



SAID BUSINESS SCHOOL, University of Oxford

## SEMINAR SERIES / MICHAELMAS 2010

Convenors: Felix Reed-Tsochas, Institute for Science, Innovation and Society,  
Saïd Business School  
Eduardo López, Saïd Business School

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Seminar webpage:  
[www.cabdyn.ox.ac.uk/complexity\\_seminars.asp](http://www.cabdyn.ox.ac.uk/complexity_seminars.asp)

Sandwiches and drinks will be provided

Please note: although the seminar programme detailed was correct at time of printing, seminar arrangements are subject to change - for the latest information, please check the seminar webpage.

**Wednesday 27<sup>th</sup> October**  
(3.30pm - 5.00pm) James Martin Seminar Room

**Prof James Gleeson**

Department of Mathematics and Statistics, University of Limerick, Ireland

### 'Cascade dynamics and systemic risk in banking networks'

#### ABSTRACT

Network models may be applied to many complex systems, e.g. the Internet, the World Wide Web, inter-bank lending/borrowing networks, etc. Cascade dynamics can occur when the (binary) state of a node is affected by the states of its neighbours in the network, for example when the default of a bank causes some of its creditors to default in turn. Such models have been used to aid understanding of the spread of cultural fads and the diffusion of innovations (Watts 2002), and can be generalized to include a variety of other cascading dynamics on networks (Gleeson 2008). I will review the techniques used to study these dynamics and examine their applicability for the modelling of contagion and systemic risk within banking networks (Nier et al. 2007, Gai and Kapadia 2010, May and Arinaminpathy 2009).



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