QMUL - School of Mathematical Sciences, Queen Mary, University of London

The Queen Mary, University of London, School of Mathematical Sciences has some 50 permanent academic staff with a very strong research group in Dynamical Systems consisting of 8 staff. There is a strong research culture of weekly seminars, and workshop activity, in all the major areas of interest within the School. There is also an interdisciplinary Networks Group in the Department of Electronics with which we have strong links and which has collaborated on three major joint EPSRC research assistant grants since 1996.

David Arrowsmith is a Professor and also Head of the School of Mathematical Sciences at Queen Mary. He has wide experience of dynamical systems having published authoritative texts on the area, as well as many papers. He also has current research interests in walker configurations on lattice graphs and the associated percolation problems. He has had an extensive collaboration including two EPSRC awards with Professor J.M. Pitts and Dr R.J. Mondragón of the Electronic Engineering group on packet traffic modelling. He has spoken regularly at international conferences over the last few years on modelling of networks. He is scheduled to be a member of the International Organizing Committee for an IMA conference in 2006 on the Mathematics of Networks and is currently supported by EPSRC for a research assistantship. He has successfully supervised all of his 6 PhD students. A former and current student have been part-supported by British Telecom grants. The current BT sponsored student is researching the behaviour of ad-hoc networks using percolation theory.

Wolfram Just is a reader in the School of Mathematical Sciences. His research covers topics from theoretical physics and applied mathematics with a special focus on nonlinear dynamics and statistical physics far from equilibrium . Results have been published in about 60 publications in international journals (6 contributions to Phys. Rev. Lett., others in Phys. Rev. E, Physica D, J. Stat. Phys. and others) and two textbooks. Some of the articles have been cited more than 100 times.
My two major research branches are concerned with fundamental aspects as well as applications in solid state physics. From the point of view of fundamental research investigations of space-time chaos, nonlinear stochastic systems, and various techniques for the derivation of effective equations of motion are at the centre of my interest. Concerning applications the focus is on time-delay dynamics and in particular control problems. Both parts of this research strategy benefit from intense collaboration with several research groups, experimental as well as theoretical, on the continent.

Raul J. Mondragon was the catalyst for the interdisciplinary collaboration at Queen Mary between the Dynamical Systems Group (Maths Research Centre) and the Communications Research Group (Department of Electronic Engineering), and has been involved in all of its funded projects. In the last three years he has been working in the characterisation, modelling and visualisation of large networks. He joined the QM Electronic Engineering academic staff as a Lecturer in 2000. In 1997 he worked full time in the ARMAN project (GR/K44152), from 1998 until March 2000 in the project Chaotic Control for Fast Resource Management of ATM Networks (EPSRC grant GR/L78659) and he is the principal investigator of the project Small-world Modelling of Internet Behaviour (EPSRC grant GR/R30136).

Hugo Touchette is a recently appointed lecturer in Applied Mathematics and an Interdisciplinary Academic Fellow at Queen Mary, University of London. His research centers on applying mathematical ideas and methods, old and new, for studying problems of statistical physics – basically, random systems composed of many particles.

Jonathan Pitts leads the Network and Service Assurance Laboratory at Queen Mary. His doctoral research pioneered the concept of rate-based simulation for ATM networks, quantifying the nature of the speed-up, and the accuracy limitations of the modeling approach. He co-authored, with John Schormans, the definitive student text on IP/ATM performance modelling (Wiley 1996, 2000: ISBN 0-471-49187-X), and in 1998 was seconded to Cable & Wireless Comms., and supported by the Royal Academy of Engineering's Industrial Secondment Scheme. He joined the Queen Mary academic staff in 1994 and is currently Professor of Communication Engineering (since 2001).