THE LONDON MATHEMATICAL SOCIETY

London Mathematical Society

Forthcoming Society Meetings

2004
Wednesday 12 May
Nottingham
Midlands Regional Meeting
E. Bayer-Fluckiger
B de Smit
J.L. Colliot-Thélène
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Friday 18 June
London
J. Rickard
T. Tao
(Hardy Lecture)

Friday 2 July
Newcastle
Northern Regional Meeting
M. Gromov
R.I. Grigorchuk
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Friday 17 September
Exeter
South West & South Wales Regional Meeting
R. Langlands
G. Henniart

Friday 19 November
London
AGM

COUNCIL DIARY
19 March 2004

Hot on the heels of the response from a vice chancellor to a letter from our President Frances Kirwan about the imminent closure of his mathematics department was an appeal for help from another department. The buzzword in discussions about closure is 'viability'. What makes a mathematics department viable? Is this the kind of question we should really be asking? More letters need to be written, raising points made by the Smith report and the International Review of Mathematics.

At every meeting, Council approves recent applications for membership. We have noticed a marked increase in the number of applications from graduate students since the EPSRC agreed to fund its own students' membership for five years from the start of their postgraduate study. This seems to be a very good scheme, which we should certainly publicise more.

The Publisher was present as usual for the report of the Publications Secretary, and presented to Council a novel proposal she is investigating to allow electronic subscribers the right to purchase access to sub-ject-defined slices of the Society's publications. On a more down to earth note she reported that access to the electronic *LMS Journal of Computation and Mathematics* will be made much simpler. *Nonlinearity* is doing very well; Council approved the appointment of a new editor.

Programme Committee reported, as is customary at present, that money is tight and the Committee is having to be a bit more cautious with its allocation of funds. But success rates are still high; the LMS is still a good source for relatively small grants which demand little bureaucracy.

Brian Stewart, the Education Secretary, took us rapidly through Adrian Smith's newly released and long-awaited report on post-14 mathematics, *Making Mathematics Count*, which had been discussed the previous day by the Education Committee. The Society had already, shortly after the release of the report, issued a supportive press release; it was vital that we support this attempt to examine and address the serious mathematics skills shortage. We would follow this up with a letter to Charles Clarke; a draft was tabled for Council to approve.

The Women in Mathematics

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Committee presented the details of two new small grant schemes. The first, a Grace Chisholm Young fellowship, will give a mathematician whose career is interrupted by family responsibilities access to the facilities of a mathematics department and a small research support grant. The second will contribute to supplementary childcare costs incurred by mathematicians attending conferences and meetings who cannot cover those costs from conference or other research funds. Council was pleased to hear that an Athena award (presented by the British Computing Society and the Royal Society) had been made to Oxford Brookes University, and in particular to Cathy Hobbs, a former Chair of the Women in Mathematics Committee, in recognition for the mentoring scheme which Cathy had set up.

Sarah Rees

PRESIDENCY 2005 - 2007

The President has proposed that Professor J.F. Toland, FRS, be nominated to serve as President of the London Mathematical Society from November 2005. Receiving the news with acclamation, Council has agreed that Professor Toland should be accorded the title President-Designate from the 2004 AGM and invited to attend Council and the Finance & General Purposes Committee from that date.

ANNUAL ELECTIONS TO LMS COUNCIL

The normal way in which nominations to Council are now made is via the Nominating Committee, but there is still provision for any member of the Society to make nominations directly.   Anyone who wishes to propose someone for a position as an Officer of the Society or as a member of Council is invited to inform E.G. Rees, who is currently chairing the Nominating Committee (E. Rees@ed.ac.uk) or one of the other members of the Committee (R.A. Bailey, K.A. Brown, C.A. Hobbs, D. Rand, D.M. Sloan, J.F. Toland), by **21 May 2004**.

Any direct nominations should be sent to the Executive Secretary (cooper@lms.ac.uk) to arrive before noon on 1 September 2004. Such nominations must bear the signatures of the Nominator and three Seconders and of the Nominee.

LONDON MATHEMATICAL SOCIETY
MIDLANDS REGIONAL MEETING

School of Mathematical Sciences, University of Nottingham, Wednesday 12 May 2004

Time	Event
2.00 – 2.30	**Arrival, poster display**
2.30 – 2.45	**LMS business meeting**
2.45 – 3.45	**Professor Eva Bayer-Fluckiger (Lausanne Polytechnic, Switzerland)** *Euclidean number fields and euclidean minima*
3.45 – 4.15	**Tea/coffee break**
4.15 – 5.15	**Dr Bart de Smit (University of Leiden, Netherlands)** *The elliptic curve in Escher's Print Gallery*
5.15 – 6.15	**Professor Jean-Louis Colliot-Thélène (CNRS and Université Paris-Sud, France)** *From linear algebraic groups to rationally connected varieties*

A conference dinner will be held after the meeting. There will be a poster session for postgraduate students and a £100 prize.

A workshop on *Quadratic forms, algebras with involution and algebraic K-theory* will run from the morning of Thursday 13 May until noon on Saturday 15 May. There will be about ten one-hour invited talks as well as some shorter talks by young researchers in the field.

For further details, contact the scientific organisers: Professor Detlev Hoffmann (email: Detlev.Hoffmann@nottingham.ac.uk, tel: 0115 8467142, fax: 0115 9514951) or Professor J.E. Cremona (email: John.Cremona@nottingham.ac.uk, tel: 0115 9514920, fax: 0115 9514951) both at the School of Mathematical Sciences, University of Nottingham, Nottingham NG7 2RD. See also the website www.maths.nott.ac.uk/personal/jec/qf2004.

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 on Wednesday 12 May. 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 ABEL PRIZE

The 2004 Abel Prize has been awarded to Sir Michael Atiyah, OM, FRS, Honorary Professor in the University of Edinburgh and formerly Master of Trinity College, Cambridge. He receives the prize jointly with his long-time collaborator Isadore Singer, Massachusetts Institute of Technology, USA. Sir Michael is a member and a former President of the London Mathematical Society (1974-76).

The Abel Prize was established in 2002 by the Norwegian Academy of Science and Letters for outstanding scientific work in the field of Mathematics, giving mathematics for the first time an international prize of the same scale and importance as the Nobel Prize. The Prize, worth about €750,000 to the winners, will be presented by King Harald of Norway at a ceremony in Oslo on 25 May.

The award to Atiyah and Singer was "for their discovery and proof of the index theorem, bringing together topology, geometry and analysis, and their outstanding role in building new bridges between mathematics and theoretical physics."

In the mid 1960s, Atiyah and Singer proved their index theorem for elliptic operators on manifolds. This powerful tool not only gave an explanation for a host of earlier results in geometry and topology, but also provided entirely new connections with other subjects such as number theory.

While exploiting their work, they discovered in the 1970s that related ideas were being used independently by theoretical physicists working on gauge theories. This greatly influenced their subsequent research. Seeking out the mathematical interpretation of many problems from physics, they showed that these problems responded to the latest techniques in pure mathematics. Equally, they introduced into mathematics viewpoints from quantum field theory which have radically changed the agenda in geometry and topology.

DAVID CRIGHTON MEDAL

The inaugural David Crighton Medal, awarded jointly by the London Mathematical Society and the Institute of Mathematics and its Applications, will be presented to Professor John Ball, FRS, on 23 June. Professor Ball will give a lecture entitled *Mathematics Worldwide*.

The presentation and lecture are intended for members of both the LMS and IMA, and will be attended also by invited guests from government, industry, education and kindred professional and learned associations.   The award will be preceded by the IMA Presidential Address *Applying Mathematics* by Professor T.J. Pedley, FRS. It will be held at the Royal Society, 6 Carlton House Terrace, London SW1Y 5AG, on Wednesday 23 June at 5.15 pm.

Entrance to the ceremony is free of charge but a ticket is required. A buffet reception for members of the LMS and IMA and their guests, will be available afterwards. Tickets will also be required for the buffet. To order tickets, allocated on a "first come first served" basis, contact Lisa Wright, Committee Clerk, The Institute of Mathematics and its Applications, Catherine Richards House, 16 Nelson Street, Southend-on- Sea, Essex SS1 1EF (tel: 01702 354020; fax: 01702 354111; email: post@ima.org.uk) no later than **Wednesday 16 June**.

4ECM
LMS Meeting & Reception

The London Mathematical Society will be holding a Meeting and Reception for its members during the Fourth European Congress of Mathematics (4ECM) at 6.00 pm on Wednesday 30 June. Members who wish to attend should apply for their free ticket to Susan Oakes, the Administrator at the Society (oakes@lms.ac.uk), no later than **Friday 11 June**. The Society hopes to entertain as many as possible of its members who are attending the European Congress.

HARDY FELLOW 2004
Professor Terence Tao

Professor Terence Tao, of the University of California Los Angeles, is visiting the UK as the Hardy Fellow from April through to June. His Fellowship is held at Edinburgh University, where his host is Professor Tony Carbery. During his stay, he will be visiting various institutions, as in the table below. There has been more demand for visits than can be accommodated: it is hoped that members of the Society and mathematicians throughout the country will find the opportunity to hear Professor Tao when he is speaking at a neighbouring University. Further details about each talk can be obtained from the local host.

Date	Venue	Host	Lecture
11 May	Dublin	R.M. Timoney (richardt@maths.tcd.ie)	Honeycombs and sums of Hermitian matrices
14 May	Edinburgh	Edinburgh Mathematical Society (tom@maths.ed.ac.uk)	Honeycombs and sums of Hermitian matrices
17 May	Bath	J.F. Toland (jft@maths.bath.ac.uk)	The global behaviour of non-linear Schrödinger equations
19 May	Warwick	P.M. Topping (topping@maths.warwick.ac.uk)	Honeycombs and sums of Hermitian matrices
21 May	Oxford	T.J. Lyons (tlyons@maths.ox.ac.uk)	The nonlinear Fourier transform
16 June	Cambridge	T. Körner (t.w.korner@dpmms.cam.ac.uk)	Low regularity solutions of the KdV equation
18 June	London	London Mathematical Society (oakes@lms.ac.uk)	The Kakeya problem and arithmetic combinatorics

Honeycombs and sums of Hermitian matrices In 1912 Weyl posed the following problem: given the eigenvalues of two $n \times n$ Hermitian matrices A and B, what are the possible sets of eigenvalues of A+B? This question has been studied extensively, and is linked with representation theory, symplectic geometry, algebraic geometry, and several other fields. After a long series of work on this problem, the final piece of the solution was put in place in 1999 (though there are now several independent proofs). We describe the original solution, which revolves around a geometric object called a 'honeycomb'.

The global behaviour of nonlinear Schrödinger equations We discuss some recent progress in understanding the family of PDE known as nonlinear Schrödinger equations, focusing in particular on their asymptotic behaviour at infinity. While there are still many open problems out there, notably the soliton resolution conjecture (in the non-integrable case) and understanding the nature of blowup, there has been much progress in combining both the Fourier-analytic analysis of the equation with the conserved quantities and monotone quantities of the equation, allowing us to

derive rigorous results concerning such phenomena as scattering, orbital stability, weak turbulence, blowup, and asymptotic stability.

The nonlinear Fourier transform The linear Fourier transform can be used to analyze functions which take values in a vector space. If, however, the function takes values in a non-abelian group, then one must instead use the non-linear Fourier transform (also known as the scattering transform), which is used in the theory of integrable PDE, the spectral theory of differential operators (or Jacobi matrices), the theory of orthogonal polynomials, of Gaussian processes, inverse scattering theory, Riemann-Hilbert problems, etc. In this talk we discuss this transform and its surprisingly strong analogy with the linear Fourier transform, and discuss some recent results.

Low regularity solutions of the KdV equation The Korteweg de Vries equation (KdV) models shallow waves in a canal, and has both fascinating algebraic structure (in particular, it is completely integrable) and a subtle analytic structure (requiring modern techniques in oscillatory integrals and exponential sums). In this talk we describe recent work in understanding the low regularity behaviour of the KdV equation, in particular in constructing global solutions for data which can be as rough as a Dirac delta mass (and even rougher!). Also we combine this theory with the theory of symplectic capacity to prove a 'symplectic non-squeezing' result for this equation.

The Kakeya problem and arithmetic combinatorics Define a Besicovitch set to be a subset of R^n which contains a unit line segment in every direction. The Kakeya conjecture asserts that such sets always have Hausdorff dimension n; this conjecture has been proven in two dimensions but one only has partial results in higher dimensions. This problem turns out to have important connections to harmonic analysis, PDE, and even algebraic geometry and the combinatorics of sum sets. We will survey these connections and describe some recent results.

LMS INVITED LECTURE SERIES

The Society's Invited Lectures series consists of meetings at which a single speaker gives a course of about ten expository lectures, examining some subject in depth, over a five day period (Monday to Friday) during a University vacation. The meetings are residential and open to all interested. It is intended that the texts of the lectures given in the series shall be published. In addition to full expenses, the lecturer is offered a fee of £1,250 for giving the course and a further fee of £1,500 on delivery of the text in a form suitable for publication.

Recent lecturers in the series have been P.F. Baum (1995), F.J. Almgren (1996), J. Alperin (1997), D. Zagier (1998), A. Mielke (1999), B. Dubrovin (2000), T. Goodwillie (2001), P. van Moerbeke (2002), M. Fukushima (2003).

The 2004 Invited Lectures Series will be given at the University of Southampton by M.W. Davis (Ohio State University) on *The Geometry and Topology of Coxeter Groups*.

For the 2005 meeting, proposals are now invited from any member who, in addition to suggesting a topic and lecturer, would be prepared to organize the meeting at the member's own institution or a suitable conference centre. Enquiries about this series should be directed to the Programme Secretary at the Society (grants@lms.ac.uk). Programme Committee expects to make a decision on Friday 18 June 2004.

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NATIONAL UNIVERSITY OF IRELAND, GALWAY

Founded in 1845, NUI Galway now has over 14,000 students and over 1,000 staff. The University has recently developed a Strategic Plan and associated Academic Plan and is engaged in a number of major academic and infrastructural developments.

Lectureship above the bar/below the bar in Mathematics and Lectureship below the bar in Mathematics

Applications are invited from suitably qualified persons for the above full-time permanent (two) positions. To be considered for the lectureship above the bar candidates must have a PhD (awarded, not pending), have an established international reputation with quality research in quality journals, have a number of years experience of lecturing and teaching at university undergraduate and graduate level and/or experience working as a professional mathematician. To be considered for the lectureship(s) below the bar, candidates must have a PhD (awarded, not pending), evidence of research and research potential with articles published or pending and experience of teaching/lecturing at University level and/or experience working as a professional mathematician.

The Department runs full degree programmes in both the Arts and Science faculties and is also the major contributor to the denominated degrees in Mathematical Science/Computer Science and in Financial Mathematics & Economics. It also runs service courses in the Science, Engineering and Commerce faculties. The successful candidates will be expected to have the ability to contribute to and lecture on the many aspects of these programmes. Excellent quality lecturing ability is required of all candidates who must be willing to undertake all levels. The Department also runs masters' courses in Mathematics and in Communications Systems and has a full PhD programme.

Applications are welcome from persons with research interests in any area of mathematics or statistics. The current research interests of the department are in Algebra, Analysis, Geometry/Topology, Statistics.

Further information on the Department may be obtained at www.maths.nuigalway.ie.

For informal discussion contact Professor Ted Hurley, Department of Mathematics, National University of Ireland, Galway (email: ted.hurley@nuigalway.ie; tel: +353 (0)91 750442; fax: +353 (0)91 750542).

Lecturer above the bar salary scale:	€54,258 x 4 = €71,793 p.a.
	€51,545 x 4 = €68,209 p.a. (pre 1995 entrants)
Lecturer below the bar salary scale:	€34,345 x 10 = €48,714 p.a.
	€32,632 x 10 = €46,279 p.a. (pre 1995 entrants)

Closing date for receipt of applications is at 5.00 pm on Friday 7 May 2004.

Application forms and further information may be obtained from the Human Resources website: www.nuigalway.ie/news.

Candidates should submit six copies of their application (i.e. covering letter, *curriculum vitae* and application form) with the names of at least three referees and not more than five to: Human Resources Department, National University of Ireland, Galway (tel: +353-91-512069; fax: +353-91-750523; email: personnel@nuigalway.ie).

National University of Ireland, Galway is an equal opportunities employer.

ROYAL SOCIETY ATHENA AWARDS

Dr Catherine Hobbs, currently a member of the LMS Women in Mathematics Committee, and a former member of Council, has been awarded the British Computer Society prize and Royal Society Athena Award, on behalf of Oxford Brookes University.

Oxford Brookes received the Award for its use of IT in a mentoring scheme which matched European women in mathematics, from undergraduate through to junior academic staff level, with more experienced mathematicians. The scheme made use of web technology to connect geographically isolated people, providing mentees with the opportunity to communicate with role-models and to get impartial advice on careers, balancing families and careers, and gender issues in the workplace.

The Royal Society Athena Awards recognise and publicise the good practice that is being developed in higher education institutes by SET departments and groups of women who are working in support of Athena's aims: 'The advancement of women in SET in higher education and research and a significant increase in the number of women recruited to the top posts'. The Awards, open to all UK higher education institutions, are intended to encourage, raise the profile of, and disseminate a range of creative approaches and good practice from which the HE sector as a whole will benefit.

FRANCO-BRITISH PRIZE 2004

Nominations are invited for the 2004 Franco-British Prize. This prize is intended to provide a young British research worker of high potential with the opportunity to collaborate with French researchers and learn about science policy and the organisation of science in France. Recipients of the prize are expected to visit France for approximately one month to give seminars on their research to colleagues and to take the opportunity to compare French and British training systems, and the prize carries a cash award of €5340 to cover the expenses of this trip. Amongst the previous prize winners have been R.L. Taylor in 1992 and B. Totaro in 2000. For further details visit www.royalsoc.ac.uk/FBP or contact Ms Froniga Lambert at froniga.lambert@royalsoc.ac.uk. Nominations should be sent to Ms Lambert by **28 May 2004**.

LMS DURHAM RESEARCH SYMPOSIA

The LMS Research Meetings Committee is responsible for the planning of the LMS Durham Symposia, which have been running successfully each July/August since 1974, with over 75 symposia to date, in a wide range of mathematical disciplines. In 2004 there will be three Durham Symposia, all supported by EPSRC.
- 5 – 15 July *Mathematical genetics* (organisers: R. Griffiths*, G. McVean)
- 19 – 30 July *L-Functions and Galois representations* (organisers: D. Burns*, K. Buzzard, J. Nekovár)
- 2 – 12 August *Topological solitons and their applications* (organisers: L. Brizhik, R.S. Ward, W.J. Zakrzewski*).

Further information may be obtained from the organisers marked * at the following email addresses: griff@stats.ox.ac.uk, david.burns@kcl.ac.uk, maths.office@durham.ac.uk. The most recent symposia have been:

2003
- *Geometry and cohomology in group theory* (M. Bridson, P.H. Kropholler, I. Leary)
- *New developments and applications in rapid fluid flows* (J. Gajjar, P. Hall, F. Smith)
- *Markov chains – Algorithms, applications and theory* (L. Goldberg, W. Kendall, A. Stuart)

2002
- *Representations of finite groups and related algebras* (K. Erdmann, J.C. Rickard, G.R. Robinson)

- *Computational methods for wave propagation in direct scattering* (M. Ainsworth, P.J. Davies, D.B. Duncan, P.A. Martin, B.P. Rynne)
- *Astrophysical fluid mechanics* (D.W. Hughes, C.A. Jones, A.M. Soward, N.O. Weiss).

Detailed proposals for symposia are made at least two years ahead. For each symposium an application is made to EPSRC for a substantial research grant, to cover the subsistence costs of all invited participants, and some travel. Considerable assistance is available in preparing the scientific and financial case for the proposals, and in the running of the symposium itself. More information about Durham Symposia is available on the LMS website (www.lms.ac.uk/activities/research_meet_com/) or the Durham website (www.maths.dur.ac.uk/events/Meetings/LMS/). This latter website contains information about all previous and forthcoming symposia including, in many cases, a list of participants, abstracts of talks, and a symposium photograph.

The LMS Research Meetings Committee welcomes ideas for symposia for 2006 and later from potential organisers and others, who should contact the Chairman of the Committee, Professor A.J. Scholl (a.j.scholl@dpmms.cam.ac.uk). Proposals for symposia to take place in 2006 should be made as soon as possible.

VISIT OF PROFESSOR A. BENDIKOV

Professor Sasha Bendikov (Cornell University) is visiting the UK for two weeks from 24 May. This visit is supported by an LMS Scheme 2 grant. He will give lectures at Nottingham Trent University, Warwick University and Imperial College London on the topic of his recent joint work with L. Saloffe-Coste concerning path properties of Brownian motion on infinite dimensional locally compact groups. For further details, contact David Applebaum (david.applebaum@ntu.ac.uk).

VISIT OF PROFESSOR N. JOHNSON

Professor Norman Johnson (University of Iowa) will visit Dr Vikram Jha at the Glasgow Caledonian University from 10-20 May. He will collaborate with Dr Jha and Dr Alan Prince, of Heriot-Watt University, on translation planes and related areas of finite geometry. The visit is partially funded by an LMS Scheme 2 grant.

Professor Johnson will give a series of three talks: at Caledonian University, at Heriot-Watt University, and at Glasgow University. His talks will consider, in particular, various aspects of homology groups leading to the classification of various types of translation planes and flocks of quadratic cones. For full details concerning Professor Johnson's talk schedule, visit the website: www.gcal.ac.uk/cms/research/Seminar_Series/index.html.

VISIT OF PROFESSOR E. SCHÖLL

Professor Eckehard Schöll (Director of the Institute of Theoretical Physics, Technical University of Berlin) will visit the UK during May and June. He will give seminars at Nottingham University, University of Exeter, University of Bristol and Loughborough University. Professor Schöll is an expert in the physics of semiconductors and control of irregular oscillations. His visit is partly supported by an LMS Scheme 2 grant. For further information contact Natalia Janson at Loughborough University (n.b.janson@lboro. ac.uk).

VISIT OF PROFESSOR L. OSTROVSKY

Professor Lev Ostrovsky (Zel Technologies/University of Colorado, USA) will visit Professor Roger Grimshaw and Dr Karima Khusnutdinova (Loughborough University) in May 2004. He will give talks at Loughborough University on *Evolution equations for strongly nonlinear internal waves*, at University of Hull on *Non-classical non-linear acoustics* and at University College London on *Strongly nonlinear internal solitons in the ocean*. Professor Ostrovsky is one of the leading experts in geophysical fluid dynamics, nonlinear acoustics and nonlinear wave theory in general. His visit is supported by an LMS Scheme 2 grant. For further information contact Dr Karima Khusnutdinova (K.Khusnutdinova@lboro.ac.uk).

VISIT OF PROFESSOR Y. TUROVSKII

Professor Yuri Turovskii (Institute of Mathematics and Mechanics, Baku, Azerbaijan) will visit the Department of Computing, Communications Technology and Mathematics at London Metropolitan University during May. He will give lectures at London Metropolitan University, Newcastle University and Leeds University on some of his recent work in the invariant subspace theory and Banach algebras. The visit is supported by an LMS Scheme 5 grant. For further information contact Professor E. Kissin (e.kissin@londonmet.ac.uk).

ONE DAY FUNCTION THEORY MEETING

The annual One Day Function Theory Meeting will take place on Monday 20 September. The meeting will be held in the Hardy Room at De Morgan House, Russell Square, London WC1, with coffee at 10.30, followed by about five talks starting from 11.00, with breaks for lunch and tea.

This year's meeting also gives an opportunity to celebrate the many achievements and contributions of Professor Milne Anderson, who retires this year from University College London. Speakers will include Aimo Hinkkanen (Illinois), Vladimir Markovic (Warwick), Lasse Rempe (Warwick), but further volunteers to speak are strongly encouraged. In addition, it is hoped that there will be a dinner following the meeting, in honour of Milne Anderson. For further information, visit the website www.maths.nott.ac.uk/personal/jkl/oneday.html or contact the organiser Professor J.K. Langley, School of Mathematical Sciences, University of Nottingham, Nottingham NG7 2RD (email: jkl@maths.nott.ac.uk; tel: 0115 9514964; fax: 0115 9514951).

The meeting is supported by the London Mathematical Society and the Lighthill Institute of Mathematical Sciences.

INSTITUTE OF COSMOLOGY & GRAVITATION

The following lecturers in the field of General Relativity and Cosmology are visiting the Institute of Cosmology & Gravitation, University of Portsmouth:

- Bouhmadi-Lopez, M. (Spain) June 2003 - June 2005
- Seahra, S. (Canada) September 2003 - September 2005
- Koyama, K. (Japan) April 2004 - April 2005

For further information contact C. Duncan (chris.duncan@port.ac.uk), Research Administrator, Institute of Cosmology & Gravitation, University of Portsmouth.

"My big mistake was going into cosmology just for the money."

© Sidney Harris

STATISTICAL MECHANICS CONFERENCE

A two-day conference in honour of the 75th birthday of Professor Oliver Penrose FRS will be held on 25 - 26 June, at the International Centre for Mathematical Sciences in Edinburgh. The meeting is being supported by the London Mathematical Society, ICIAM 99 Fund, Edinburgh Mathematical Society and Royal Society of Edinburgh. The speakers are expected to include: John Ball (Oxford), Jean Bricmont (Louvain), Peter Fratzl (Berlin), Joel Lebowitz (Rutgers), Mathew Penrose (Bath), Herbert Spohn (Munich), Bálint Tóth (Budapest). Further details can be found at www.ma.hw.ac.uk/icms/meetings/2004/penrose/index.html or obtained from Mrs Tracey Dart at ICMS (tracey@maths. ed.ac.uk).

SECANTS

SECANTS (South of England Computational and Algorithmic Number Theory Seminars) will hold its 24th meeting on Saturday 22 May in Bath. The speakers will be Stephen Galbraith and James McKee (Royal Holloway, University of London) and Fré Vercauteren (Bristol). SECANTS is funded by an LMS Scheme 3 grant. For more details of the programme and venue, as well as general information about SECANTS, and how to be put on the email mailing list, see www.maths. nott.ac.uk/personal/jec/secants/secants24. html.

DISCRETE GROUPS AND HYPERBOLIC MANIFOLDS

A conference on Discrete Groups and Hyperbolic Manifolds will be held at the University of Aberdeen from 5 – 7 August. The aim of the conference is to bring together experts in the fields of discrete groups and hyperbolic manifolds with the aim of describing current progress. The conference will consist of no more than 15 invited one-hour talks, which will commence on the morning of 5 August. The invited speakers will be encouraged to give talks that combine survey and state of the art results so as to be as informative as possible, both to the novice and experts.
Invited speakers:
• Mikhail Belolipetsky (Novosibirsk/Jerusalem)
• Brian Bowditch (Southampton)
• Martin Bridson (Imperial College)
• Brent Everitt (York)
• Grzegorz Gromadzki (Gdansk)
• Jim Howie (Heriot-Watt)
• Don James (Penn State)
• Alex Lubotzky (Jerusalem)
• Gaven Martin (Auckland)
• Alan Reid (Texas)
• Gerhard Rosenberger (Dortmund)
• Caroline Series (Warwick)
• David Singerman (Southampton)
• Peter Waterman (Northern Illinois)
The conference is in part organized in honour of the forthcoming retirement of Dr Colin Maclachlan (University of Aberdeen). This will be recognized at a conference banquet. The Scientific Organizing Committee members are: E. Bujalance (Madrid), M. Conder (Auckland), F. Gehring (Michigan), W. Harvey (Kings College, London), A. Reid (Texas). The conference is supported by the Edinburgh Mathematical Society, the Glasgow Mathematical Journal Trust and the London Mathematical Society. There is a limited amount of support for postgraduate students who are studying at a UK university. For further information and details about applying for this support visit the website (www.ma.utexas.edu/ users/areid/home.html).

NBFAS

A meeting of the North British Functional Analysis Seminar (NBFAS) will be held in the David Hume Tower at Edinburgh University from 2.30 pm Monday 31 May to 12 noon Tuesday 1 June. Talks will be by Professor Bachir Bekka of the University of Metz, France, who will be speaking on *Kazhdan's Property (T) for*

groups and for operator algebras and Professor Dan Timotin of the University of Bucharest, Romania, who will be speaking on *Interpolation of functions and operator theory*. The meeting is supported financially by the LMS and all are welcome to attend. For further information, contact Dr Michael Dritschel, Newcastle University (M.A.Dritschel@ncl.ac.uk).

GEOMETRY AND VISUALIZATION SUMMER SCHOOL

This Summer School will take place from Monday 21 to Friday 25 June at Maubeuge University Centre, Pôle Universitaire, France. It will provide a concise introduction to the mathematical foundations of visualization techniques as well as real-world applications of visualization techniques in different scientific areas. The theoretical part of the Summer School focuses on fundamental topics from differential to discrete geometry, which play an essential role in the study of polyhedral shapes. Modern visualization algorithms will be introduced and complemented with hands-on experiments in the practical part.

Lectures and practical exercises are intended for students majoring in computer science and mathematics as well as other scientific subjects such as physics, chemistry, biology and medicine with Master's degree level knowledge in differential geometry, and for professionals using visualization technologies. Numerous applications will provide an informative overview of current visualization techniques.

The lecturers are :
• A. El Kacimi (Université de Valenciennes et du Hainaut Cambrésis)
• H.C. Hege (Zuse Institut Berlin)
• K. Polthier (Zuse Institut Berlin/TU-Berlin)
For further information email v.vaillant.adus@free.fr or telephone +33 (0)3 27 53 01 35. Email aelkacim@univ-valenciennes.fr for the course content. Registration deadline is **Friday 14 May**.

SCALAR MIXING IN FLUID FLOWS AND MAPPINGS MEETING

The third LMS Meeting in this series will take place on 9 July at the University of Exeter. Invited speakers include Peter Ashwin (Exeter), Andrew Bassom (Exeter), Matt Finn (Nottingham), Andrew Stuart (Warwick) and Christos Vassilicos (Imperial). Any research students or post-doctoral researchers interested in speaking or giving a poster should contact Andrew Gilbert (A.D.Gilbert@ex.ac.uk), from whom more information about the meeting may be obtained.

INTERNATIONAL MATHEMATICS COMPETITION FOR UNIVERSITY STUDENTS

The 11th International Mathematics Competition for University Students is being co-organized by University College London and the Saints Cyril and Methodius University, Skopje, Macedonia. It will extend over six days and take place in Skopje.

Every participating university is invited to send several students and one teacher. Individual students are welcome. The competition is planned for students completing their first, second, third or fourth year of university education and will consist of two sessions of five hours each. Problems will be from the fields of Algebra, Analysis (Real and Complex) and Combinatorics. The working language will be English.

23 July   Arrival and Registration
24 July   Opening Ceremony, Additional Registration, Meeting of the Jury
25 July   First Exam Day
26 July   Second Exam Day
27 July   Meeting of the Jury
28 July   Closing Ceremony, Final Dinner
29 July   Departure

Groups Although this is an individual event, the Universities traditionally divide their participants into groups of four each. The number of students in the teams is, however, not fixed. The professor who accompanies the students is expected to be a member of the Jury. Over the previous ten competitions we have had participants from 94 universities in 31 countries.

Selection of the problems The problems will be chosen at the Meeting of the Jury on 24 July from those received in advance by the President of the Jury, Professor John Jayne. The problems proposed should be precisely formulated and accompanied by a detailed solution. The problems should be in fields of Algebra, Analysis (Real and Complex) and Combinatorics. The problems given at the last nine Competitions can give a general idea of the level expected (see the IMC web site www.imc-math.org). Additional topics may be also included.

Evaluation The students' work will be evaluated by Team Leaders and other professors and assistant professors using criteria provided by the Jury.

Necessary information Participants are invited to confirm their intention to participate, either by on-line registration or by email, by the end of May 2004, providing the following information: university; city; country; leader of the team (name, e-mail address); students (number); mailing address; email address; fax.

Visas The participants from some countries will need a visa to enter Macedonia. Please contact your travel agent or the Macedonian Consulate in your country for details. If necessary, the organizers will post formal invitations for participation in the Competition.

Local expenses The living expenses (room, board and local transportation, including spending money) and other costs have not yet been finalized. These will be sent out shortly in the Second Announcement.

Please send all confirmations of participation and arrival details to John Jayne at the email address below. If you would like a copy of the competition poster, please send your request with postal address to The IMC President, Professor John E. Jayne, Department of Mathematics, University College London, Gower Street, London WC1E 6BT (tel: +44-20-7679 7322; fax: +44-20-7419 2812; email: j.jayne@imc-math.org).

UMTC

The thirtieth Undergraduate Mathematics Teaching Conference (UMTC) will be held from 1 – 3 September at the University of Birmingham. UMTC is a working conference which provides an annual opportunity for lecturers to meet colleagues from different universities to exchange ideas, experiences and anecdotes about the teaching of mathematics at undergraduate level.

The conference includes plenary sessions - the invited speakers this year are Joe Kyle, University of Birmingham, and Neil Challis, Sheffield Hallam University - and presentations by delegates. However (for those unfamiliar with UMTC) the main focus of the conference is the small working groups, which aim to produce a report on a brief concerning a current issue relating to learning and teaching in undergraduate mathematics for publication in the conference proceedings.

Briefs for UMTC 2004 are as follows:
1. Undergraduate project practice - organisation and assessment
2. Teaching mathematics in an interactive classroom, to be led by Michael McCabe
3. Teaching statistics to non-specialists: principles, practice and politics, to be led by Neville Hunt

4. Action research into effective student support in mathematics
5. Subject-based CPD - how to make it successful in mathematics
6. Customisation of student profile project material for mathematics, to be led by consultants from Employability Works
7. Goal orientation in mathematics education of computer scientists and engineers, to be led by Alexander Khait.

There is an exciting and varied collection of briefs for deliberation at this year's conference; brief 1 links in with the LTSN MSOR Network Project 'Use of Projects in Mathematics'. Michael McCabe, University of Portsmouth, will be demonstrating a Mobile interactive classroom Kit (MICK); delegates will have an opportunity to try out the technology as part of brief 2. Brief 6 aims to customise, for mathematics, the generic employability skills template, designed as part of the LTSN Generic Centre 'Profiles of Student Employability Project'. Alexander Khait from Jerusalem College of Engineering makes his first visit to the conference to lead brief 7. Full briefs are available on the website www.umtc.ac.uk/umtc2004.

Fees for UMTC 2004 are £275, including two nights accommodation, or £200 excluding accommodation, with a reduction of £25 if you book before **18 July**. Electronic registration forms and further conference details are available on the website. If you have any queries or suggestions for this year's conference email chair@umtc.ac.uk.

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LONDON MATHEMATICAL SOCIETY
NORTHERN REGIONAL MEETING

University of Newcastle, Friday 2 July 2004

Professor M. Gromov (IHES/Courant Institute)
Professor R. Grigorchuk (Steklov Institute/Texas A&M)

The London Mathematical Society Northern Regional Meeting will be held on Friday 2 July in the School of Mathematics and Statistics, Newcastle University. The speakers are R.I. Grigorchuk and M. Gromov. There will be a conference dinner following the meeting.

The meeting will be preceded by a workshop on *Geometric Group Theory*, with emphasis on formal languages, logic and equations, from Tuesday 29 June to Thursday 1 July. There is a £15 registration fee for the workshop. Visit the website www.mas.ncl.ac.uk/~najd2/lmsnorth/ to register and for further information, or contact the conference organisers (email: lms.north @ncl.ac.uk or fax: +44-191 222 8020).

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 on 2 July. 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).
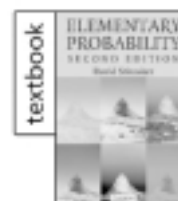
BIRKBECK COLLEGE

LECTURESHIP IN MATHEMATICS OR STATISTICS

The School of Economics, Mathematics and Statistics of Birkbeck College is seeking candidates for a Lectureship in Mathematics or Statistics, to start October 2004. This is a permanent position, possibly subject to a probationary period. Applicants should have a PhD, or be close to completion of one, and will be expected to have a strong commitment to research, as well as an ability to teach at all levels. Candidates should be authorized to work in the EU.

The successful candidate will become part of the Mathematics and Statistics group of the School. Current research is mainly in applications of Probability and Statistics, with a strong interdisciplinary orientation, but will be expanding into the general area of Computational Mathematics. Although preference may be given to applicants working in one of these areas, strong candidates from other fields are also encouraged to apply.

Candidates are requested to send an application, including a curriculum vitae and a brief outline of their research and research plans for the near future, to: B. Downton, Birkbeck College, School of Economics, Mathematics and Statistics, Malet Street, London WC1E 7HX.
They should also ask three referees to write to us directly.

Salary range: Lecturer A/B scale for Academic Staff (£22,191 to £25,451 respectively £26,270 to 33,679 pa), subject to experience, plus £2,284 London Allowance.

Closing date: 28 May 2004.

For further particulars, and a job description, please see www.ems.bbk.ac.uk/ms/job.htm

Informal inquiries to: Professor R. Brummelhuis (r.brummelhuis@bbk.ac.uk) or Dr S. Evans (s.evans@statistics.bbk.ac.uk).

FOURTH EUROPEAN CONGRESS OF MATHEMATICS

The Fourth European Congress of Mathematics (4ECM) will take place in Stockholm, Sweden, 27 June to 2 July. It will be the major international mathematical event of the year 2004. The theme of the Congress is *Mathematics in Science and Technology*. By now the programme of the Congress is more or less settled and can be found at: www.math.kth.se/4ecm/program/scientific.programme.html.

There will be 7 Plenary Lectures, 33 Invited Lectures, 12 European Network Lectures and Science Lectures. Two of the planned 6 Science Lectures have not yet finalised. It has been rather surprising for us to discover how difficult it is to find speakers among physicists. In particular, it is a great disappointment that Gerard 't Hooft, who first agreed to give a talk at the 4ECM has withdrawn.

There will be ten EMS Prizes of €5,000 each to young mathematicians who have made a particular contribution to the progress of mathematics. The closing date for nominations of the EMS Prizes was 1 February and the nominations will be considered by the members of the Prize Committee chaired by N.N. Uraltseva (St Petersburg). The list of the prize winners will be announced at the opening ceremony of the 4ECM on 28 June.

I remember that about a year or so ago there was a certain scepticism regarding the openness of the procedure of nominations of the candidates for the EMS prizes. It was agreed then that nominations may be made by anyone, including members of the Prize Committee or by the candidates themselves. Some people thought that such a procedure would lead to nominations of too many non-serious candidates and thus create difficulties for the work of the Prize Committee.

Last October there were only about ten nominations and there was some speculation about whether the prizes had been publicised enough. However, by 1 February there were 54 young mathematicians who had been nominated for the prizes. Almost all of them are serious mathematicians who have made substantial contributions in their areas of mathematics and most of them are definitely worthy of a prize.

I wish the members of the Prize Committee all the best in their task which though hard will I am sure prove to be very rewarding.

On reflection, Professor N. Uraltseva and I think that the open nominating procedure has been extremely successful and I strongly recommend following such a procedure as a standard rule for future EMS Congresses.

We are about to consider the first round for contributed papers (posters) for which the first deadline was 15 February.

So far there are 232 applications for poster sessions. It seems very likely that we will ultimately match the corresponding number of applications accepted at the 3ECM in Barcelona (about 300 posters). In view of the fact that many of the participants of the 4ECM will need a Swedish visa, we have created a special link 'Letter of Invitation' on our home-page, www.math.kth.se/4ecm. Here one can find a simple form which has to be filled in order to obtain an invitation. It is important to emphasize that the Letter of Invitation is in no way an acceptance of financial responsibility by the organisers for the participant. We look at new applications every day and Letters of Invitations are sent to the applicants within a couple of days after their applications have been received.
Welcome to the 4ECM in Stockholm
Ari Laptev
Chairman
4ECM Organizing Committee

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BOOK REVIEW

Sherlock Holmes in Babylon, and other tales of mathematical history, Marlow Anderson, Victor Katz, and Robin Wilson (eds), The Mathematical Association of America, 420 pp. ISBN 0-88385-546-1, $49.95.

The Mathematical Association of America (MAA), which has always had an interest in the history of mathematics, has had the happy idea of publishing an anthology not of primary sources, but of secondary sources taken from the pages of the MAA's journals. This introduces the reader not only to many fascinating mathematical topics with interesting histories, but to a considerable number of historians of mathematics as well. This is particularly welcome in the history of mathematics, a subject that is more subjective than mathematics, and will particularly help students to think their ways through a wealth of material.

The book is in four sections. The first of these is devoted to ancient mathematics: Babylon of course, but also some Greek, Chinese and pre-conquest American. It opens with a most instructive comparison between two approaches to a single Babylonian tablet, the famous Plimpton 322, discussed in a mathematical way by Creighton Buck in 1980 and by Eleanor Robson in a mathematical and archaeological way in 2002. A similarly instructive comparison follows soon, between A.W. Richeson in 1940 and Michael Deakin in 1994 on Hypatia, where arguably the balance is reversed, the later author being more concerned to set out the mathematics. At times no comparison can be attempted, because recent advances in the history of mathematics make intelligible what was simply not understood before. A case in point is Marcia Ascher's splendid elucidation of the Inca quipu.

The second section, Medieval and Renaissance Mathematics, carries sensitive and instructive comparisons of Indian and often later Western ideas associated with the calculus, the use of power series methods, and the trigonometric functions. Here, however, the inevitable limitations of the book are apparent, even though it is good to see what is here being made more available. There is nothing on medieval mechanics, Oresme, Regiomontanus, nothing on Arab and Islamic geometry and algebra.

The Seventeenth Century (section 3) carries articles on Descartes, Gregory and above all Newton, but only two articles on Leibniz, one in a minor vein at that. The articles are notable for the care with which they address the reader, not only the professional mathematician but the student as well. They are also characterised by their equal attention to the mathematics and the history. The reader learns about the mathematics by seeing how Newton or Descartes went about it when it was a matter of original research. Sometimes, as with Descartes' ideas about drawing curves, we also see the quirky details that modern expositions leave out. I think they are particularly instructive: all original work is quirky.

The final section, the Eighteenth Century, explores the question of the influence of Newton's calculus on Continental European mathematicians (for example, via Maclaurin, well discussed by Judith Grabiner). It then hands the Century over to Euler. Several writers between them give as good an impression of the scope of Euler's work as can reasonably be expected: there are articles on Euler's view of the calculus, on the fundamental theorem of algebra, and quadratic reciprocity.

This is a book that anyone interested in the history of mathematics will enjoy, and students on courses in the history of mathematics should certainly read it. But it raises certain questions that, perhaps, students with access to a good library could explore. The editors have rightly judged it unwise to reprint bad articles, therefore the progress made by historians of mathematics is not as clear as it would otherwise have been. It was, of course, impossible to reprint nonexistent articles, and so some topics lay out of reach.

Even so, it is likely that any survey of the field would show that there are fashions in history of mathematics, and it is instructive to wonder why. There is nothing here on Euclid, Apollonius, and Archimedes apart from a survey article by Max Dehn, and though it is not true that no work on them has been done in recent years, it is true that there have been few new sources with which to revisit such a well trodden area. Indian mathematics remains insufficiently studied, largely because of the difficulty of the sources, whereas a number of scholars

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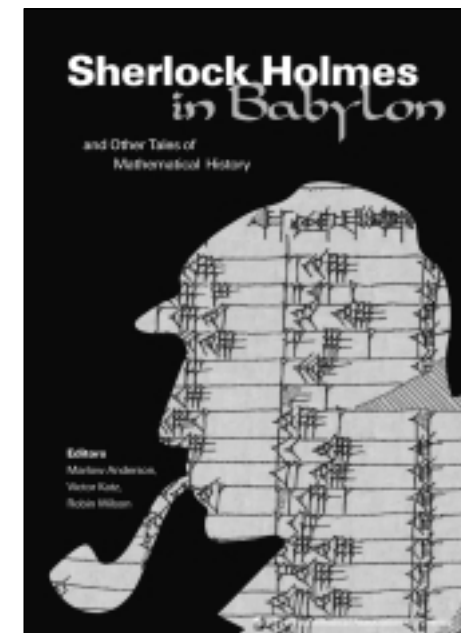
have been good at exploring pre-Columbian mathematics. European medieval mathematics remains the province of specialists, and I have the impression that algebra in the century of Cardano has not been looked at afresh for some time. One way for readers of this book to look at the large gaps here is to ask themselves if they have a contribution to make.

The editors are to be congratulated on producing such a useful book. They might have promoted themselves a little more, and written longer introductions to each section setting the scene more fully, and taken care of one or two pictures that fared poorly (for example, in Lützen's article on Euler), but they have produced a work that should belong in that important part of any library: the well thumbed volumes.

Jeremy Gray
Open University

MATHEMATICS IN MEDICINE AND BIOLOGY
LMS Scheme 3

The first meeting was held on 18 February at Loughborough University. The theme of the meeting being *Modelling of Neural Systems*. The meeting was lucky enough to be blessed with four very eminent UK scientists: Professor Karl Friston (University College London), Professor Jim Horne (Loughborough), Professor John Taylor (Kings College London) and Professor David Willshaw (Edinburgh). We had four very different talks from these scientists. First, Professor Friston described how hierarchical dynamic models could be used to model learning and inference in the brain. Karl's talk set up a generalized theoretical framework of which existing techniques such as Principal and Independent Component Analysis are examples.

Next, Professor Jim Horne gave us a

Jim Horne, John Taylor, David Willshaw, Karl Friston

grand overview of research in the general area of sleep, before hinting at the end that perhaps mathematics could be used to understand the purpose of sleep and analyse data collected during sleep. At this point a coffee break seemed necessary and the audience withdrew outside.

Following the tea break, it was the turn of Professor John Taylor to elucidate upon the use of control theory to link attention and consciousness, in particular his theory of Corollary Discharge of Attention Movement (CODAM). Finally, Professor David Willshaw described how to model the developing nervous system using computational neuroscience. This work was started several years ago but it was only recently that experimental findings began to agree with the predictions that David had made in the 1970s.

The speakers' dinner took place at the Thai House Restaurant in Loughborough, and was well supported by members of the department with 15 people present. The meeting itself was also well supported with approximately 30 attendees including seven PhD students. The next meeting in the series is currently planned for Nottingham.
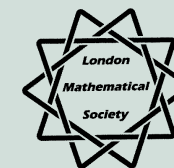
Further information about the scheme may be found at http://majrt-mac.lboro. ac.uk/~majrt/LMSScheme3.html.

John Terry
Loughborough University

EPSRC Algebraic Groups
LMS/EPSRC Short Course

University of Birmingham, 13-17 September 2004
Organiser: G. Röhrle

Algebraic groups are at the very heart of new and central developments in modern algebra such as quantum groups, p-adic groups, Hecke algebras and geometric representation theory. The aim of this instructional course is to provide an introduction for non-specialists to this wide and classical field. More precisely, the goal is to provide a general understanding of the fundamental methods and results in algebraic group theory, in particular, the structure and representation theories of reductive algebraic groups, their connection with finite groups of Lie type, and Lie algebras.

There will be three courses of lectures:

• **Introduction to algebraic groups and Lie algebras**	Professor S. Donkin (London)
• **Root systems, coroots and Weyl groups**	Dr R. Lawther (Cambridge)
• **Basics of representation theory of algebraic groups**	Professor A. Premet (Manchester)

There will also be three additional special lectures on some more recent aspects of modern development in the theory:

• **Aspects of modular representation theory**	Professor J.C. Jantzen (Aarhus)
• **Weyl groups, affine Weyl groups and Hecke algebras**	Professor. G. Malle (Kassel)
• **Subgroup structure of reductive algebraic groups**	Professor M. Liebeck (London)

There will be tutorial support for the three courses. Further details of the programme and a schedule of the talks, as well as information for suggested preparatory reading material, may be found on the web: http://web.mat.bham.ac.uk/G.E.Roehrle/course04.html.

The registration fee is £100. The accommodation costs for all UK-based research students are covered by EPSRC. Participants must pay their own travel costs. EPSRC-supported students can expect that their registration fees and travel costs will be met by their department from its EPSRC Doctoral Training Account.

Application forms may be obtained from Isabelle Robinson, the Administrative Officer, at the Society (email: robinson@lms.ac.uk, fax: 020 7323 3655) or from the LMS website (www.lms.ac.uk/activities/research_meet_com/short_course/19_form.html).

Numbers will be limited and those interested are advised to make an early application. The closing date for applications is **Monday 12 July 2004**. Completed forms should be returned to the Administrative Officer by email, fax or post (details above).

LONDON MATHEMATICAL SOCIETY

POPULAR LECTURES 2004

**Manchester University – Thursday 6 May
Institute of Education, London University – Friday 11 June**

Professor Ken Binmore

Big Money Mathematics

'Can mathematics raise billions of pounds? Find out what happens when the mathematics of game theory is applied to economics.'

$$\sqrt{2\pi n}\left(\frac{n}{e}\right)^n = \pounds$$

Professor Helen Byrne

A Spoonful of Maths Helps the Medicine Go Down, …

'What role should mathematics play in the field of medicine? Could it be the new tonic that doctors need to cure our ills?'

MANCHESTER (Roscoe Building, Brunswick Street) Commences at 6.30 pm, refreshments at 7.30 pm, ends at 9.00 pm. Admission is free. Enquiries to Professor Nigel Ray, Department of Mathematics, University of Manchester, Oxford Road, Manchester M13 9PL (tel: 0161 275 5800, e-mail: nige@ma.man.ac.uk).

LONDON Commences at 7.00 pm, refreshments at 8.00 pm, ends at 9.30 pm. Admission is free, with ticket. Apply by 7 June to Miss L. Taylor, London Mathematical Society, De Morgan House, 57-58 Russell Square, London WC1B 4HS (e-mail: taylor@lms.ac.uk). A stamped addressed envelope would be appreciated.

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/calender.html).

MAY 2004
6 LMS Popular Lectures, Manchester University (326)
12 LMS Midlands Regional Meeting, Nottingham University (326)
12 Reading One-Day Combinatorics Colloquium, Reading University (325)
13-15 Quadratic Forms, Algebras with Involution and Algebraic K-Theory Workshop, Nottingham University (325)
14 PANDA Meeting, Leeds University (325)
14-15 Groups in Galway Conference, National University of Ireland, Galway (325)
19 Widening Participation in MSOR Workshop, Aston University (325)
21-23 Conference on the Life and Work of Henri Poincaré, Open University (325)
22 SECANTS, Bath (326)
24-26 University of Wales Mathematics Colloquium, Gregynog (325)
28-31 Meeting in Honour of Professor Wong, City University, Hong Kong (319)
31-1 Jun NBFAS, Edinburgh University (326)

JUNE 2004
5 Alan Mathison Turing 2004 Meeting, Manchester University (324)
10-17 Representation Theory and Complex Analysis CIME Summer Course, Venice, Italy (324)
11 LMS Popular Lectures, London (326)
16-18 Croatian Congress of Mathematics, Split University, Croatia (321)
18 Hardy Lecture, LMS Meeting, London
19-24 Symmetries and Integrability of Difference Equations EURESCO

Conference, Helsinki, Finland (323)
21-25 Geometry and Visualization Summer School, France (326)
21-25 Mathematics for Industry European Conference, The Netherlands (321)
21-29 Nonlinear & Optimal Control Theory CIME Summer Course, Italy (324)
21-2 Jul SMS-NATO Advanced Summer Institute Summer School on Morse Theoretic Methods in Non-linear Analysis and Symplectic Topology, Canada (322)
23 Mathematics Worldwide, J.M. Ball 'David Crighton Lecture', Royal Society, London (326)
25-26 Statistical Mechanics Conference, ICMS, Edinburgh (326)
27-2 Jul 4ECM, Stockholm, Sweden (326)
28-30 Analysing Conflict and its Resolution, IMA Conference, Oxford (319)
28–2 Jul Random Matrix Theory and Arithmetic Aspects of Quantum Chaos Conference, INI, Cambridge (323)
29–1 Jul Geometric Group Theory Workshop, Newcastle University (326)
30–2 Jul Mathematical Knowledge Conference, Cambridge (323)

JULY 2004
2 LMS Northern Regional Meeting, Newcastle University (326)
4-11 ICME10, Copenhagen, Denmark (308)
4-14 Moonshine Conjectures and Vertex Algebras Workshop, Edinburgh (324)
5-9 Geometry and Topology of Coxeter Groups, M.W. Davis, LMS Invited Lectures, Southampton University (324)
9 Scalar Mixing in Fluid Flows and Mappings Meeting, Exeter University (326)
11-17 Real Analysis and Measure Theory Meeting, Italy (323)
12-16 Matrix Ensembles and L-functions Workshop, INI, Cambridge (323)
12-16 IWOTA, Newcastle University (325)
23-29 International Mathematics Competition for University Students, Skopje, Macedonia (326)

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GODFREY HAROLD HARDY
DE MORGAN MEDALLIST
1929

Professor Hardy received the De Morgan Medal on 14 November 1929. At the time of the award, Hardy had published about 300 papers on the topics in analysis and number theory of which he was a major exponent, particularly divergent series, integral equations, diophantine approximation, additive number theory, the Riemann zeta-function and Fourier series. His collaboration with J.E. Littlewood was well-established, about 60 of these papers having been written jointly with Littlewood. His influential text-book A Course of Pure Mathematics first appeared in 1908 and at the time of the award three other of his eleven books had been published.