Hilary Term 2008

CABDyN SEMINAR SERIES
Saïd Business School, University of Oxford

Convenors:
Felix Reed-Tsochas, *James Martin Institute*, *Saïd Business School*
Jukka-Pekka Onnela, *Physics Department & Saïd Business School*

Our meetings intend to provide a forum for rigorous research (in a broad range of disciplines) focusing on complex adaptive systems, using methods and techniques such as agent-based modelling and complex network analysis. Since potential areas of application for such approaches can be located across the social, natural and engineering sciences, our aim is to involve participants from a wide range of departments in Oxford. We welcome talks which focus on particular areas of application and associated technical issues, but also encourage contributions which address more fundamental conceptual or mathematical problems. The CABDyN Seminar Series is one of the activities of the CABDyN Research Cluster (http://sbs-xnet.sbs.ox.ac.uk/complexity/).

Tuesday 19th February, 12.30 – 2.00 pm

Reception Room, Saïd Business School

Dr Jukka-Pekka Onnela
Physics Department and Saïd Business School
University of Oxford

Emergence of communities in social networks

ABSTRACT

I will present a model of social networks motivated by a recent large-scale empirical study. By starting from a set of plausible microscopic rules governing the formation of social ties at the individual level, the model is able to produce macroscopic social structures that are compatible with real world social networks. In particular, the model enables exploring the role of interaction strengths in the emergence of communities in social systems. It turns out that by tuning a model parameter that governs the sensitivity of the microscopic rules to weights, the resulting networks undergo a gradual structural transition from a module-free topology to one with communities.

Literature reference: J. M. Kumpula, J.-P. Onnela, J. Saramäki, K. Kaski and J. Kertész, Phys. Rev. Lett. 99, 228701 (2007).

Sandwiches and drinks will be provided

For further information contact info.cabdyn@sbs.ox.ac.uk
Seminar webpage: http://sbs-xnet.sbs.ox.ac.uk/complexity/complexity_seminars.asp