased to welcome such a wide range of students from diverse areas such as mathematics, economics, development, innovation, geography and policy, and hailing from all corners of the world. Amongst you are those interested in learning how to use networks to model the processes underlying economic development, identify risk in complex financial systems, quantify the effects of social networks and map urban environments.

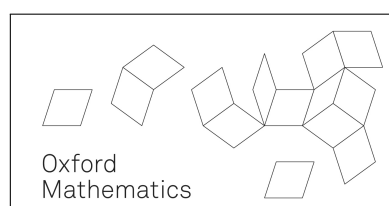
Carefully designed to build from basic network concepts to more advanced modelling topics, and facilitate interaction and learning between participants, I am confident that this school will lead to new research inspiration, exciting collaborations and lasting friendships.

Finally, we are particularly pleased to welcome a world renowned panel of experts to teach at the school, including Prof Sanjeev Goyal and Prof Vasco Carvalho from the University of Cambridge, and Prof Mihaela van der Schaar, Prof Doyne Farmer and Prof Peter Grindrod from the University of Oxford. It is a testament to Oxford's international reputation that such an esteemed panel can be assembled for an inaugural event, and I hope that each of you will take full advantage of this unique opportunity.

Best wishes,

Prof Martin Bridson

Head of Department  
Mathematical Institute  
University of Oxford



# Schedule

## Monday June 26th (Lecture Theatre L1)

- 8.45-9.30 Registration
- 9.30-10.00 Opening  
*Dr Neave O'Clery, University of Oxford*
- 10.00-11.15 Lecture: Networks overview  
*Prof Mauricio Barahona, Imperial College London*
- 11.15-11.30 [Coffee Break](#)
- 11.30-13.00 Lecture: Introduction to network theory  
*Dr François Lafond, University of Oxford*
- 13.00-14.15 [Lunch](#)
- 14.15-15.45 Lecture: Network analysis tools  
*Dr Mariano Beguerisse, University of Oxford*
- 16.00-18.00 Tutorial: Networks in Matlab  
*Dr Mariano Beguerisse, University of Oxford*
- 19.30-22.00 Social event: Dinner at Somerville College

## Tuesday June 27th (Lecture Theatre L3)

- 9.00-10.15 Tutorial: Network visualisation  
*Dr Neave O'Clery, University of Oxford*
- 10.15-10.30 [Coffee Break](#)
- 10.30-12.00 Lecture: Economic Complexity  
*Dr Neave O'Clery, University of Oxford*
- 12.00-13.00 Tutorial: Economic complexity I  
*Penny Mealy, University of Oxford*
- 13.00-14.15 [Lunch](#)
- 14.15-15.45 Lecture: Social network analysis  
*Dr Taha Yasseri, University of Oxford*
- 16.00-17.30 Tutorial: Social network analysis  
*Dr Taha Yasseri, University of Oxford*
- 18.00-20.00 Social event: Punting on river Cherwell

## Wednesday June 28th (Lecture Theatre L2)

- 9.30-11.00 Lecture: Reputational learning and network dynamics  
*Prof Mihaela van der Schaar, University of Oxford*
- 11.00-11.15 [Coffee Break](#)
- 11.15-12.15 Lecture: The strategy of conquest  
*Prof Sanjeev Goyal, University of Cambridge*
- 12.15-13.30 [Lunch](#)
- 13.30-15.30 Tutorial: Economic complexity II  
*Penny Mealy & Dr Neave O'Clery, University of Oxford*
- 15.45-16.45 Lecture: Mapping urban and regional diversification  
*Dr Neave O'Clery, University of Oxford*
- 17.00-18.15 Public lecture: The law of the few  
*Prof Sanjeev Goyal, University of Cambridge*
- 18.30-20.30 Social event: Walking tour of Oxford

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## Thursday June 29th (Lecture Theatre L2)

- 9.00-10.15 Lecture: Theoretical models of contagion in financial networks  
*Prof Sujit Kapadia, Bank of England*
- 10.15-11.30 Tutorial: Financial networks  
*Dr Fabio Caccioli, University College London*
- 11.30-11.45 **Coffee Break**
- 11.45-13.00 Lecture: The ecology of production and finance  
*Prof Doyne Farmer, University of Oxford*
- 13.00-14.15 **Lunch**
- 14.15-15.30 Lecture: Production networks  
*Prof Vasco Carvalho, University of Cambridge*
- 15.45-17.30 Policy panel: What role does complexity science have in economic forecasting?  
*Prof Doyne Farmer (University of Oxford), Prof Sujit Kapadia (Bank of England), Dr Stephen Kinsella (University of Limerick) and Dr Rosa Fernandez (UK Department for Business, Energy and Industrial Strategy). Chaired by Prof Dariusz Wojcik (University of Oxford).*
- 17.30-19.00 Social event: Drinks reception with panellists at Mathematical Institute

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## Friday June 30th (Lecture Theatre L3)

- 9.30-11.00 Lecture: Networks and patterns in urban systems  
*Dr Elsa Arcaute, University College London*
- 11.00-11.15 **Coffee Break**
- 11.15-12.45 Tutorial: Road networks and scaling laws  
*Dr Elsa Arcaute, University College London, and Dr Soumya Banerjee, University of Oxford*
- 12.45-14.00 **Lunch**
- 14.00-15.00 Lecture: Urban analytics overview  
*Prof Peter Grindrod, University of Oxford*
- 15.00-16.00 Closing

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## Additional Information

- Wifi** Go to 'The Cloud' and register your device
- Contact** General: economicnetworks@maths.ox.ac.uk  
Neave: oclery@maths.ox.ac.uk  
Emma: yu@maths.ox.ac.uk
- Emergency** Nils: +44 (0) 7391897480
- Lunch** *Lunch is not included but there are lots of great options nearby ...*  
Pi Cafe on Lower Ground Floor of the Mathematical Institute  
Will's Deli, Woodstock Road  
Gail's Bakery, Little Clarendon Street
- Coffee** *Some coffee breaks are included, but our local favourites include ...*  
Natural Bread Company, Little Clarendon Street  
Barefoot, Walton Street