THE LONDON MATHEMATICAL SOCIETY

NEWSLETTER No. 321 December 2003

Forthcoming Society Meetings

2004

Friday 9 January
AMS Meeting, Arizona
G. van der Geer
[*page X*]

Friday 20 February
London
D. Schleicher
S.M. Rees
(Mary Cartwright Lecture)
[*page X*]

Wednesday 12 May
Nottingham
Midlands Regional Meeting

Friday 18 June
London
Hardy Lecture

Friday 2 July
Newcastle
Northern Regional Meeting

Friday 17 September
Exeter
South West & South Wales Regional Meeting

Friday 19 November
London
Annual General

COUNCIL DIARY

17 October 2003

Already before the October Council meeting, members of Council had been circulated urgently by email for their individual responses to the HEFCE consultation on developing the funding method for teaching in English universities from 2004-5. The proposals suggest a 5.4% cut in the mathematics teaching budget. Council approved the excellent document which the Education Secretary had subsequently put together. It has necessarily been a fast response; it is now important that we find common cause with as many others as possible, that we target MPs, and talk to the Press.

In this climate, the announcement from the Treasurer that, although money is tight, our proposed Mathematics Promotion Unit could go ahead was particularly welcome. We shall run it as a trial for one year. This venture was proposed at the Retreat last March, and has a wide ranging remit which has already been discussed in this diary. In particular, with the new unit in place and the part-time press officer it will employ, we shall certainly be able to use the media more effectively than we are able to at present.

The Publisher had attended a workshop on Scenario Planning in Publishing, and reported to Council on the issues under discussion. There is a need for some long term planning to deal with long term threats to publishing. The Society's publishing activities represent both a service to the mathematical community and a source of income which together with our investments funds our other activities; we need to maintain their health.

As Programme Secretary, Stephen Huggett reported on the impact that budget cuts are having on Programme Committee grants. Programme Committee's policy is to aim to fund the parts which other grants cannot reach, in other words, it tries to complement other grant awarding bodies in the way it directs its funding. Hence, for example, the Committee is currently choosing to focus its conference funding on smaller rather than larger conferences. Council approved this strategy.

Programme Committee is giving support, through its Mathematics in Africa programme, to the African Institute of Mathematical Science (AIMS) in Cape Town, which brings in students from all over Africa. Malcolm

MacCallum had visited, and reported to Council on what he had observed. Set in a former hotel in a seaside resort of Cape Town, the institute has good computing facilities and an excellent library, an inheritance from an accountant with a passion for mathematics. The informal teaching methods seem to be very successful, and students and lecturers (many of them guests from overseas) are extremely enthusiastic. It sounded like a very good venture to support.

Stephen Huggett also reported to Council in his capacity as Scientific Secretary to the International Review of Mathematics. Eight venues are being visited, and for some of these programmes have already been set up; there has been a good spirit of cooperation between departments in each region. There is a lot of paperwork to prepare, landscape documents and numerical data. The panel will spend a week in the UK, splitting into four teams of three to visit two venues each over a period of two days.

Sarah Rees

INTERNATIONAL REVIEW OF MATHEMATICS

Report 9

The Steering Group is confident that thanks to the hard work by very many mathematicians and statisticians all over the country the review will have the best possible chance of achieving its aim of giving us an independent assessment of the standing and potential of research in mathematics and statistics in the UK.

The international panel will see some of our most excellent research, and will be able to place it in the context of the UK community in mathematics and statistics and its various structures and means of support. Perhaps most importantly, though, the international panel will be able to assess our potential for the future.

For convenience let us summarise, very briefly, the plans for the review week here. The international panel is

- Jean-Pierre Bourguignon, IHES, France.
- Michel Broué, Institut Henri Poincaré, France.
- Stephen Davis, Northwestern University, USA.
- Don Dawson, Carleton University, Canada.
- Robbert Dijkgraaf, University of Amsterdam, The Netherlands.
- Ron Graham, University of California, San Diego, USA.
- John Guckenheimer, Cornell University, USA.
- Peter Hall FRS, Australian National University, Australia.
- Niels Keiding, University of Copenhagen, Denmark.
- Susan Murphy, University of Michigan, USA.
- Hans Othmer, University of Minnesota, USA.
- Peter Sarnak FRS, Princeton University, USA.
- Margaret Wright, New York University, USA.

They arrive in London on 1 December and leave on the 6 December. During that week they will spend two days (split into four subpanels) with mathematicians at eight venues: Bristol, Cambridge, Durham, Edinburgh, Imperial College, Manchester, Oxford and Warwick. During these visits there will be presentations (given by people from a wider group of institutions) on the UK's strongest and most dynamic mathematics and statistics.

The panel members will also have many opportunities for discussions with both the senior members of our profession and some of our younger researchers.

They will also be given background briefings on way the Research and Funding Councils, our three learned societies, the Royal Society and research institutes all support mathematics, and will hear from various users of mathematics research.

Finally, and importantly, the whole panel will have time at the end of the week to reflect on what they have seen and to work together in preparing the first draft of their report.

The CMS has already begun discussions with EPSRC on the details of the consultation process surrounding the publication of the report and the development of any action plans.

Please monitor the website (www.cms.ac.uk/irm) for the latest developments; you can email comments to me at irmscisec@lms.ac.uk.

Stephen Huggett
Scientific Secretary to the Review

LMS Newsletter

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LONDON MATHEMATICAL SOCIETY
MARY CARTWRIGHT LECTURE

Friday 20 February 2004, University College London

3.30 – 4.30 Professor Dierk Schleicher (Bremen)
Understanding Complex Dynamical Systems and their Parameter Spaces
4.30 – 5.00 Tea
5.00 – 6.00 Mary Cartwright Lecture Professor Mary Rees (Liverpool)
The Topographer's View of Parameter Spaces

There are limited funds available to contribute in part to the expenses of members of the Society or research students to attend the Society meeting. Requests for support, including an estimate of expenses, may be addressed to the Programme Secretary at the Society (web: www.lms.ac.uk; email: grants@lms.ac.uk).

2004 LONDON MATHEMATICAL SOCIETY PRIZES

Announcement and Call for Nominations

A Prizes Committee has now been appointed for 2004. The membership is:

- Chair: Professor Frances Kirwan
- Dr Kevin Buzzard
- Professor Edward Corrigan
- Professor Robert Curtis
- Professor Angus Macintyre
- Professor Mary Rees
- Professor Miles Reid
- Professor David Sloan

In 2004, Council expects to award the De Morgan Medal, the Senior Berwick Prize, the Naylor Prize, the Fröhlich Prize and up to four Whitehead Prizes.

Members wishing to nominate candidates should use the designated form, which is available to download from the LMS website (www.lms.ac.uk) or can be obtained by contacting the Secretary to the Committee, Isabelle Robinson, at London Mathematical Society (tel: 020 7927 0800, email: robinson@lms.ac.uk). Nominations should be received no later than Friday 1**6 January 2004.**

Brief descriptions of the criteria for each Prize are given below. Council reserves the right not to make an award of any particular Prize in the event that no candidate of sufficient merit is recommended by the Prizes Committee. The full regulations for each prize can be obtained from Isabelle Robinson (contact details above).

The De Morgan Medal, the Society's premier award, is awarded every third year (in years numbered by a multiple of 3), in memory of Professor A. De Morgan, the Society's first President. The De Morgan Medal for year X can only be awarded to a mathematician who is normally resident in the United Kingdom on 1st January of year X. The only grounds for the award of the Medal are the candidate's contributions to mathematics.

The Senior Berwick Prize is named after Professor W. E. H. Berwick, a former Vice-President of the Society, and is awarded in even-numbered years. The Senior Berwick Prize for year X can only be awarded to a mathematician who is a member of the Society on 1st January of year X; it is awarded in recognition of an outstanding piece of mathematical research actually published by the Society during the eight years ending on 31st December of year X-1; and it may not be awarded to any person who has previously received the De Morgan Medal, Polya Prize, Senior Whitehead Prize or Naylor Prize.

The Naylor Prize and Lectureship in Applied Mathematics is awarded in even-numbered years, in memory of Dr V. D. Naylor. The Naylor Prize for year X can only be awarded to a mathematician who is normally resident in the United Kingdom on 1st January of year X. The grounds for the award may include work in, and influence on, and contributions to applied mathematics and/or the applications of mathematics, and lecturing gifts. The Naylor Prize may not be awarded to any person who has previously received the De Morgan Medal, the Polya Prize, the Senior Berwick Prize or the Senior Whitehead Prize. The winner of the Naylor Prize for year X is normally invited to give the Naylor Lecture at a Society meeting in the year X+1.

The Fröhlich Prize is awarded in even numbered years in memory of Professor Albrecht Fröhlich (De Morgan Medallist 1992). The Fröhlich Fund for this purpose was based on a generous donation from Mrs Fröhlich, reflecting Professor Fröhlich's great enthusiasm for, and gratitude to, the London Mathematical Society. No person shall be awarded a Fröhlich Prize more than once. A Fröhlich Prize may not be awarded to any person who has received the De Morgan

Medal or the Polya Prize. The Prize shall be restricted to mathematicians who, on 1st January of the year of the award, are either (i) normally resident in the United Kingdom of Great Britain and Northern Ireland, or (ii) members of the Society mainly educated in the United Kingdom. The Prize shall only be awarded to a mathematician who on the 1st January of the year of its award is under 40 years old except that this age restriction may be relaxed when it appears desirable to do so in order to take fair account of a broken career pattern. The Prize shall be awarded for original and extremely innovative work in any branch of mathematics.

The Whitehead Prizes are awarded to mathematicians who on 1 January 2003 are normally resident in the United Kingdom or members of the Society mainly educated in the United Kingdom, who are not already Fellows of the Royal Society, and who are under the age of forty years (except that this age restriction may be relaxed when it appears desirable to do so in order to take fair account of broken career patterns). Grounds for the award may include work in and influence on mathematics. This Prize may not be awarded to anyone who has won any of the Society's other Prizes. Members are reminded that the scope of the Whitehead Prizes includes all aspects of mathematics, and Council has emphasised that this includes applied mathematics, mathematical physics and mathematical aspects of computer science.

COMPOSITIO LAUNCH

The first issue of Compositio Mathematica as an LMS partner journal will be in January 2004. Two meetings are being held to publicise the launch. One will be at the AMS meeting in Phoenix, Arizona, in January (see the item on p. X of this Newsletter). The other took place in the Korteweg-de Vries Institute of Mathematics at the University of Amsterdam on 7 November, beginning on an appropriately mathematical note with a lecture by Christopher Deninger (Münster) on Elliptic curves over finite fields and transverse index theory. Starting with a very accessible introduction to the Riemann zeta function, its functional equation, and the connection with distribution of the prime numbers, he moved on to consider analogues over algebraic number fields, and their applications.

The second talk, by Volker Remmert (Mainz) was a scholarly survey of the turbulent early history of Compositio. It was founded by L.E.J. Brouwer following his expulsion from the editorial board of Math. Annalen after falling out with Hilbert. From the start, Brouwer emphasised the international character of the new journal (in deliberate contrast to the narrowly nationalistic nature of the German journals of the 1930s). He appointed a huge editorial board of 49 members from all over the world, and a panel of five managing editors, one of whom was Bieberbach. But almost before the first issue of the journal appeared, in 1934, Bieberbach wrote to Brouwer demanding that he should dismiss all the Jewish members of the editorial board. When Brouwer refused, Bieberbach resigned, and by 1937 all ten German members of the Compositio board had either resigned or emigrated. Publication of the journal was halted altogether after the German occupation of the Netherlands in 1940, and did not resume until about ten years later.

In 1935 Wiener wrote in a letter to Struik, "Now that my friend Bieberbach is off the Compositio, I am sending some of my stuff there." Other prominent mathematicians such as von Neumann followed his example. In these more tranquil times, now that the LMS is associated with Compositio, we trust that it will continue to publish the very best mathematics from around the world. Make sure that your library subscribes to it!

Christopher Lance
Publications Secretary

Frans Oort, Joseph Steenbrink, Gerard van der Geer and Bas Edixhoven
Compositio Editors since 1961

LMS AT THE AMS, PHOENIX

The London Mathematical Society will be holding a Meeting and Reception during the American Mathematical Society Meeting at Phoenix, Arizona which runs from 7-10 January 2004.

The Society Meeting will be held at 3.30 pm on Friday 9 January at which Professor Gerard van der Geer (KdV Institute, UWA) will give a lecture on Curves over finite fields and congruences between modular forms. The meeting is to celebrate the relaunch of Compositio Mathematica under a not-for-profit publishing collaboration, and a consequent drop in the price. Gerard van der Geer is the Managing Editor of Compositio Mathematica. LMS members who have not already done so will have the opportunity to sign the Membership Book which dates back to 1865.

The Meeting will then be followed by a reception at 5.00 pm. Members who wish to attend the reception should apply for their free ticket to the Administrator, London Mathematical Society, De Morgan House, 57-58 Russell Square, London WC1B 4HS (email: oakes@lms.ac.uk) no later than 18 December. The Society hopes to entertain as many as possible of its members who are attending the AMS Meeting, but numbers are limited by the capacity of the room.

INTRODUCING THE EPSRC MATHEMATICS PROGRAMME TEAM

The last six months have seen a complete change of staffing in the EPSRC Mathematics Programme team. Alasdair Rose and Carol McAnally have departed for new positions within the organisation, whilst Allison McCaig leaves us for the South-West Regional Development Agency. We wish all of them the very best in their new posts and thank them for all the hard work they have done on behalf of mathematics in the UK.

The team is now made up of new faces, and one that may be familiar to some of you. Anne Farrow has rejoined the Mathematics Programme after a spell in Chemistry and we are very pleased to have her on board. Rachel Woolley and Helen Carter have also joined the team as Associate Programme Managers. Our areas of responsibility and contacts are summarised below. All of the team are keen to visit Universities to get to know you better, to answer queries relating to EPSRC's strategic priorities and to disseminate information about the Mathematics Programme. Please do get in touch with any of us to arrange such a visit.

Name	Telephone/e-mail	Responsibility
Annette Bramley	01793 444304 annette.bramley@epsrc.ac.uk	Programme Manager
Helen Carter	01793 444162 helen.carter@epsrc.ac.uk	Responsive mode - Pure Mathematics Faraday, Industrial Mathematics Networks Public engagement
Rachel Woolley	01793 444183 rachel.woolley@epsrc.ac.uk	Responsive mode - Applied and Mathematical Physics Contact for LSI/Healthcare Novel Computation Environmental Mathematics and Statistics
Anne Farrow	01793 444110 anne.farrow@epsrc.ac.uk	Responsive mode - Statistics and OR Responsive mode - small grants scheme Review of OR Studentships

GCE AND GCSE STATISTICS

The annual statistics for 2001, 2002 and 2003 can be found at the website of the Joint Council for General Qualifications; go to www.jcgq.org.uk and look under Examination Results.

W.B. Stewart
Education Secretary

MATHEMATICAL WHO'S WHERE

2003 Edition

The Mathematical Who's Where United Kingdom Directory contains information about mathematicians and mathematics departments in universities in the UK. A copy was enclosed with the mailing of the October Newsletter to each member with an address in the area covered by the directory. Copies are available for purchase at a price of £7.00 or US$14.00 per copy inclusive of postage, from the London Mathematical Society. Cheques should be made payable to the 'London Mathematical Society'.

ROYAL SOCIETY RESEARCH FELLOWSHIPS

The Royal Society's University Research Fellowship Scheme enables about 300 of the best postdoctoral researchers to devote up to ten years to research. On 1 October 2003 a number of new fellows were appointed, including three mathematicians:

Dr Charles Eaton to work in the Department of Mathematics, UMIST, on local determination of representations of finite groups.

Dr Alan Lauder to work in the Mathematical Institute, University of Oxford, on zeta functions of varieties over finite fields.

Dr David Tong to work in the Department of Applied Mathematics and Theoretical Physics, University of Cambridge, on string theory, solitons, and quantum gauge dynamics (deferred to 1 September 2004).

NATIONAL E-SCIENCE CENTRE

Forthcoming Events

Integrated Care Records: Problems and Solutions Workshop - 11-12 December

The focus of this workshop is electronic health records: problems and solutions. The enormous growth in the use of computers to store and access patient records present healthcare professionals (and their clients) with a wide range of opportunities and challenges in the delivery of healthcare. www.nesc.ac.uk/esi/events/324/

Requirements Capture for Collaboration in e-Science - 14-15 January

This two day workshop aims to uncover the social and technical conditions that are most conducive to the achievement of e-Science goals. Specifically, it will seek to define methods for e-Science applications requirements capture that are capable of addressing socio-technical factors. www.nesc.ac.uk/esi/events/320/

For a full listing of all forthcoming events visit: www.nesc.ac.uk/esi/esi.html. The November NeSC Newsletter is now online at: www.nesc.ac.uk/news/newsletter/November03.pdf.

GAZA LIBRARY PROJECT

The Gaza Library Project (GLP) is a UK charity sponsored by (among others) Sir Michael Atiyah and Sir Eric Ash. Its purpose is the collection of books and long runs of periodicals for distribution to Palestinian universities and other institutions. Publications at all levels and in most subjects are needed and members of the LMS are urged to participate in the organization of collections. Mathematics books ranging from O-level to research level are badly needed. Some institutions and publishers have made generous donations (e.g. the Royal Society, Manchester University Library, the Mathematics Institute at Warwick, Macmillans) and individual mathematicians have collected from their colleagues. This is an appeal to LMS members to collect from their various departments. The process is quite simple: contact your colleagues and ask them to package books in manageable strong cardboard boxes

marked Gaza Library Project. Contact either: M. Payne (Secretary to the Trustees) email: 106141.2003@compuserve.com or Rosemarie and Tony Zahlan (trustees) email: zahlan@compuserve.com. They will arrange for collection and shipment. The GLP webpage is: www.brunel.ac.uk/~emstksh/gaza.

Bill Parry
Warwick University

PROGRESS ON THE BOLOGNA AGREEMENT

On 19 September, Ministers of Education, meeting in Berlin, issued a communiqué on the latest position of the Bologna process. In 1999, in the Bologna agreement, the UK signed up to the creation of a common model for Higher Education in Europe. This will include a three or four-year first Bachelor degree, a second stage leading to a Masters degree, and a third stage leading to a Doctoral degree.

Many of the forty countries now party to the agreement have taken steps to institute a three-year first degree. In Berlin, ministers decided to specify degrees (Bachelor and Master) in terms of learning outcomes, rather than simply number of hours of study. "[Member states are encouraged to] elaborate a framework of comparable and compatible qualifications for their higher education systems which should seek to describe qualifications in terms of workload, level, learning outcomes, competencies, and profiles." Co-ordination will be undertaken by a European Qualifications agency and there will be an "overarching framework of qualifications".

Where this leaves the path of a UK student to a PhD is unclear. The model is not that of an undergraduate MMath followed by a PhD, still less that of a PhD following immediately after a three year BSc. The communiqué clearly intends that a substantial Masters degree should be the qualification to become a research student. For the full text, see www.bologna-berlin.de.

David Salinger
Publicity Officer
European Mathematical Society

PhD TRAINING IN MATHEMATICS IN THE UK

In the USA the Carnegie Foundation recently commissioned a collection of essays as part of the Carnegie Initiative on the Doctorate (CID) — a series of prizeworthy punditry about educational training at the PhD level. The invited contributions represent six intellectual disciplines: Chemistry, Education, English, History, Mathematics and Neuroscience.

I would like to bring the UK mathematical community's attention to an article, commissioned by no one, entitled 'PhD Training in Mathematics in the UK' which is to be found as a pdf file at www.maths.soton.ac.uk/staff/Snaith/Bass2.pdf. This essay is an attempt to see whether CID has unearthed any lessons which might be useful in the UK context. For reasons explained in the essay, it concentrates exclusively upon mathematics, which merited two CID essays written by Hyman Bass and Tony Chan (Notice of the American Mathematics Society Vol.50 (2003) No.7 pp.767-776 and No.8 pp.896-903).

I promise that this essay is not just another whining lament about lack of resources. Rather it attempts to address, following Bass in particular, the question of whether we are training the right sort of PhDs and, if so, whether we are doing it in the right way. For example, does our PhD training dovetail sensibly into the sort of 21st century mathematical profession which exists out there?

The appearance of this article in the Newsletter should in no way be taken to presume that my views in 'PhD Training in Mathematics in the UK' in any way reflect the London Mathematical Society's official point of view. In fact, now I come to think of it, I do not know of any evidence that an official point of view exists.

Victor Snaith
University of Southampton

BLOC

BLOC (Bristol Leicester Oxford Colloquium) will hold its 25th meeting on Friday 9 January 2004 at Oxford. The speakers will be Vlastimil Dlab (Ottawa), Steffen König (Leicester) and Jon Brundan (Eugene/Bristol). BLOC is funded by an LMS Scheme 3 grant. For more details of the programme and the venue, as well as general information about BLOC, visit the website (www.mcs.le.ac.uk/~nsnashall//BLOC/).

MATHEMATICS FOR INDUSTRY

The 13th European Conference on Mathematics for Industry will take place in Eindhoven between 21-25 June 2004. This conference is co-organised by ECMI (European Consortium for Mathematics in Industry) and ENBIS (European Network for Business and Industrial Statistics). The conference will be devoted to mathematical and statistical modelling, analysis and simulation of problems arising in a practical context. In particular the following areas have been chosen:

- Aerospace
- Electronic industry
- Chemical technology
- Life sciences
- Materials
- Geophysics
- Financial mathematics
- Water flow

The Plenary Speakers are:

- S. Bisgaard (Amherst, MA & Amsterdam) Statistics as a catalyst for process and product innovation and improvement
- R. Helmig (Stuttgart) Multiphase and multicomponent flow in porous media in industrial and environmental applications
- J. Hinch (Cambridge) On problems in glass industry
- J. Hunt (London) Trade-offs between geometrical, physical and numerical approximations in mathematical modelling of flow processes with complex boundaries
- C. Rogers (Cambridge) One for all: the potential approach to pricing and hedging
- C. Rossow (Braunschweig) The MEGAFLOW Project: Numerical flow simulation of complete transport aircraft
- F. Ruggeri (Milano) On the reliability of repairable systems: methods and applications
- B. Schrefler (Padova) A multiphase model for concrete: numerical solutions and industrial applications
- B. Trowbridge (Oxford) Fields, focussing and aberration of charged particle beams in electrostatic accelerators
- M. Waterman (Los Angeles, CA) Charting common ancestry in human chromosomes

For further details consult the website www.ecmi2004.tue.nl.

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FOLDING PATTERNS IN STRUCTURAL GEOLOGY, THEORY AND EXPERIMENTS

A meeting on Folding Patterns in Structural Geology, Theory and Experiments will be held on 15 December at the University of Bath. Geologists have long been fascinated by the rich variety of patterns observed in folded (multi-layer) rock. These can include smooth parallel folds, kink bands, chevron folds and more disordered folding patterns on both small and large length scales. Until recently, all studies of such patterns were observational and qualitative. However, there has been recently considerable progress in applying mathematical and engineering based methods to give a quantitative analysis of the possible patterns. This meeting aims to bring together those mathematicians, engineers and geologists who are interested in the analysis, computation and experimental study of folding (and related) patterns with the aim of stimulating future mathematical research into more advanced geological formations and also of comparing theoretical predictions with those observed in the field. The meeting will have talks on theory, recent experimental work and on practical geology. The emphasis will be a strong interchange of ideas between the different communities. Topics to be covered:

- Models of deformable rock: experiments and field observations
- Parallel rock folding
- Kink banding: theory
- Kink banding: experiment
- Multi-layer folding patterns and the formation of singularities
- Computational techniques (including level set methods)
- Separation (delamination) of rock layers
- Discussion: what can geologists learn from mathematicians/engineers and vice-versa.

The confirmed speakers are:

- J. Mackenzie (Department Mathematics, University of Strathclyde)
- J. Cosgrove (Department Earth Science and Engineering, Imperial College London)
- A. Wadee (Department Civil Engineering, Imperial College London)
- M. Peletier (CWI, Amsterdam)
- D. Waltham (Department Geology, Royal Holloway College London)
- M. Casey (School of Earth Sciences, University of Leeds)
- R. Crouch (Department Civil Engineering, University of Sheffield)

For more information contact Professor C.J. Budd (mascjb@bath.ac.uk) or Professor G.W. Hunt (ensgwh@bath.ac.uk) or visit the website www.bath.ac.uk/cnm/centre.shtml. The meeting is supported by an LMS conference grant.

WILL LIGHT MEMORIAL CONFERENCE

Professor Will Light, of the University of Leicester, died on 8 December 2002. The Will Light Memorial Conference, on 18-19 December, brings together a number of Will's collaborators and friends, in a conference to celebrate Will's life and work.

On 18 December, Jeremy Levesley, friend and colleague of Will's at Leicester, will talk about Will's contribution to approximation theory, while 19 December sees the main part of the conference. The following speakers will talk on topics that were dear to Will's heart:

- Rick Beatson (Canterbury, New Zealand)
- Rob Brownlee (Leicester, England)
- Manfred Von Golitschek (Würzburg, Germany)
- Tim Goodman (Dundee, Scotland)
- George Phillips (St Andrews, Scotland)
- Robert Schaback (Göttingen, Germany).

There will be a £10 registration fee, and there is money available to support travel for UK PhD students. To register for the conference, or to get more information, contact Jeremy Levesley (jl1@mcs.le.ac.uk, 0116 252 3897) or go to the conference website at www.mcs.le.ac.uk/~jlevesley/willconf/willconf.htm. The conference is jointly sponsored by the London Mathematical Society, and the Department of Mathematics and the Centre for Mathematical Modelling at the University of Leicester.

MATHEMATICAL MODELLING AND APPLICATIONS

The 12th International Conference on Mathematical Modelling and Applications (ICTMA12) will be held from 10-14 July 2005 at the City University, London. ICTMA12's purpose is the research, teaching and practice of mathematical modelling and this meeting will have a strong focus on transitions from the real world to the mathematical model. Mathematicians, engineers and scientists, modellers in industry, government and finance and teachers and researchers in schools, colleges and universities will be attracted by the conference themes. The first announcement is now available on the ICTMA12 website: www.city.ac.uk/conted /research/ictma12/index.htm

APPLICATIONS OF K-THEORY AND COHOMOLOGY

Jacek Brodzki, Bernhard Koeck and Ian Leary are organising a meeting entitled 'Applications of K-theory and Cohomology' from 30 March - 2 April 2004 at the University of Southampton. It is intended that this meeting will consist of a London Mathematical Society Spitalfields Day (30 March 2004) and will include a special day to mark the 60th birthday of Victor Snaith. Further details may be found at www.maths.soton.ac/staff/Brodzki /AKC.

MIXING AND ITS APPLICATIONS

The first of a series of three LMS-sponsored meetings on 'Mixing and its Applications' will take place at the Department of Mathematics, Imperial College London, on 8 January 2004. The meetings aim to bring together mathematicians and physicists interested in mixing of passive and active tracers in fluids, both from a mathematical and a practical viewpoint. This first day-long meeting will consist of five talks by invited speakers, as well as time for discussion.

The Invited Speakers are:

- Emmanuel Dufraine (University of Warwick) Pseudo-Anosov maps and two-dimensional Euler fluids (after P. Boyland)
- Peter Haynes (University of Cambridge) Mathematical models for transport and mixing in the atmosphere
- Greg King (University of Warwick) Progress on connecting Eulerian and Lagrangian measures of transport in wavy Taylor vortex flow
- Stephen Otto (University of Birmingham) Feeding choanoflagellates and other animals with mixing
- Mark Pollicott (University of Manchester) Mixing in ergodic theory

The Organising Committee are: Andrew Gilbert (University of Exeter), Peter Haynes (University of Cambridge), Jean-Luc Thiffeault (Imperial College London), Stephen Wiggins (University of Bristol).

There is no registration fee for the meeting. However, owing to limited funds, the organisers are unable to provide support for accommodation and travel except for invited speakers. For further details or to register your attendance, please contact Jean-Luc Thiffeault (jeanluc@imperial.ac.uk) or visit www.ma.imperial.ac.uk/~jeanluc/lms-mixing.html.

HOWARD HOARE SYMPOSIUM

The School of Mathematics and Statistics, University of Birmingham, intends to mount this Symposium on 16-17 April 2004 in honour of Dr A.H. (Howard) M. Hoare, Reader in Algebra in the University of Birmingham.

The symposium is to be held to honour Dr A.H.M. Hoare on the occasion of his retirement from the School of Mathematics and Statistics, University of Birmingham, and to recognise his

mathematical achievements in combinatorial group theory. Howard Hoare has served for more than 40 years on the academic staff of the University of Birmingham; he was made a Reader in Algebra in 1980. He has been a member of the London Mathematical Society since 1960; he was a member of the American Mathematical Society for many years.

The following colleagues of Howard Hoare have agreed to lecture at the Symposium:

- I.M. Chiswell (Queen Mary, University of London)
- D.J. Collins (Queen Mary, University of London)
- W.N. Everitt, FRSE (University of Birmingham)
- A.M. MacBeath, FRSE (University of Warwick)
- W. Parry, FRS (University of Warwick)
- D. Singerman (University of Southampton)

The London Mathematical Society has agreed to support the Symposium financially under Scheme 1. There will be grants available to support up to six research students to attend the symposium; these grants will cover subsistence costs and part of the travel costs in visiting the University of Birmingham. Application for this financial support should be addressed to Professor W.N. Everitt (w.n.everitt@bham.ac.uk).

Full details of Symposium programme and arrangements for accommodation at the University, and an application form to attend this meeting, will be available on the website web.mat.bham.ac.uk/symposium in the near future.

COMBINATORICS MEETING

The 2004 Open University Winter Combinatorics Meeting will be held on Wednesday 21 January 2004 in the Christodoulou Meeting Room 15 (CMR 15) at the Open University campus in Milton Keynes. All are welcome and coffee will be available from 10:00 am.

The speakers will be:

- Dan Archdeacon (University of Vermont)
- Lowell Beineke (Indiana University - Purdue University)
- Peter Cameron (Queen Mary College, London)
- Ken Gray (University of Queensland)
- Donald Keedwell (University of Surrey)
- Jozef _iráò (Slovak University of Technology, Bratislava)

Titles of talks, timetable and abstracts will be available in due course. For further details see mcs.open.ac.uk/puremaths/combin. There is no official registration for this meeting, but if you plan to come, please confirm this by emailing Mike Grannell (M.J.Grannell@open.ac.uk). For further information contact Mike Grannell (email above), or Terry Griggs (T.S.Griggs@open.ac.uk). The organisers gratefully acknowledge the support of the British Combinatorial Committee.

MATHEMATICS IN THE METROPOLIS

Survey of Victorian London

A lecture on 'The Mathematics in the Metropolis: A Survey of Victorian London' will be held on Monday 19 January 2004 at 6.00 pm (refreshments from 5.30 pm) at Gresham College, Barnard's Inn Hall, Holborn, London EC1N 2HH. This is a joint British Society for the History of Mathematics and Gresham College lecture at which the admission is free. The speaker is Adrian Rice from Randolph-Macon College, Virginia, USA. The Victorian period was a time of massive change for London, not least in the development and availability of university-level mathematics. This talk investigates the changes that took place, highlighting some of the famous mathematicians involved, and comparing their teaching styles and the courses they offered at a wide variety of teaching establishments across the capital between 1837 and 1901. For further information contact June Barrow-Green (j.e.barrow-green@open.ac.uk).

UK-JAPAN WINTER SCHOOL

The UK-Japan Winter Schools have been held since 1999. Ever year the focus is on a special topic. For the next Winter School the topic will be "Geometry and Analysis Towards Quantum Theory". The aim of the School is to bring together Japanese and UK scientists, in particular also young researchers and students from mathematics and mathematical physics, in a relaxing and stimulating atmosphere. It will be held from 6-9 January 2004 at Durham University. Lectures will be given by Alexander Veselov, Ed Corrigan, John Rawnsley, Simon Salamon, Mark Gross. For further information contact John Bolton, Department of Mathematical Sciences, University of Durham (john.bolton@durham.ac.uk) or

Martin Guest, Department of Mathematics, Tokyo Metropolitan University (martin@comp.metro-u.ac.jp) or visit the website www.hull.ac.uk/php/masjb/wshome.html.

CROATIAN CONGRESS OF MATHEMATICS

The Croatian Mathematical Society is pleased to announce The Third Croatian Congress of Mathematics, to be held in Split, Croatia, from 16-18 June 2004. The Congress will have a strong international component, and it is open to all areas of mathematics. The programme includes Plenary Lectures, parallel sessions, and CMS award lecture. The parallel sessions include invited lectures and contributed talks (15 minutes) selected by the Scientific Committee.

Plenary Lecturers:

- Mladen Bestvina (Utah, USA)
- Jak_a Cvitani_ (Southern California, USA)
- Zlatko Drma_ (Zagreb, Croatia)
- Lars-Erik Persson (Lulea, Sweden)
- Marko Tadi_ (Zagreb, Croatia)
- Guido Weiss (Washington, St Louis, USA)

For further information contact Vlasta Matijevi_, Department of Mathematics, University of Split, Croatia (congress@pmfst.hr) or visit the website www.pmfst.hr/congress/print_en.htm.

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RECORDS OF PROCEEDINGS AT MEETINGS

REGIONAL ORDINARY MEETING

held on *Friday 24 October 2003* at the University of Southampton. At least 50 members and visitors were present for all or part of the meeting.

The meeting began at 3:30 pm, with Professor A.J. SCHOLL, Vice-President, in the Chair. Fourteen people were elected to Ordinary Membership: A.A. Adams, M.J. Bright, R.A. Earl, M. Farber, K.R. Khusnutdinova, D. Lesnic, S.J. Norton, N.C. Ovenden, B. Sandstede, J. Schroer, B. Sheppard, A. Veretnnikov, S. Willerton and J.M. Woolf; and five people were elected to Associate Membership: R.T. Bayley, M.R. Brimicombe, J.S.F. Duffy, N. Tsangarides and B. Winn.

The Records of the Proceedings of the Society Meetings held on 20 June and 22 July 2003 were signed as a correct record.

Two members signed the book and were admitted to the Society.

DR D.R.J. CHILLINGWORTH introduced a lecture given by M. Viana on 'Multiplying Matrices'.

After tea, Dr D.R.J. Chillingworth introduced a lecture given by P. Holmes on 'Piecewise-Holonomic Mechanics, Hybrid Dynamical Systems and Escaping Cockroaches'.

Professor Scholl expressed the thanks of the Society to the University of Southampton and the speakers for putting on such an excellent meeting.

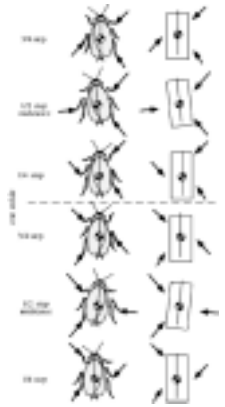
After the meeting a reception and dinner were held in the Blue Room at the Staff Social Centre, University of Southampton.

SOUTH WEST & SOUTH WALES REGIONAL MEETING

The University of Southampton Mathematics Department was the venue for a pair of meetings held over the last weekend of October. First the South West and South Wales branch of the London Mathematical Society held its annual meeting on Nonlinear Dynamics on Friday 24 October. This was followed on Saturday and Sunday by an LMS-funded Workshop on Nonlinear Dynamics and Life Sciences. Both meetings were well attended, with participants coming both from the southwest region and from further afield, including Glasgow, Portugal, Brazil, USA and Japan.

The regional meeting began at an extremely civilised hour (possibly to ensure full attendance from PhD students?), and after well-orchestrated applause had welcomed new LMS members, the ancient and noble rite of signing the LMS Book of Mathematicians took place. The new LMS members performed their role with due dignity and deference, in a ceremony surely identical to that involving the likes of Cayley 150 years ago. The formalities over, the mathematical part of the proceedings began. This meeting consisted of two talks, from opposite ends of the dynamics spectrum. The opening talk by Marcelo Viana represented the pure mathematics face of dynamical systems. His title of 'Multiplying matrices' lulled everyone into a false sense of security, and all those who assumed they knew all about matrix multiplication discovered they had much to learn, especially about random matrices. This was followed by an applied talk, the first talk of the weekend on cockroaches (and not the last!), by Philip Holmes. Several compelling, yet revolting, videos (and much excellent modelling) later, we dispersed to the University Staff Social Centre for an excellent dinner. All thoughts of cockroaches had happily gone, replaced by duck, followed by dessert and cheese, leaving the mainland Europeans perturbed by the decadence of the British. A large proportion of those present ensured the continuation of Portuguese as the unofficial language of dynamical systems.

Of all the real-world applications of nonlinear dynamics, many of the most popular belong to the field of Life Sciences — that is, systems connected with biological organisms, including population dynamics, neural networks, epidemiology and physiology. Various different aspects of the difficulty of modelling neural behaviour were discussed at this workshop, including synchronisation of neural activity,



modelling spiking neurons with stochastic equations, detection of nonlinear interactions and the effects of different inhibitory and electrical couplings, in talks by Roman Borisyuk, Tomas Gedeon, Tim Lewis, Pietro-Luciano Buono, John Terry and Philip Holmes. Dynamical systems theory was well represented here too, with contributions by Stefano Luzzato, Ian Stewart, Marcelo Viana and Tsuyoshi Chawanya, on stability under different perturbations, a groupoid formalism for synchrony in symmetric networks, equilibrium states in statistical mechanics and exotic attractors in dynamical systems with invariant subspaces. The meeting closed with a talk by David Rand on the designs behind internal Circadian clocks, which served to remind us to be very thankful for the extra hour gained from the clocks going back!

All in all this was an excellently organised meeting, drawing a diverse and interesting selection of speakers, and was useful both in terms of introducing the audience to new applications in the life sciences, and reporting new advances in dynamical systems theory.

Rob Sturman
University of leeds

.M. Kubow & R.J. Full, The role of the mechanical system in control: a hypothesis of self-stabilization in hexapedal runners, *Phil. Trans. Roy Soc. Lond. B*, **354**, pp 849-861, 1999

WOMEN AND THE RAE

Although RAE 2001 was the third such exercise it was the first time the gender of selected staff was noted. This provides us with some interesting statistics which comment on the gender equality of the UK mathematical community.

The Units of Assessment considered are:
22 - Pure Mathematics
23 - Applied Mathematics
24 - Statistics and Operational Research
25 - Computer Science.

We are indebted to Richard Puttock of HEFCE for providing us with the statistics. The figures are for category A, A* and C staff submitted for assessment, i.e. only those eligible to include outputs in the assessment.

Female Participation

UofA	22	23	24	25	22-24	22-25
Female Staff of selected staff	7	10	16	13	10	12

Table 1: Gender distribution of selected staff

First to note is the low percentage of women being submitted to the RAE. However, does this just reflect the UK mathematical community? We can compare the statistics with HE's figures for mathematical academic positions held in 2000/2001 in the UK. Of the 3208 mathematical positions held in the UK (this includes permanent and fixed term positions but excludes hourly paid/casual staff) 518 positions were held by women, which represents approximately 16% of the total. This implies that female mathematicians are under represented in the RAE.

Age Distribution

Age	20-29	30-39	40-49	50-59	60+
% of Female Staff	8	52	20	17	3
% of Male Staff	4	30	26	26	15

Table 2(a): Age distribution of selected staff in UoAs 22-24.

Age	20-29	30-39	40-49	50-59	60+
% of Female Staff	6	46	30	16	2
% of Male Staff	4	32	29	25	10

Table 2(b): Age distribution of selected staff in UoAs 22-25.

Apart from UoA 25 (where the figure is 44%) every other UoA shows that over 50% of the female mathematicians submitted were under 40 years of age. The age profile for the male mathematicians is much more evenly distributed.

Contracts

On fixed term contract	22	23	24	25	22-25
% of Female Staff	47	27	20	14	21
% of Male Staff	15	13	13	11	13

Table 3: Gender and fixed term contract distribution of selected.

We note that the percentage of staff on fixed term contracts is higher for women in every UoA.

Ratings

Rating of department	1	2	3a	3b	4	5	5*
% of Female Staff	0	2	16	5	25	32	20
% of Male Staff	0	1	11	4	26	39	20

Table 4: Gender and rating distribution of selected staff in UoA 22-25.

It appears that the male and female researchers selected are distributed similarly between the differently rated departments. This also holds when individual UoAs are considered.

Comment

As Table 3 illustrates many of the female mathematicians being submitted to the RAE are not on permanent contracts. This leads us to ask a couple of questions: Are women with permanent positions being submitted to the RAE? What happens to the women on temporary contracts?

We begin by analysing further statistics relating to the first question. HESA's figures tell us that 278 women held permanent mathematical academic positions in the UK in 2000/2001. This represents 13% of the total 2154 positions available. If we now consider the RAE statistics we see that of the 180 female researchers submitted to the RAE for UoAs 22-24 this includes 51 on temporary contracts. Corresponding results for male researchers show that 1563 male researchers were submitted of which 216 were on temporary contracts. Thus less than 50% (129/278) of women in permanent positions were submitted to the RAE in comparison with over 70% (1347/1876) of men in permanent positions.

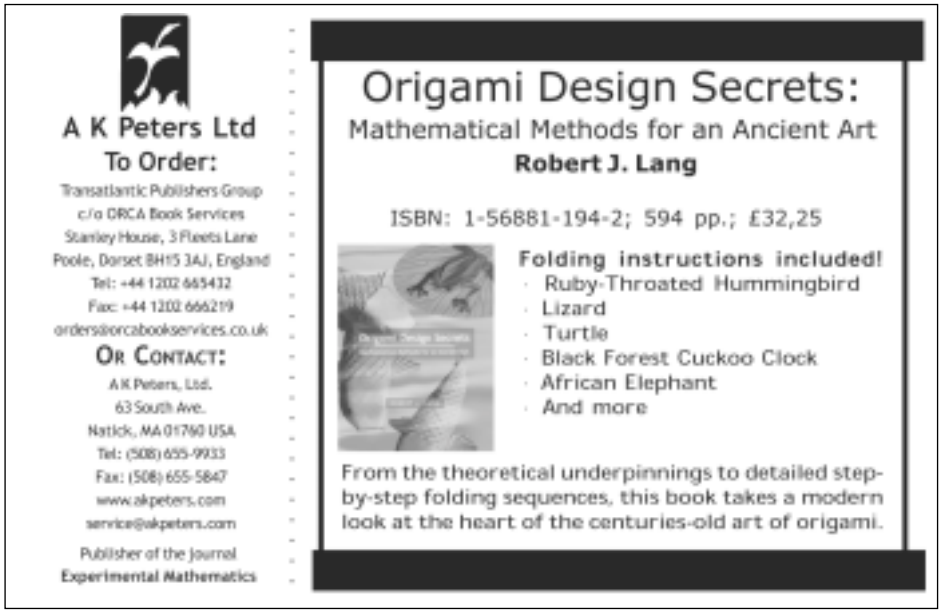
That less than 50% of women in permanent positions are being submitted to the RAE needs consideration. One explanation could be that many women are in Institutions not submitting to the RAE. This needs investigating but seems possible, as many women take into considera-

tion where their partner is working when applying for jobs. We should also note that the RAE assesses research and that is only one part of the varied work of an academic. Do the statistics reflect that female academics tend to become overburdened with other duties such as administration and teaching? Even if this isn't intentional, that women are in general more conscientious about their teaching than their male counterparts is commonly acknowledged and can be harmful to womens' research output. Also the desire to have women on committees can mean that the few women in mathematics departments can end up with more than their fair share of administrative duties.

Tables 2(a) and 2(b) offer us insight into the second question. Certainly the women being submitted to the RAE are younger than the men and consequently more likely to be on temporary contracts. This could be viewed positively - it is the beginning of a trend and soon many more women will be in permanent academic posts and being submitted to the RAE. However, we are hesitant about this interpretation. We suggest that a large number of women are dropping out of the 'academic race' between the ages of 30-40. This has now become the age in which to secure a permanent position, however for many women it is also the time to have children.

Finally we look again at Table 1 and note the discrepancies between different UoAs in the inclusion of female staff. Do these differences indicate that women prefer certain types of mathematics to others, i.e. statistics as opposed to pure mathematics, or is it a comment on the culture of different mathematical communities, some cultures being more female-friendly than others?

Rachel Camina & Cathy Hobbs
(LMS Committee on Women in Mathematics)



LMS PROGRAMME AND CONFERENCE FUND

The Programme and Conference Fund is used to give financial support for mathematical research in the UK. The fund is administered by the LMS Programme Committee, which distributes as grants some of the funds that the Society receives from its investments and publishing activities. This is one of the mechanisms through which the Society achieves its central purpose, namely to 'promote and extend mathematical knowledge'. The Society operates as a charity and does not receive any public funding. Thus Programme Committee has different opportunities and works within a different regulatory framework from other funding bodies, such as the EPSRC. Grants are made under six schemes which are described below.

Please note that the Society's income has fallen, and Programme Committee is not able to make awards as often or as fully as it would like.

How to Apply

For Schemes 1-5 application forms may be obtained from the Society's Office or may be downloaded as rich text files from the LMS website (www.lms.ac.uk). For Scheme 6 applications should be made by letter. All applications should be sent in hard copy to the Programme Secretary at De Morgan House.

Grants must be claimed in a specified financial year from 1 September to 31 August. Please ensure that you state in your application in which year you intend to claim the grant, bearing in mind that grants should normally be claimed not earlier than 3 months before, and not later than 3 months after, the event for which the grant is made.

Who may Apply

For Schemes 1,2,3,5 and 6 any mathematician working in the UK is eligible to apply for a grant, but if the applicant is not a member then the application must be countersigned by an LMS member. For Scheme 4, only LMS members working in the UK are eligible.

When to Apply

Please note that applications will not be considered between mid-June and mid-September. The main meetings of the Committee are held in February and September. Additional meetings are held in between, but time at these is very limited and it cannot be guaranteed that your application will be considered. For the date of the next meeting please contact Sylvia Daly (grants@lms.ac.uk), but above all please note that some of the individual schemes have their own deadlines: these are detailed under the headings for each scheme.

Assistance

Queries regarding applications can be addressed to the Programme Secretary, Stephen Huggett (tel: 01752 232710) or Sylvia Daly (tel: 020 7291 9971), who will be pleased to discuss proposals informally with potential applicants and give advice on the submission of an application. For general information on completing your application please refer to the Notes for Guidance. For assistance please email grants@lms.ac.uk.

Multiple Applications

The Society does not like to receive sequential applications for grants to support the same or closely related events, and will not allow its limits for individual schemes to be exceeded by artificially sub-dividing an application into a number of separate requests under different headings.

In the case of satellite conferences, organisers of the main meeting are asked to give brief details of any planned satellites as part of their application for a conference grant. Applications for support for satellite meetings should make clear the financial and organisational connection with the main meeting. This is particularly important in cases where the expenses of speakers could be shared between the two meetings. Special arrangements apply to the BMC and its satellites.

Notes for Guidance

Applicants should keep in mind the following points:

1. The committee does not normally meet the full cost of an activity. Rather it aims to give added value to an event largely funded by other means, or to bridge the gap between cost and the resources that might reasonably be made available by a university department.

2. The grants do not cover departmental overheads. The committee will generally not allow items such as secretarial costs, which could be seen as part of normal departmental provision, or entertainment.

3. Applicants should note that our mileage rate is 23p.

4. Each of the schemes has a particular aim as well as its own financial limits. It is helpful if applicants consider carefully how their proposal fits the particular scheme in question, and its detailed rules (which change from time to time). Thus the academic justification for a Scheme 2 grant should focus on the benefit to UK mathematics that the proposed visit would bring, while that for a Scheme 5 grant should focus on the benefits in the Scheme 5 country. In neither case should it be assumed that the distinction of the visitor renders further justification unnecessary.

5. The committee is made up of mathematicians with a wide spread of research interests, but it should not be assumed that they are familiar with the technical details of any particular area of mathematics. Proposals are judged by the committee itself: although it may seek advice, it does not normally send proposals to referees. It is therefore important that the case for a grant should be written for the general mathematician and not for the specialist.

6. The committee judges each application on its merits. Since its membership changes from year to year, it should not be assumed that it is familiar with the details of previous applications and correspondence from earlier rounds; nor should it be assumed that a grant, for example under Scheme 3 or for a regular collaboration under Scheme 4, will be renewed repeatedly.

7. The limits mentioned in the various schemes are upper bounds, not standard awards. Grants are made to meet actual expenditure on items in the application, and any surplus must be returned to the Society, rather than retained for related purposes or carried forward to another year.

8. Applications should be brief and self-contained. Please do not append substantial documents that contain irrelevant detail or refer to websites for key information.

9. The task of collating applications, forwarding them to the committee, recording decisions, and preparing and checking notification letters is nontrivial and time-consuming. Please apply well in advance and bear in mind that you may not hear the outcome of an application immediately.

Scheme 1 - Conference Grants

Grants are made to the organisers of conferences to be held in the United Kingdom. Programme Committee tends to give priority to the support of meetings where an LMS grant can be expected to make a significant contribution to the viability and success of the meeting. The Society expects that the meetings which it supports will be open to all members of the Society, and will only support a closed meeting if an exceptional case is made. Support of larger meetings of high quality is not ruled out but for such meetings an LMS grant will normally cover only a modest part of the total cost. Potential applicants should note that the Society is reluctant to award grants to conferences which clash with other significant mathematical meetings in Britain such as the British Mathematical Colloquium or the British Applied Mathematical Colloquium.

The current upper limit for grants is £5,000, the size of the grant to take into account the length of the conference, the number of UK participants and the number of research students taking part. The basic grant shall not normally exceed £3,000, with additional support available for research students (up to £1,000) and 'Scheme 5' participants (up to £1,000). The basic grant is primarily intended to cover the expenses of principal speakers.

Please note:

1. The Committee will often find it difficult to fund the full amount asked for.

2. Reasonable registration fees of between £10 and £20 should be charged; the Committee seldom supports meetings with a registration fee of more than £50 per day.

3. The Committee will support only mathematical meetings or the mathematical component of wider meetings.

Applicants should note that conference attendance will not be funded, except for principal speakers, research students, and 'Scheme 5' participants. Support here is intended to contribute to travel, accommodation and subsistence costs, but not registration fees.

The Society will not make grants to cover the cost of secretarial help, excessive room charges, publicity, or conference dinners and entertainment: it expects such items to be covered by contributions in kind from the host department, or by registration charges, or by income from other sources.

The Society wishes to support UK based research students, and applications should include details of the extent to which such research students will be involved in the conference. Up to £1,000 may be awarded to support participants who are research students at UK universities. (In this context 'research student' means 'research student of any nationality studying at a UK university'.)

The Society also wishes to encourage overseas participants from countries within the scope of Scheme 5 (see below); a further £1,000 may be awarded to support such participants.

These additional grants are intended to help widen participation in a meeting. The committee does not expect that all of these sums will necessarily be spent; any surplus must be returned to the Society and may not be used for other purposes. Academic and financial reports of the conference are required.

Applications are considered at the September, February and June meetings of Programme Committee. Deadlines for receipt of applications for these meetings are 31 August, 31 January and 31 May.

Scheme 2 - Visitors

Some financial support is provided for visitors to the UK who give lectures in at least three separate institutions.

The LMS contribution under this scheme is towards actual expenses for travel (international and within the UK), accommodation and subsistence, up to a maximum of £1,200. The grant is only intended as a partial contribution and applicants are expected to approach the host institutions for funding to cover the remainder of these costs. Applicants are responsible for making all the arrangements for a visit under this scheme and are expected to make economical travel arrangements where possible, e.g. Apex air fare and 2nd class rail fare. A maximum of £50 a day is allowable for accommodation and subsistence according to the formula: actual accommodation costs up to £35 per day, £15 per day for other subsistence costs. Academic and financial reports of the visit are required.

There are no specific deadlines but normally an application should be submitted at least three months before the date of the proposed visit to allow for consideration by the LMS Programme Committee and an announcement of the visit in the Society's Newsletter. Applications will not be considered between mid-June and mid-September.

Scheme 3 - Support of joint research groups

The scheme is to provide support for groups of mathematicians, working in at least three different locations in the United Kingdom, who have a common research interest, who wish to engage in collaborative activities and whose geographical locations are such that reasonably frequent regular meetings—several per year—are a realistic possibility.

The maximum grant awarded is currently £1,200; this is awarded where four meetings per year are held, or there is an equivalent level of activity. Meetings should be open, and have at least two formal talks on the programme. The grant is made for the academic year and the Society requires academic and financial reports.

A grant may be used for a variety of purposes associated with the group's activities, such as expenses for speakers at common seminars, travel for group members between institutions either for research visits, seminars or study groups, or support for TMR networks (on items ineligible for EU grants). The Society wishes to support research students and young postdoctoral mathematicians, and applications should indicate details of the extent to which they will be involved in the programme. No strict criteria will be laid down as to the use of the money but the Society reserves the right to judge whether the activities proposed in an application are appropriate for a grant.

Renewals

Applications for renewal should be made using an application form and be accompanied by full financial and academic reports. Programme Committee will normally either:

a) renew at some appropriate level, or

b) give notice of termination at the end of the calendar year, in which case a sum equal to not more than one third of the previous year's grant can be claimed to cover actual expenditure in the residual period.

In both cases, the application form should be completed by a nominated 'grant-holder', who will be responsible for the use of the grant, and countersigned by a 'supporter' from each of at least two further institutions. (If none of the applicants is a member of the Society, the application must be countersigned by a member of the Society.)

New and renewal applications are considered at the September meeting of Programme Committee. The deadline for receipt of applications for this meeting is 31 August. Renewal applications will also be considered at meetings between September and December, and should be submitted as soon as final reports can be completed.

Scheme 4 - Collaborative small grants

The aim of the scheme is to provide small grants to individual LMS members within the United Kingdom to help support a visit for collaborative research, either by the grantee to another institution within the UK or abroad, or by a named mathematician from within the UK or abroad to the home base of the grantee. Each application should be for one visit only. The time available for joint research arising from the grant is expected to be at least several working days. The maximum sum available is £500 or £250 if the visits are between UK institutions and, where necessary, grantees will have to cover further costs from other sources such as departmental or personal funds. The intention is to provide sufficient funds so that the call on other sources is held within manageable bounds.

Applicants should bear in mind that the purpose of the Scheme is to support specific projects with named collaborators and not, for example, simply to contribute to the costs of a sabbatical visit. A brief report on the use of the grant is required: this should describe the academic outcome of the visit and give financial details.

Applications for a grant under this scheme may only be made by LMS members working in the UK. Applications are considered at the September, February and June meetings of Programme Committee. Deadlines for receipt of applications for these meetings are 31 August, 31 January and 31 May. Normally only one grant will be made per collaboration in any financial year (September to August) and in the event of over-subscription in any particular round, applicants who received an award in the previous financial year will not be considered.

Scheme 5 - International Short Visits

This scheme, originally to support mathematics in the countries of the former Soviet Union, has been extended to other countries. It excludes the countries of Western Europe, North America, and Australia. The status of other countries will be determined by Programme Committee case by case. For visits to Britain, the maximum grant shall be £1400, and up to £500 for actual travel costs. A maximum of £50 a day is allowable for accommodation and subsistence according to the formula: actual accommodation costs up to £35 per day, £15 per day for other subsistence costs. For visits from Britain, the maximum grant is £1200.

Success of an application will depend mainly and crucially on the likelihood of potential benefit to mathematics in the country concerned. Grants will not be made solely for attendance at conferences. Where a visit to or from the UK includes a conference, it should also include other academic activities which in themselves would justify the grant, and should be for a total period of not less than 14 days. For visits to the UK, any expenses during the period of a conference should be met by the conference organisers (see 'Conference Grants' above). Academic and financial reports of the visit are required.

Applications for a grant under this scheme should be made by mathematicians at UK institutions, both for visits to the UK and for visits to the countries concerned. Applications are considered at the September and February meetings of Programme Committee. Deadlines for receipt of applications for these meetings are 31 August and 31 January.

Scheme 6 - Connectivity Grants

Up to £500 may be awarded towards the cost of exploring potential new collaborations between mathematicians and non-mathematicians on new applications of mathematics. The use of the grants is not restricted but might include the costs of a small-scale meeting to identify problems or travel costs to bring in external experts. The intention is to help the applicants do the preparatory work prior to a larger scale application to EPSRC. The application should be by short letter giving:

1. the names of at least two co-applicants, one a member of a mathematical science department and one a member of a non-mathematical department;
2. outline CVs of the two applicants;
3. a description of how the grant would be used;
4. the financial year (starting 1 September) in which you would wish to claim the grant.

Preference will be given to novel areas of application. Support for existing collaborations is not eligible. A brief report on the use of the grant is required: this should describe the academic outcome of the work and give financial details.

If none of the applicants is a member of the Society then the application must be countersigned by a member. Applications are considered at the September, February and June meetings of Programme Committee. Deadlines for receipt of applications for these meetings are 31 August, 31 January and 31 May.

Grants awarded since June 2003

Scheme 1

Applicant	Title	Grant
J. Brodzki	Applications of K-theory and Cohomology	£4,000
M. Dzamonja	David Fremlin's Retirement Meeting	£1,510
M.M. Jones	One Day Function Theory Meeting	£590
G. Robinson, G. Röhrle	Coxeter Groups, Hecke Algebras and related topics	£2,000
P. Fleischmann, R.J. Shank	Modular Invariants and Representations of Finite Groups: Theory and Computation	£2,182
J. Levesley	Will Light Conference on Approximation Theory and Applied Analysis	£1,650
G. Shore	Strings, Gauge Fields and Duality - conference to mark the retirement of Professor David Olive, CBE, FRS	£3,000
D. Lesnic	5th International Conference on Inverse Problems in Engineering: Theory and Practice	£1,000
N. Riley	Mathematical Modelling of the Global Ocean	£1,000
R.F. Bailey	15th Postgraduate Combinatorial Conference	£1,648
B.M. Brown	Differential and Integral Operators in Lp Space - to mark the 65th birthday of Professor W.D. Evans	£3,000
M. Lackenby	Three dimensional geometry and topology	£2,000
C.J. Budd, G.W. Hunt	Folding Patterns in Structural Geology, Theory and Experiments	£800
I. Graham	3rd International Conference on Boundary Integral Methods: Theory and Applications	£2,000

Scheme 2

Applicant	Visitor	To Visit	Grant
J. Kellendonk	J. Bellissard	Cardiff, Oxford, Leicester	£1,200
J. Zacharias	J.A. Kaminker	Nottingham, Newcastle, Glasgow	£1,078
B. Zilber	M. Taitslin	Oxford, Leeds, Manchester, Edinburgh	£1,200
V.M. Rothos	M. Feckan	Leicester and two other institutions	£1,170
M. Berger	A. Petrosyan	UCL, St Andrews, Manchester, Oxford	£1,200
G. Grimmett	S. Janson	Cambridge, Oxford, UCL	£639
D.G. Larman	J.R. Alfonsin	Oxford, UCL, Cambridge	£164
D. Crisan	J. Xiong	Imperial, Oxford, Warwick	£700
R.V. Craster	A. Shanin	Imperial, Reading and one other institution	£1,200
D.E. Evans	V.M. Manuilov	Cardiff, Glasgow, Swansea	£1,200
K.R. Khusnutdinova, R.H.J. Grimshaw	M.V. Pavlov	Loughborough and two other institutions	£1,200
L.C.G. Rogers	U. Cetin	Cambridge, Imperial, Oxford	£750
C.J. Smyth	D. Boyd	Edinburgh, East Anglia, Royal Holloway	£1,100
J. Gray	J. Conway	Open, Warwick, Greenwich	£475
A. Duncan	V. Guirardel	Newcastle, QMUL, UMIST	£650

Scheme 3

Applicant	Institution	To Visit	Grant
I.R. McIntosh	York	Yorkshire Differential Geometry Days	£1,200
J.M. Figueroa-O'Farrill	Edinburgh	North British Mathematical Physics Seminar	£1,200
A.F. Jarvis	Sheffield	North of England Algebraic Number Theory Group	£1,000
M. Dritschel	Newcastle	North British Functional Analysis Seminar	£900
N. Snashall	Leicester	Bristol Leicester Oxford Colloquium (BLOC)	£1,200
I. Gordon	Glasgow	North British Algebra and Representation Theory	£1,200
J.R. Terry	Loughborough	Mathematics in Medicine and Biology	£1,200
T. Brzezinski	Swansea	Quantum Geometry of Hopf Algebras and Hopf Algebroids	£600
J. Brodzki	Southampton	K-Theory and Analysis	£1,200
G.K. Sankaran	Bath	Algebraic Geometry Seminar (COW)	£1,200
A.D. Gilbert	Exeter	Scalar Mixing in Fluid Flows and Mappings	£900
S. Rees	Newcastle	North Eastern Geometric Group Theory Seminar	£900
J.P.C. Greenlees	Sheffield	Transpennine Topology Triangle	£1,200
B.D. Mestel	Stirling	Scottish Network on Nonlinear Dynamics, Fractals and Applications (ScotDyn)	£1,200
A.P. Fordy	Leeds	Classical and Quantum Integrability	£1,200
S.D. Galbraith	Royal Holloway	Computational Number Theory (SECANTS)	£600
J.S.W. Lamb	Imperial	London Dynamical Systems Group	£1,200
R. Sharp	Manchester	Ergodic Theory	£1,200

Scheme 4

Applicant	Institution	Collaborator	Institution	Grant
F.P.A. Coolen	Durham	T. Augustin, K. Weichselberger	Ludwig Maximilians, Munich	£500
O.H. King	Newcastle	A. Cossidente	Basilicata	£500
T. Ward	East Anglia	M. Einsiedler	Washington	£500
M.G. Blyth	East Anglia	C. Pozrikidis	California at San Diego	£500
P. Ashwin	Exeter	O. Popovych	NAS, Kiev	£500
A.V. Mikhailov	Leeds	T. Wolf, J.P. Wang	Brock, Ontario	£500
P. Fleischmann	Kent	A. Zalesski	East Anglia	£250
G. Röhrle	Birmingham	A. Premet	Manchester	£250
J.P.C. Greenlees	Sheffield	R.R. Bruner	Wayne State	£365
C-H. Chu	QMUL	M. Mackey	University College Dublin	£480
J.R. Partington	Leeds	E. Gallardo	Zaragoza	£500
S. Whitehouse	Sheffield	F. Clarke, M. Crossley	Swansea	£250
R. Twarock	City	V. Mazorchuk	Uppsala	£500
A. Rucklidge	Leeds	V. Kirk	Auckland	£500
J. Bolton	Durham	L. Vrancken	Valenciennes	£400
J.B. Fountain	York	G.M.S. Gomes	Lisbon	£500
A. Grigor'yan	Imperial	J. Hu	Beijing	£500
A. Pushnitski	Loughborough	N. Filonov	St Petersburg	£500

Scheme 5

Applicant	Visitor/Institution	To Visit	Grant
J-L. Wu, H. Zhao	M-F. Chen (Beijing)	Loughborough, Oxford, Hull, Swansea	£1,350
E. Kissin	Y. Turovskii (Azerbaijan)	London Metropolitan, Newcastle, Leeds, Cambridge	£1,800
M. Mathieu	K. Klis (Krakow)	Queen's University Belfast	£950
J. Whiteman	D. Reddy, J. Lubuma (Pretoria)	Cape Town	£1,200
J. Hubbuck		N.H.V. Hung (Hanoi, Vietnam)	£1,200
P.E. Kopp		AIMS and Stellenbosch Institute	£1,200

REVIEW

Science, not Art - Ten Scientists' Diaries ed Jon Turney, 2003, Calouste Gulbenkian Foundation, ISBN 0903319985, 160 pp, £8.50 pbk.

"The taste of a triangle". This reference to the difficulty of explaining a synaesthesia symptom was made by Mark Lythgoe as an apt analogy for the problem scientists often face in describing their work to non-scientists or even to other scientists working in a different field of science. The occasion was a panel discussion held at the Royal Society on 30 September 2003 and organised by the Gulbenkian Foundation to mark the publication of the book commissioned by the foundation: 'Science, not Art'.

This book of diaries kept by ten younger scientists over a six month period elegantly avoids such difficulties of explanation by providing insight into their work through their everyday activities. It should be accessible to anyone, whether or not science is a part of their lives. The book is a companion to a very well received book of artists' diaries 'Art, not Chance' and this scientists' version deserves to be just as well received. The diaries reflect much variety in the lives of each of these scientists as well as the variety in the different fields of work. Yet there are some strong common themes that emerge. Most prominent is the 'roller-coaster' existence of the scientists with peaks of elation at revelations mixed with the frustration and despair of rejection (usually of grant proposals) and the mundane work. There is also a sense of passion about the science that each of these scientists is involved with, which explains how they can survive the troughs.

The diarists consist of a mathematician, a cosmologist, an ecologist and meteorologist, a neurophysiologist, a marine biologist, a palaeopathologist, a biophysicist, a geneticist, a physical chemist, and a doctor and space physiologist. Consequently the diaries cover a broad range of experiences from field trips (the rainforest and the mid-ocean ridge), to the angst of defending a 20 million dollar grant proposal. The diaries touch on the rivalry with other scientists, collaborations with colleagues and PhD students, presenting and publishing concerns, the difficulties of juggling work and family life, and the significance of coffee for inspiration.

The panel at the Royal Society event involved two science diarists: Marcus du Sautoy (mathematician) and Mark Lythgoe (neurophysiologist) along with two art diarists: Shobana Jeyasingh (choreographer) and Lawrence Norfolk (novelist) and was chaired by Sian Ede (the Arts director of the Gulbenkian Foundation). The discussion brought out the mutual understanding of the significance of specialised languages and narratives in each area of expertise even though the details could not easily be conveyed directly.

For art and science diarists alike, the creative journey is clearly central, but the creativity is always rooted in the necessary and seemingly endless grind of experiments and everyday chores. The diaries appear to be an excellent way to engage a broader public audience without having to explain what the sound of a triangle tastes like!

Chris (computer scientist) and Diane (paper artist) Reade

INSTITUT DES HAUTES ÉTUDES SCIENTIFIQUES

The Institut des Hautes Études Scientifiques, located in Bures-sur-Yvette (France), welcomes each year 200 to 250 mathematicians and theoretical physicists from all over the world and for various periods (2 or 3 weeks up to 1 or 2 years).

Created in 1958, the IHÉS is a private foundation of international standing with the purpose of supporting and developing theoretical research in pure mathematics, theoretical physics and more recently, molecular biology. The IHÉS is financed by the French Ministère de la Recherche, some European research agencies such as the Engineering and Physical Sciences Research Council (EPSRC) in the United Kingdom, the US National Science Foundation, the European Union, and several French and foreign foundations and companies. In February 2000, the European Commission acknowledged the IHÉS as a Large European Research Infrastructure centre.

Mark Lythgoe

Director: Jean-Pierre Bourguignon
Permanent Professors: Thibault Damour, Mikhael Gromov, Maxim Kontsevich, Laurent Lafforgue, Nikita Nekrasov
Honorary Professor: David Ruelle
Léon Motchane Chair: Alain Connes
Louis Michel Chairs: Michael Douglas, Jürg Fröhlich, Samson Shatashvili
Long-term CNRS visitors: Ofer Gabber, Dirk Kreimer, Christophe Soulé
External Members of the Scientific Committee: Alain Connes, Bernard Derrida, Curtis Callan, Michael Green, Stanislas Leibler, George Papanicolaou, Michael Rapoport

WILLIAM HODGE FELLOWSHIPS: 2004/2005

EPSRC has now been supporting the IHÉS for a number of years and decided in 2000 to foster closer links between British institutions and French mathematical research centres of excellence. British mathematicians and theoretical physicists are invited to apply to the IHÉS to visit and additionally to use the opportunity to visit research groups in the Paris region. More information is given on the IHÉS website. In addition, the EPSRC and the IHÉS are offering annually two 1-year fellowships under the name of Sir William Hodge, the eminent British mathematician whose main interests were in algebraic and differential geometry. The fellowships will enable outstanding young mathematicians and theoretical physicists to spend time at the IHÉS.

Conditions for application

PhD in Mathematics or Theoretical Physics obtained in 2001 or later. One of the two grants will be exclusively awarded to an applicant who has received his/her PhD from a UK University or has spent the last year in a UK university.

Selection of applicants

Applications will be reviewed and selection made based only on the criterion of excellence by the IHÉS Scientific Committee on 17 January 2004. This Committee consists of the permanent professors, the Director, and some external members (names are listed above).

Starting date of the fellowships

Autumn 2004.

How to apply

The application file should be sent through the IHÉS website (www.ihes.fr) and should include: a motivation letter, a CV, a publication list, a research project and two or three letters of recommendation. The deadline is **31 December 2003**.

Information

IHÉS, 35 route de Chartres, F-91440 Bures-sur-Yvette, France.
Tel: +33 1 6092 6600, fax: +33 1 6092 6669, email: hodge@ihes.fr, website: www.ihes.fr

UNIVERSITY OF BIRMINGHAM

LECTURERSHIPS IN PURE MATHEMATICS (Three Posts)

Applications are invited from strong researchers in any branch of Pure Mathematics, either from mathematicians whose work complements existing strengths in the School, or from those whose expertise will add breadth to the Pure Mathematics Group.

Starting salary on scale £22,191 - £33,679 a year depending on experience and qualifications. A £9k 'Golden Hello' supplement may be available. All three posts are available from October 2004.

Application forms (returnable by 12 December 2003) and further details from Personnel Services, The University of Birmingham, Edgbaston, Birmingham B15 2TT; tel: 0121 414 6486; web: www.punit.bham.ac.uk/vacancies. Please quote reference S36665.

Working towards equal opportunities.

ROOMS IN BLOOMSBURY

The 2004 LMS Invited Lectures will be given at the School of Mathematics, University of Southampton. This series is held annually: a single speaker gives a course of 10 expository lectures, examining an important topic in depth, over a five day period. Further details will be announced later on. For general enquiries contact the organiser Dr I. Leary (I.J.Leary@maths.soton.ac.uk).

MATHEMATICIANS VISITING THE UK IN 2003/2004

Aberdeen University

- Lazar, A.J. (Tel Aviv University) Operator Algebras, 20 Oct – 23 Dec '03
- Benn, I. (University of New South Wales) Relativity, Jul – Dec '04

Bath University

- Gutierrez-Penna, E. (National University of Mexico) Bayesian Statistics, Aug '03 – Aug '04

Bristol University

- Brundan, J. (University of Oregon, USA) Pure Mathematics, 29 Sep – 30 Jan '04
- Buchstaber, V. (Moscow State University, Russia) Pure Mathematics, 13 Oct – 13 Dec '03
- Massar, S. (Univ Libre de Bruxelles) Applied Mathematics, 1 Sep – 31 Dec '03
- Rudnick, Z. (Tel Aviv University) Applied Mathematics, 1 Oct '03 – 30 Sep '04

Chester College

- Bocharov, G. (Russian Academy of Sciences, Moscow) Mathematical Immunology, Sep – Dec '03 and Apr – Jul '04

Durham University

- Guifloye, B. (IT Tralee, Ireland) Differential Geometry, 26 Apr – 25 May '04
- Hillman. J.A. (University of Sydney) Applications of Algebra to Low Dimensional Topology and to Knots and Links in all Dimensions, Oct – Dec '03

Exeter University

- Dear, K. (Australian National University) Statistics, Sep – 31 Dec '03
- Emirsajlow, Z. (Technical University of Szczecin) Control Theory, 5 Oct '03 – 31 Jan '04
- Liao, X. (Chinese Academy of Sciences, Shanghai, China) Astrophysical Fluid Dynamics, 1 Oct '03 – 1 Mar '04
- Maistrenko, Y. (Ukraine Academy of Sciences) Nonlinear Dynamics, Synchronization, until Jan '04

Heriot-Watt University

- Afrouzi, G. (Mazandaran University, Iran) Differential Equations, Functional Analysis, Oct '03 – Mar '04

Hull University

- Falkovich, G. (Weizmann Institute for Science, Israel) Mathematical Theory of Turbulence, Mar – Apr '04
- McLeod, J. (Mount Holyoke College) Topological Algebra and Combinatorics, Sep '03 - Jul '04
- Yudovich, V.I. (Rostov University, Russia) Mathematical Fluid Dynamics, 20 Sep – 20 Dec '03

Imperial College London

- Barnea, Y. (University of Wisconsin, USA) Algebra, 1 Aug '03 – 1 Mar '04
- Jaikin, A. (University of Madrid, Spain) Algebra, 29 Sep – 30 Nov '03
- Masumune, J. (Japan Society of the Promotion of Science) Geometry & Analysis of the Dirac & Kohn Laplace Operators, 1 Feb '03 – 1 Feb '05
- Painov, D. (Ecole Polytechnique, France) Geometry, 1 Apr – 30 Jun '04
- Sassi, R. (Politécnico Milano) Fluid Mechanics & Biomechanics, 6 Oct – 19 Dec '03
- Sibini, P. (University of Southern Denmark) Mathematical Physics: Time Dependent Statistics in Complex Systems, Sep '03 – Aug '04
- Sohn, S.Y. (Yonsel University Seoul, Korea) Statistics, Dec '03 – Dec '04
- Zweimuller, R. (University of Salzburg, Austria) Dynamical Systems, 10 Sep '03 – 31 Jan '04

Kings College London

- Dudulhava, R. (Academy of Sciences of Georgia) Integral Equations, Operator Theory, Partial Differential Equations, Mechanics of Solids, Nov '03 – Feb '04

Leeds University (Pure Mathematics)

- Callier, F. (Namur University, Belgium) Analysis & Control Theory, 26 Apr – 25 Jun '04

Leicester University

- Diracca, L. (University of Padova) Algebra, Sep '03 – Sep '04
- Milstein, G.N. (Ural State University) Stochastic Numerics, Mar – Oct '04
- Sun, X. (University of Southwest Missouri, USA) Approximation Theory, Jun-Aug '04

Liverpool University (Pure Mathematics)

- Bryden, J. (University of Southern Illionis, USA) Topology & Representation Theory, Jan – Jun '04

London School of Economics

- Beck, A. (University of Wisconsin) Search Games, Jan – Mar '04
- Gal, S. (Haifa) Search Games, Apr – Jun '04

Loughborough University

- Blagovestchenskii, A.S. (St Petersburg State University, Russia) Reconstruction of Interfaces in Inhomogeneous Media, 3 Nov – 27 Nov '03
- Sutyrin, G.G. (Rhode Island University, USA) Geophysical Fluid Dynamics, Oceanic and Atmospheric Vortices and Fronts, 20 Aug '03 – 20 Apr '04

Manchester University

- Rafikul, A. (Guwchati, India) Numerical Linear Algebra, 25 Mar '03 – Mar '04
- Taras, P. (Moscow State University) Algebraic Theory & Combinatorics, 1 Aug '03 – 31 Jan '04

Napier University

- Kuzmin, G.A. (Institute of Thermophysics, Novosibirsk, Russia) Fluid Dynamics, Turbulence, 15 – 31 Mar '04

Newcastle University

- Agler, J. (University of California, San Diego) Operator Theory, 1 Jul – 31 Aug '04
- Kazatchkov, I. (Omsk University, Russia) Geometric Group Theory, 1 Oct – 21 Nov '03
- Marcantognin, S. (Caracas University, Venezuela) Operator Theory, 1 Jul – 31 Dec '04
- Remeslennikov, V. (Omsk University, Russia) Geometric Group Theory, 1 Oct – 21 Nov '03

LONDON MATHEMATICAL SOCIETY

in association with the Isaac Newton Institute

Spitalfields Day

Monday 9 February 2004

Random Matrix Theory and the Birch/Swinnerton-Dyer Conjecture

Organisers: Brian Conrey (American Institute of Mathematics), David Farmer (American Institute of Mathematics), Francesco Mezzadri (University of Bristol) and Nina Snaith (University of Bristol)

10:30 – 11:00 **Coffee**

11:00 – 11:45 **Bryan Birch and Peter Swinnerton-Dyer (Oxford/Cambridge)**
The origins of the Birch/Swinnerton-Dyer conjecture: some personal reminiscences

12:00 – 12:45 **Alice Silverberg (Ohio State University)**
Ranks of elliptic curves

13:00 – 14:00 **Lunch**

14:30 – 15:15 **Christophe Delaunay (École Polytechnique Fédérale de Lausanne)**
Heuristics on Class groups and on Tate-Shafarevich groups

15:30 – 16:15 **Michael Rubinstein (University of Waterloo)**
Moments, L-values, and Ranks

16:15 – 16:45 **Tea**

16:45 – 17:30 **Chantal David (Concordia University)**
Vanishing of L-functions of elliptic curves over number fields

17:30 – 18:30 **Wine Reception**

The London Mathematical Society Spitalfields Days are an opportunity for recent developments in specialist topics to be made known to the general mathematical community. This Spitalfields Day concerns the Birch and Swinnerton-Dyer conjecture, which describes a deep connection between the rank of an elliptic curve and the order of vanishing of an L-function. Particular attention will be paid to recent work which uses random matrix theory to make precise predictions for the ranks of families of elliptic curves.

These lectures are linked to the Isaac Newton Institute programme on Random Matrix Approaches in Number Theory (26 January - 16 July 2004). Anyone interested is welcome to attend; talks will be aimed at a general mathematical audience. Please let Tracey Andrew at the Institute know by 23 January 2004 if you intend to come, to help us plan for lunch (tel: 01223 335984; fax: 01223 330508; email: t.andrew@newton.cam.ac.uk).

There are limited funds available to assist research students to attend, please apply by 23 January 2004 to Tracey Andrew by email (t.andrew@newton.cam.ac.uk) or post (Newton Institute, 20 Clarkson Road, Cambridge CB3 0EH). Scientific enquiries may be addressed to Nina Snaith (n.c.snaith@bristol.ac.uk).

Nottingham University

- Ihara, Y. (Kyoto University) Number Theory, Mar '04
- Kato, K. (Kyoto University) Arithmetic Geometry, Spring – Summer '04
- Sato, K. (Nagoya University) Arithmetic Geometry, K-theory, Oct '03 – Sep '04
- Saito, S. (Nagoya University) Arithmetic Geometry, Spring-Summer '04
- Stix, J. (University of Bonn) Arithmetic Geometry, Oct '03 – Jan '04

Oxford University (Mathematical Institute)

- Carrillo, C. (Mexico) Mathematical Biology, 1 Oct '03 – 1 Jul '04
- Johnston, A. (University College London) Mathematical Biology, 1 Oct '03 – 30 Sep '04
- Korobkin, A. (Novosibirsk) Hydrodynamics, 8 Nov – 31 Dec '03
- Kroner, H. (Kaiserslautern) Mathematical Finance, 6 Oct '03 – 13 Mar '04
- Liu, R.T. (Taiwan) Mathematical Biology, 4 Aug '03 – 31 Jul '04
- Mackey, M. (Montreal) Physiology, 10 Feb – 18 Mar '04
- Martinez, D. (Spain) Geometry, 1 Oct '03 – 30 Sep '04
- Mena, F. (Portugal) General Relativity, 1 Oct '03 – 30 Sep '05
- Meyer-Hermann, M. (Dresden) Mathematical Biology, 1 Oct '03 – 30 Sep '04
- Nakagaki, T. (Hokkaido University, Japan) Mathematical Biology, Feb – Nov '04
- Panovski, S. (Macedonia) Hydrodynamics, 6 Nov – 17 Dec '03
- Scheerlinck, N. (Belgium) Mathematical Biology, 1 Sep '04 – 28 Feb '05
- Tolev, D. (Bulgaria) Number Theory, 1 Oct – 31 Dec '03
- Zheng, Z. (China) Scientific Comp/PDE, 1 Mar '03 – 28 Feb '05

Portsmouth University

- Kuznetsov, S.P. (Institute of Radio-Engineering & Electronics and Russian Academy of Sciences) Nonlinear Dynamics, Nov '03
- Yaghoobi, M.A. (University of Kerman, Iran) Operational Research, 1 Nov '03 – 1 Aug '04

Queen Mary, University of London

- Bae, J.S. (Chonnam National University, Korea) Statistics, 10 Feb '03 – 31 Jan '04
- Filho, J. (Universidade Federal de Lavras, Brazil) Design of Experiments, 12 Jan - 9 Apr '04
- Zochi, S. (Universidade de São Paulo, Brazil) Design of Experiments, 1 Mar '04 – 28 Feb '05

Royal Holloway

- Schaathun, H.G. (Bergen, Norway) Fingerprinting, 3 Oct '03 – March '04
- Shin, S. (Sookmyung Women's University, S. Korea) Cryptography, 2003-04
- Shparlinski, I. (Macquarie University, Australia) Number Theory & Cryptography, until 19 Dec '03

Salford University

- Krillova, I. (Saratov State University, Russia) Bio Mechanics, Sep '03 – Sep '04
- Nolde, E.V. (Russian Academy of Sciences, Moscow) Asymptotic Methods, Wave Propagation in Solids and Structures, Oct '03 – Oct '04
- Perel, M. (St. Petersburg University, Russia) Wave Propagation in Inhomogeneous Media, Nov – Dec '03

St Andrews University
- Albert, M. (University of Otago, New Zealand) Combinatorics on Permutations, Sep '03 – Jan '04
- Hornig, G. (Ruhr-Universität Bochum) Magnetohydrodynamics, Feb – May '04
- Zhugzhda, Y. (University of Moscow) Magnetohydrodynamics, Spring '04

Strathclyde University
- Athanasiadis, C. (University of Athens) Partial Differential Equations, Scattering Theory, Wave Propagation, Chiral Materials, 13 Oct – 8 Dec '03
- Belyakov, V.A. (Landau Institute of Theoretical Physics, Moscow) Nonlinear Optics in Chiral Liquid Crystals, Electromagnetic Waves in Periodic Media, Solid State Nuclear Physics, 1 Jun – 31 Aug '04

Sussex University
- Skriganov, M. (Steklov Institute, St Petersburg, Russia) Spectral Theory, Combinatorics, 20 Sep – 1 Dec '03

UMIST
- Mendez, V. (Universitat International de Catalunya, Spain) Dynamical Properties of Reaction-Diffusion Fronts, 1 Apr – 30 Jun '04
- Reisen, B.V. (Universidade Federal do Espirito, Brazil) Long Memory Models, 10 Nov '03 – 30 Apr '04
- Yalcinkaya, S. (METU, Ankara, Turkey) Pure Mathematics, 25 Jul '03 – 31 Jul '04

University of Wales, Aberystwyth
- Ervin, V.J. (Clemson University, SC, USA) Viscoelastic Flow, Numerical Analysis, Jul - Aug '04
- Mullen, G.L. (Pennsylvania State University, USA) Design Theory, Finite Fields, Hypercubes, Jun - Jul '04
- Owens, R.G. (École Polytechnic Féderéle de Lausanne, Switzerland) Viscoelastic Flow, Spectral Methods, May '04

University of Wales, Swansea
- Chen, M.F. (Beijing Normal University) Markov Processes & Ergodicity, Nov 14 – 22 '03
- Levendovskii, S. (University of Texas) Pseudo-differential Operators & Markov Processes, Applications to Finance, Mar - Apr '04

Warwick University (Mathematics Institute)
- Brassesco, S. (Instituto Venezolano de Investigaciones Cientificas) Stochastic Analysis, 21 Aug '03 – 31 Aug '04
- Choi, Y. (Kyungpook National University) Hyperbolic Geometry, 16 Oct '03 – 15 Oct '04
- Ghaffari-Saadat, M. (Amirkabir University of Technology, Tehran) Dynamical Systems, 18 Sep – 21 Dec '03
- Ingallis, C. (University of New Brunswick) Noncommutative Algebra, Algebraic Geometry, 1 Sep '03 – 31 Aug '04
- Lecuire, C. (UMPA, ENS-Lyon) Hyperbolic Geometry, 1 Feb – 3 May '04
- Li, M. (National Changhua University of Education) Dynamical Systems, 7 Jul – 31 Dec '03
- Liu, Y. (Yangzhou University) PDEs & Nonlinear Dynamics, 25 Oct '03 – 30 Oct '04
- Marden, A. (University of Minnesota) Kleinian Groups, 15 Mar – 15 May '04
- Moori, J. (University of Natal) Algebra, 30 Jul '03 – 15 Jan '04
- Shen, Y. (Suzhou University) Geometric Analysis, 10 Jul '03 – 10 Jan '04
- Vidal Lopez, A. (Universidad Computense de Madrid) Parabolic PDEs, 30 Sep – 30 Nov '03

Warwick University (Statistics)
- Jayasekara, L. (University of Rumana, Sri Lanka) Contingency Tables, Tests on Contingency Tables, 1 Oct '03 – 31 Mar '04

York University
- Beresnevitch, V. (Minsk University, Belarus) Number Theory, Oct '03 – Aug '04
- Skrigonov, M. (Steklov Institute, St. Petersburg, Russia) Number Theory, Nov – Dec '03

Maths Takes Shape

The Mathematical Association's Annual Easter Conference at the University of York 13th - 16th April 2004

Keynote Speakers

Ian Stewart

Rob Eastaway Des MacHale Kjartan Poskitt

David Acheson Sir Christopher Zeeman

and many other excellent session leaders

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LONDON MATHEMATICAL SOCIETY
Popular Lecture Videos

The Popular Lectures aim to present interesting mathematical topics in an attractive way. The intended audience is post-16 level mathematics students and amateur mathematicians, but the videos would also provide good enrichment material for students and lecturers in university mathematics departments. The videos cost £10 each but can be obtained at the reduced price of £7.50 each if you buy two or more.

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- ***The Music of the Primes*** Professor M. du Sautoy
- ***Our Dynamic Sun*** Dr H.E. Mason
- ***Geometry Ancient and Modern*** Dr J.R. Silvester
- ***Codes*** Professor P.J. Cameron
- ***Simulating the World*** Professor C.J. Budd
- ***Simplicity and Complexity*** Professor J. Barrow
- ***Fractals the New Geometry*** Professor K.J. Falconer
- ***Floating, Spinning Tumbling*** Dr F. Berkshire
- ***Tangent Circles, Patterns and Packings*** Professor C.M. Series
- ***Giraffe Blood Flow and Pattern forming Bacteria*** Professor T.J. Pedley
- ***Marrying, Voting, Choosing*** Dr T.W. Körner

Earlier videos can be hired at £5 per video.

To place an order please contact Lee-Anne Taylor, London Mathematical Society, De Morgan House, 57-58 Russell Square, London WC1B 4HS (tel: 020 7637 3686 fax: 020 7323 3655, email: taylor@lms.ac.uk) or visit the website www.lms.ac.uk.

LMS INVITED LECTURES 2004

Professor M.W. Davis (Ohio State University)
The Geometry and Topology of Coxeter Groups

Monday 5- Friday 9 July 2004

The 2004 LMS Invited Lectures will be given at the School of Mathematics, University of Southampton. This series is held annually: a single speaker gives a course of 10 expository lectures, examining an important topic in depth, over a five day period. Further details will be announced later on. For general enquiries contact the organiser Dr I. Leary (I.J.Leary@maths.soton.ac.uk).

BRUNEL
UNIVERSITY
WEST LONDON

Department of Mathematical Sciences

The Department of Mathematical Sciences at Brunel University has an established record of research achievement with a '5' rating in Applied Mathematics in the most recent UK Research Assessment Exercise. The University's decision to expand existing research strengths has enabled the Department to offer a number of important new posts. Specifically, we wish to appoint:

Professor in Computational Mathematics (Vac Ref: B7773/1)
Lecturer in Computational Mathematics (Vac Ref: B7774/1)

Applications are encouraged from those with strong research records in any area of Computational Mathematics. Current research in the Department, including that of the "Brunel Institute of Computational Mathematics" (BICOM), is on the theory and application of finite element and finite difference methods for problems involving differential and integro-differential equations. Related major activities in Applied Mathematics include research on wave theory and its applications.

Two Lecturers in Mathematics (Vac Ref: B7779/1)

Additionally, the Department has two further lectureships available to support our current research activities in Mathematics and Statistics. In particular we would welcome applications from those with interests in discrete mathematics, financial mathematics or mathematical physics.

These posts provide a significant opportunity to join an established and expanding department and offer the scope and support for individuals and teams to develop substantial research programmes.

Informal enquiries may be made to:

Professor Ken Darby-Dowman, Head of Department of Mathematical Sciences
Tel: +44 (0)1895 203273, mastkhd@brunel.ac.uk
Professor John Whiteman, Director of BICOM
Tel: +44 (0)1895 203270, john.whiteman@brunel.ac.uk

Department of Mathematical Sciences, Brunel University, Uxbridge, Middlesex, UB8 3PH, UK.
http://www.brunel.ac.uk/depts/ma/

For a downloadable application form and further details, please visit Brunel Web Pages on www.brunel.ac.uk Alternatively please send a large self-addressed envelope or you can email to the address below quoting the appropriate vacancy reference number. Closing date for applications is 23 January 2004.

Team B, Human Resources, Brunel University, Uxbridge, Middlesex UB8 3PH, UK
Email teamb@brunel.ac.uk TO WHOM COMPLETED APPLICATIONS MUST BE RETURNED

COMMITTED TO EQUAL OPPORTUNITIES AND REPRESENTING THE DIVERSITY OF THE COMMUNITY WE SERVE

CALENDAR OF EVENTS

This calendar lists Society meetings and other events publicised in the Newsletter. Further information can be obtained from the appropriate LMS Newsletter whose number is given in brackets. A fuller list of meetings and events is given on the Society's website (www.lms.ac.uk/meetings/diary.html).

DECEMBER 2003

8-12 Stochastic Methods in Coagulation and Fragmentation EuroWorkshop, INI, Cambridge (314)
12 Patterns, Nonlinear Dynamics and Applications Meeting, Cambridge University (320)
15 Folding Patterns in Structural Geology Meeting, Bath University (321)
16-18 Cryptography and Coding IX, IMA Conference, Royal Agricultural College, 40Cirencester (319)
18-19 Will Light Memorial Conference, Leicester University (321)

JANUARY 2004

8 Mixing and Its Applications Meeting, Imperial College London (321)
9 UK & Republic of Ireland SIAM Section Annual Meeting, Sheffield University (316)
9 Bristol Leicester Oxford Colloquium, Oxford University (321)
10-11 New Frontiers in Computational Mathematics Workshop, Manchester University (318)
19 Mathematics in the Metropolis Lecture, Gresham College London (321)
20 400 Years of British Mathematics Meeting, Open University (319)
20-23 Towards a Predictive Biology Conference, INI, Cambridge (316)
21 Combinatorics Meeting, Open University (321)

FEBRUARY 2004

9 Random Matric theory and the Birch/Swinnerton-Dyer Conjecture Spitalfields Day, Isaac Newton Institute, Cambridge (321)
20 LMS Mary Cartwright Lecture, London (321)

MARCH 2004

29-1 Apr Modelling Permeable Rocks IV, IMA Conference, Southampton University (319)
30-2 Apr Applications of K-theory and Cohomology Meeting, Southampton University (321) 31-2 Apr Quantitative Modelling in the Management of Healthcare IV, IMA Conference, Salford University (319)

APRIL 2004

5-7 Modelling in Industrial Maintenance and Reliability V, IMA Conference, Salford University (319)
5-8 British Mathematical Colloquium, Queen's University, Belfast (315)
16-17 Howard Hoare Symposium, Birmingham University (321)
19-22 British Applied Mathematics Colloquium, East Anglia University (320)

MAY

12 LMS Midlands Regional Meeting, Nottingham
28-31 Meeting in Honour of Professor Wong, City University, Hong Kong (319)

JUNE 2004

16-18 Croatian Congress of Mathematics, Split University, Croatia (321)
21-25 Mathematics for Industry European Conference, Eindhoven, The Netherlands (321)
27-2 Jul Fourth European Congress of Mathematics, Stockholm (315)
28-30 Analysing Conflict and its Resolution, IMA Conference, Oxford (319)

JULY 2004

2 LMS Northern Regional Meeting, Newcastle University
4-11 ICME10 – International Congress of Mathematical Education, Denmark (308)
12-16 IWOTA – International Workshop in Operator Theory and Its Applications, Newcastle University

SEPTEMBER 2004

1-6 Pan-African Congress of Mathematics,

Tunisia (308)
14-18 Boundary Integral Methods III: Theory and Applications, IMA Conference, Reading University (319)

DECEMBER 2004
14-16 Mathematics in Signal Processing VI, IMA Conference, Cirencester (319)

APRIL 2005
4-7 BAMC/BMC, Liverpool University

JULY 2005
10-14 Mathematical Modelling and Applications Conference, City University, London (321)
AUGUST 2006
22-30 International Congress of Mathematicians 2006, Madrid, Spain (320)

JOSEPH LARMOR
DE MORGAN MEDALLIST
1914

Sir Joseph Larmor received the De Morgan Medal on 12 November 1914. In the prime of his activity, Larmor was concerned with a picture of the physical world as a unity. In his book Aether and Matter, he examined the condition of a material body moving through the aether. Although he himself never adopted the principle of relativity enthusiastically, he did much to prepare the way for it. Larmor anticipated Einstein in making known the transformation later to become so famous generally under the term 'Lorentz-Einstein' transformation. It is by this work, largely paralleled by that of Lorentz, that Larmor was chiefly known.