THE LONDON MATHEMATICAL SOCIETY

London Mathematical Society

NEWSLETTER

No. 330 October 2004

LMS 2004 ELECTIONS AND OFFICERS

The ballot papers for the November elections to Council and Nominating Committee are being circulated with this copy of the Newsletter. Nine candidates for Members-at-Large of Council were proposed by the Nominating Committee. In addition, H.G. Dales was nominated directly by D. Salinger, seconded by J.R. Partington, J.K. Truss and R.B.J.T. Allenby, in accordance with By-Law II.2.

Tony Scholl has completed his term as a Vice-President and Martin Bridson is nominated in his place.

Please note that completed ballot papers must be returned by **Thursday 11 November 2004**.

Norman Biggs
General Secretary

ANNUAL DINNER

The Annual Dinner will be held after the Annual General Meeting on Friday 19 November at 7.30pm at the Bonnington Hotel, London WC1. The cost is £35.00 per person and members may book places for guests.

The booking form, enclosed with this *Newsletter*, should be returned together with payment to the London Mathematical Society office by **Monday 15 November**.

SUBSCRIPTIONS AND PERIODICALS

The annual subscription to the London Mathematical Society for the 2004-05 session shall be: Ordinary Members £33.00; Reciprocity Members £16.50; Associate Members £8.25. The prices of the Society's periodicals to Ordinary, Reciprocity and Associate Members for the 2004-05 session shall be: *Proceedings* £66; *Journal* £66.00; *Bulletin* £33.00; *Nonlinearity* £47.00; *Journal of Computation and Mathematics* remains free.

ANNUAL SUBSCRIPTION

The LMS annual subscription, including payment for publications, for the session November 2004–October 2005 is due on 1 November 2004. Together with this *Newsletter* is a renewal form to be completed and returned with your remittance in the enclosed envelope.

No action is required if you are already paying by direct debit, and do not wish to change your choice of publications. Fully complete and return the form if you are paying by direct debit but wish to change your choice of publications or

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add/delete a subscription to the European Mathematical Society. Bank accounts of members paying by direct debit will be debited with the appropriate amount on 17 January 2005. Other members should either enclose a cheque (£ sterling or US$) with their form or, if they have a UK bank account and wish to take advantage of this convenient form of payment, request a direct debit mandate. Although the facility to pay by credit card is open to all members of the Society, it is our preference that members continue to pay by direct debit.

PUBLICATIONS PRICING POLICY

The LMS has a pricing structure that allows individual members to purchase its journals, for personal use only, at a substantial discount. In common with other mathematical societies, the Society regards a subscription as for personal use only if:

(a) issues are either destroyed or held on a continuing basis among the member's personal belongings, and are not deposited even temporarily in a library, common room or other public room, and

(b) are accessible to other mathematicians (or to students) only with the member's permission, given individually in each case.

Issues are the personal property of members, who would be able, without negotiation with authorities, to take the issues with them if they left their present institution or to give them to another individual who is willing to abide by these terms.

ISAAC NEWTON INSTITUTE

Sir John Kingman, the current Director of the Isaac Newton Institute, retires in 2006 and the University of Cambridge has started the process of seeking a successor. Details are at www.newton.cam.ac.uk/director.html; applications should reach the Academic Secretary no later than **30 November 2004**. Informal enquiries may be made to Peter Landshoff, Chair of the Management Committee of the Institute, (tel: +44 (0)1223 337880; email: p.v.landshoff@damtp.cam.ac.uk).

LONDON MATHEMATICAL SOCIETY

Annual General Meeting

Friday 19 November 2004
University College London

3.15 – 3.30	**Annual General Meeting**
3.30 – 4.30	**Professor D.I. Olive (Swansea)** *Unified theories and the increasing synergy between mathematics and physics*
4.30 – 5.00	**Tea**
5.00 – 6.00	**Professor P. Goddard (IAS) Presidential Address** *Infinite dimensional symmetry*

The meeting will be held in the Chemistry Auditorium, Christopher Ingold Building, University College London, 20 Gordon Street, London WC1. Please note early start.

There are limited funds available to contribute in part to the expenses of members of the Society or research students to attend the 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).

The meeting will be followed by the Annual Dinner. For further details see the announcement in this *Newsletter*. All enquiries may be addressed to Susan Oakes (tel: 020 7637 3686, e-mail: oakes@lms.ac.uk).

GENDER AND RESEARCH ACTIVITY IN THE 2001 RAE

You may recall an item in the LMS *Newsletter* a few months ago in which an analysis of the gender differences in the numbers of UK academics in mathematics and in those submitted to the 2001 RAE was carried out. The overall conclusion was that a smaller percentage of female mathematicians were submitted as research active than male mathematicians.

Interestingly, a similar analysis has now been carried out by the AUT across all RAE Units of Assessment. The study found that 'across the sector, among academics engaged in both teaching and research activities, males were 1.6 times more likely than their female colleagues to be counted as research-active and to have had their work submitted in the 2001 RAE.' This ratio varies between subjects, and it turns out that in Mathematics the ratio is almost exactly 1.6. We could comfort ourselves with this – we are no worse than many other disciplines – but overall the result is a disturbing one for UK research.

The article may be found at www.aut.org.uk/ under News for July 2004.

Rachel Camina
Cathy Hobbs

UP AND COMING

Vanishing Point: The Perspective Drawings of Turner
As Professor of Perspective at the Royal Academy for thirty years (1807-37), Turner produced a number of remarkable drawings demonstrating both the theory and practice of linear and atmospheric perspective. Featuring about thirty-five of these rarely exhibited lecture diagrams, this special display highlights the diagrams he used to illustrate such subjects as colour theory, the nature of reflection and refraction, and the basic theorems of standard perspective. Of equal fascination to students of the arts and sciences as to lovers of Turner, the exhibition adds a new dimension to our appreciation of Britain's greatest painter. The exhibition is at the Clore Watercolour Galleries, Tate Britain, London until 7 November (www.tate.org.uk/home/news/vanishingpoint_ 23-04-04.htm)

ERRATUM

In the notice of the Twistor String Theory Workshop in the last issue the name Jolliffe was spelt incorrectly. The email address should be jolliffe@maths.ox.ac.uk (and the web address is www.maths.ox.ac.uk/~lmason/Tws.html). Our apologies.

IMU PRIZES

Nominations for the following International Mathematical Union prizes, which will be awarded at the opening ceremony of the ICM 2006 Congress, should be sent to the Chairs of the corresponding Prize Committees. The prizes being awarded are Fields Medals, the Rolf Nevanlinna Prize and the Carl Friedrich Gauss Prize. The relevant Committee Chairs are as follows:

Fields Medals:
Professor John Ball, Mathematical Institute, 24-29 St Giles', Oxford OX1 3LB, UK (ball@maths.ox.ac.uk)

Rolf Nevanlinna Prize:
Professor Margaret Wright, Computer Science Department, New York University, Warren Weaver Hall, 251 Mercer Street, New York, NY 10012, USA (mhw@cs.nyu.edu)

Carl Friedrich Gauss Prize:
Professor Dr Martin Groetschel, Konrad-Zuse-Zentrum für Informationstechnik Berlin (ZIB), Takustr. 7, D-14195 Berlin-Dahlem, Germany (groetschel@zib.de)

Nominations should ideally be sent by **15 December 2004**. Winners of each prize are not eligible for the others.

ICM2006
Financial Support

The Executive Committee of the International Congress of Mathematicians (ICM2006) has already received quite a number of requests concerning grants for attending ICM2006 in Madrid (Spain). The International Mathematical Union (IMU) and the Organizing Committee of ICM2006 are currently making efforts to obtain financial support to enable as many mathematicians as possible from developing countries to participate in ICM2006. Therefore IMU and the Organizing Committee will award a limited number of travel grants to active young research mathematicians from developing and economically disadvantaged countries, and to senior mathematicians from developing and economically disadvantaged countries (not necessarily members of IMU) to enable them to attend ICM2006. The local organizer will cover their living expenses in Madrid during the Congress. The age limit for the young travel grantees is 35 years at the time of the meeting.

The IMU travel grants, provided by the IMU Special Development Fund, will support travel costs and are intended primarily for young mathematicians from developing and economically disadvantaged countries (not necessarily members of IMU). The Organizing Committee of ICM2006 will also launch partial support for a limited number of senior mathematicians from Latin America and from developing Mediterranean countries, as well as for young Spanish mathematicians. Applicants are kindly requested to seek travel support from other sources. Spanish grantees may not be more than 32 years old at the time of the congress.

IMU and the local organizer advise applicants that five different support categories have been established, for
- young mathematicians from developing and economically disadvantaged countries
- senior mathematicians from developing and economically disadvantaged countries
- senior mathematicians from Latin America
- senior mathematicians from developing Mediterranean countries
- young Spanish mathematicians

A link to the list of eligible countries for each category will be posted as part of the application information accompanying the electronic application form (see below). Other young and senior mathematicians who do not fall within these groups are asked to refrain from applying for this aid.

Applicants may apply for only one category each. A common application form for the above five groups, and detailed information for each category of applicant, will be available by summer of 2005 on the ICM2006 website (www.icm2006.org) and by email. Applicants will be asked to provide a brief *curriculum vitae* (including academic education, degrees, professional employment, and the list of publications) and also to indicate if they are planning to contribute with a communication or poster.

The deadline for receipt of applications for all the categories is **1 January 2006**. All applications will be reviewed and applicants will be informed of the results as soon as possible after 1 May 2006. Queries concerning travel grants should be sent to ICM2006 (grants@icm2006.org) as of 6 September 2004. Please do not submit queries before that date.

Manuel de León,
President, ICM2006

MATHEMATICS AT THE BRITISH ASSOCIATION FESTIVAL OF SCIENCE

The Clay Institute Millennium Problems formed the focus of the Mathematics Section Programme at the British Association Festival of Science in Exeter in early September. Simon Singh, Marcus du Sautoy and Keith Devlin informed and entertained an enthusiastic audience, with discussions on the origins of the Millennium Problems, Andrew Wiles' solution of Fermat's Last Theorem, the Riemann Hypothesis and the Poincaré Conjecture. The session received good media coverage, and has already led to plans for several more media items (print and broadcast) in the future. The session concluded with a buffet lunch for all participants sponsored by the LMS.

The session was the outcome of a group convened by the LMS with the support of the IMA, RSS and BSHM. The group, which now constitutes the Mathematics Section Committee of the BA, is now planning a more ambitious programme for the 2005 Festival of Science, to be held in Dublin. Details will be announced as they are developed.

Inquiries about the BA Mathematics Section should be sent to Peter Cooper at the LMS (cooper@lms.ac.uk).

Keith Devlin   Marcus du Sautoy   Simon Singh

THE ICIAM 99 FUND

The Council of the London Mathematical Society invites applications from UK residents to a restricted fund created in 2001 by a donation from ICIAM 99 Ltd. Grants are awarded on the recommendation of an *ad hoc* committee consisting of Professor R.J. Knops (Convener), Professor J. Carr, Dr B.A. Olde Daalhuis, Professor T. Easingwood and Professor L. Thomas.

The purpose of The ICIAM 99 Fund is to help support activities in the following two categories:
- Organisation of short workshops in the UK that continue the most promising themes that have emerged from ICIAM 99 and ICIAM 03
- Any other UK activity in industrial and applied mathematics that the committee deems suitable for recommendation

There is no formal form of application, but information, to be provided in writing and signed by the applicant, should include as appropriate:
- Brief description, purpose, duration and intended location of the proposed activity
- Names and affiliation of those principally involved
- Itemised list of costs with supporting justification
- For meetings, whether a registration fee and its amount is intended to be charged
- Other (proposed) sources of income
- Any other relevant information

It is intended to close the Fund in November 2004. Accordingly, applications for the final round should be sent by regular postal mail to the Convener at the following address to reach him by **1 November 2004**. Professor R. J. Knops, Department of Mathematics, Heriot-Watt University, Edinburgh EH14 4AS.

LEVERHULME TRUST AWARDS

The following mathematicians have been awarded research fellowships by the Trustees of the Leverhulme Trust, under schemes administered by their Research Awards Advisory Committee.

Research Fellowships

- David Burns (Professor of Pure Mathematics, King's College, University of London) *Equivariant Tamagawa numbers and related topics*
- John Dold (Chair of Applied Mathematics, UMIST) *Continuum modelling of discrete biological behaviour*
- Yibin Fu (Professor of Applied Mathematics, Keele University) *Characterization of edge waves on generally anisotropic elastic or piezoelectric plates*
- Anne Henke (Lecturer in Pure Mathematics, University of Leicester) *Structural patterns of Schur algebras*
- Steffen Koenig (Chair of Pure Mathematics, University of Leicester) *From quantum groups to Schur algebras*
- Benedict Leimkuhler (Director, Centre for Mathematical Modelling, University of Leicester) *Generalized thermal baths and accelerated dynamics methods for molecular simulation*
- Carmen Molina-Paris (Lecturer, Department of Applied Mathematics, University of Leeds) *Compressible hydrodynamics in accreting systems*
- Michael Monoyios (Senior Lecturer in Mathematical Finance, Brunel University) *Optimal hedging performance in incomplete markets*
- Mikhail Osipov (Professor of Applied Mathematics, University of Strathclyde) *Models of smectic phases without layer contraction*
- Beatrice Pelloni (Lecturer in Applied Mathematics, University of Reading) *The spectral analysis of odd order boundary value problems*
- John Vaccaro (Reader in Theoretical Quantum Physics, University of Hertfordshire) *Accessible quantum entanglement*
- Howard Wheater (Professor of Hydrology Processes, Imperial College London) *Modelling the scale-dependence of rainfall and runoff*

Study Abroad Fellowships

- Michael Brennan (Professor of Engineering Dynamics, University of Southampton) *Smart structures, control algorithms and active vibration control*
- Mark Pollicott (Professor, Department of Mathematics, University of Manchester) *Harmonic analysis and its applications*

Emeritus Fellowships

- J. Milne Anderson (Department of Mathematics, University College, London) *Complex analysis, potential theory, probability*
- Ronald C. King (School of Mathematics, University of Southampton) *Representations of Lie algebras and superalgebras*
- Tom J. Willmore (Department of Mathematical Sciences, University of Durham) *Conformal geometry of Riemannian submanifolds*

RESEARCH NETWORKS IN THE MATHEMATICAL SCIENCES

Following the International Review of Mathematics the EPSRC Mathematical Sciences programme would like to clarify the situation regarding its research network call. Research networks to encourage collaborative activity may be submitted in responsive mode in any area of the mathematical sciences at any time. The purpose of the call is to stimulate interdisciplinary networks between sub-disciplines of the mathematical scientists and with other disciplines or industry. Such networks are a priority for the programme and are particularly encouraged.

The call allows funds of up to £60,000 to cover a network's operating and support costs over a maximum three year period. It should be noted that the networks should aim to become self sustaining as follow-on funding for existing networks will not normally be provided by EPSRC.

Potential applicants are strongly advised to read the EPSRC's Networks Guidance at www.epsrc.ac.uk/ResearchFunding/. Further information about the call can be found on the website www.epsrc.ac.uk/ CallsforProposals/ or by contacting Helen Carter (tel: 01793 444162; email: helen.carter@epsrc. ac.uk).

EPSRC MATHEMATICAL SCIENCES PROGRAMME

Research Grant Funding Data

Annette Bramley (EPSRC Programme Manager, Mathematical Sciences) and Peter Green (Head of Statistics Group, Bristol University) have been working together to produce a summary of data relating to research grant funding coming from EPSRC's Mathematical Sciences Programme during the financial years 2001/2, 2002/3 and 2003/4. The aim of this exercise was to allow a member of the research community access to suitably anonymised funding data to help EPSRC present it in a way that would be useful to the wider community. No formal modelling or analysis has been attempted; the report is confined to simple cross-tabulations. By making these data available, it is hoped to establish a greater degree of understanding about the recent success rates in research grant funding through EPSRC's Mathematical Sciences Programme.

The report is available on the EPSRC website under Research Funding/Programmes/ Mathematical Sciences/Responsive Mode Funding.

VISIT OF PROFESSOR Y.J. CHOIE

Professor Y.J. Choie (Pohang University of Science and Technology, Korea) will be visiting the UK in October 2004 supported by an LMS Scheme 2 grant. Professor Choie is an expert on modular forms, Jacobi forms and their applications to code theory and cryptography. She will be giving lectures at the universities of Nottingham, Cambridge and Sheffield. For more information contact Dr N. Diamantis (nikolaos.diamantis@nottingham.ac.uk).

VISIT OF PROFESSOR P.D. LAX

Professor Peter Lax (Courant Institute, New York University) will be visiting the Mathematical Institute, University of Oxford, from 11-22 October, supported by an LMS Scheme 2 grant. He will also be lecturing in Bath and at Imperial College, London. For further information on the times, locations and topics of these lectures, please visit the relevant departmental websites (www.maths.ox.ac.uk, www.bath.ac.uk/math-sci/, http://geometry.ma. ic.ac.uk/).

AUTOMORPHIC FORMS, SPECTRAL THEORY AND KLOOSTERMAN SUMS

Professor Roger Baker (Brigham Young University) will be giving a series of four lectures entitled *Automorphic forms, spectral theory and Kloosterman sums* in the Department of Mathematics, UMIST, in the week beginning 1 November. In these lectures, totalling six hours, the usefulness of Kloosterman sums in analytic number theory will be explained, showing how these sums occur in expansions of automorphic forms, and examine the analytic tools (including Kuznetsov's formulae) that paved the way for some recent applications to prime number theory. The talks will be accessible to beginning graduate students. For an abstract and timetable please see www.ma.umist.ac.uk/mdc/RogerBaker.htm or contact Dr M. D. Coleman (coleman@ umist.ac.uk).

DEREK TAUNT

Derek Taunt, one of the code-breakers who worked at Bletchley Park in World War Two, then becoming a Cambridge mathematician and later President of Jesus College, Cambridge, died on 15 July, aged 86. He was elected a member of the London Mathematical Society on 18 December 1952.

D.R. Taunt was born on 16 November 1917 and educated at Enfield Grammar School and City of London School. He then went up to Jesus College, Cambridge, where he read Mathematics. His first love in mathematics was analysis, and he was influenced by Hardy's lectures. Hardy accepted him as a research student, but his plan to begin research was overtaken by the outbreak of the war. He worked at Bletchley Park on code-breaking from 1941 to VE Day.

When Taunt returned to Cambridge after the war, Hardy had retired, and Taunt became a research student in group theory under Philip Hall. Taunt wrote his thesis in this area, and later published several papers. He spent the rest of his career at his old college, Jesus, as Fellow, Cayley Lecturer in Mathematics (1954–82), director of studies in Mathematics, then Bursar (1964–79), and finally President (1979–82). He was devoted to the College. In his private life, Taunt enjoyed music, cricket and walking. His wife, the artist Angela Verren Chick, whom he married in 1949, survives him, as do their two sons and a daughter.
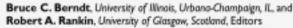
RESEARCH TRENDS IN SCIENCE AND TECHNOLOGY

Over the past several years, the International Conference on Research Trends in Science and Technology has become a primary forum for engineers, mathematicians and scientists from around the world to interact and present their work. The conference will be held from 7-9 March 2005 at the Lebanese American University on its two campuses (Beirut and Byblos). The organization of the conference by the University is a tribute to science and technology and a look to the future of the Lebanese American University in the third millennium. For further information please visit www.lau.edu.lb/news-events/conferences/rtst2005/intro.html.

BELFAST FUNCTIONAL ANALYSIS DAY 2004

The seventh annual Belfast Functional Analysis Day will be held on Saturday 20 November in the Department of Pure Mathematics of Queen's University Belfast, organised by Dr Martin Mathieu, Dr Ivan Todorov and Professor Anthony W. Wickstead.

Professor Lyudmila Turovska (Chalmers University, Göteborg, Sweden) will be the principal speaker, delivering two one-hour lectures on *Operator Synthesis and Harmonic Analysis*. There will also be approximately seven contributed thirty-minute talks by participants. The meeting is supported by an LMS conference grant, in particular to support attendance by graduate students.

Research students who may be interested in participating are strongly encouraged to contact the organisers as early as possible. For further information please contact Martin Mathieu (m.m@qub.ac.uk) or visit www.qub.ac.uk/bfad/.

DAVID FOWLER
A Memorial Symposium

A symposium in memory of David Fowler will be held on Tuesday 9 November at the Mathematics Institute, University of Warwick (the new Institute on the main campus).

Programme

10.00 Coffee and registration

11.00 Eleanor Robson (University of Cambridge) *Influence, ignorance, or indifference? Rethinking the relationship between Babylonian and Greek mathematics*

12.15 Tree planting

12.30 Buffet lunch

2.00 Paddy Patterson (Göttingen University) *Cyclotomy yesterday and today*

3.00 Henry Mendell (California State University) *Early Greek mathematics*

4.00 Tea

4.30 Len Berggren (Simon Fraser University) *Recent trends in the study of Islamic mathematics*

6.00 Memorial party with string quartet and buffet dinner

The event is open to all who would like to attend, but the organisers ask that all those intending to participate register by contacting the Warwick Mathematics Research Centre (mrc@maths.warwick.ac.uk), which can also provide information about travel and other practical matters. The scientific organisers are: J. Gray, E. Robson and M. Reid.

THE HISTORY OF STATISTICS 1900±30

The Department of Statistics and the Centre for the History of the Mathematical Sciences, both at the Open University, will present a one-day conference on The History of Statistics, 1900 ± 30, on Wednesday 15 December, at the Open University campus in Milton Keynes.

Speakers will be:

- J. Aldrich (Southampton) Information and economics in *Fisher's Design of Experiments*
- Sir David Cox (Oxford) *Major late 19th–early 20th century figures in statistics*
- A. Edwards (Cambridge) *John Venn as statistician*
- E. Magnello (UCL) *Karl Pearson and the origin of modern statistics: an elastician becomes a statistician*
- C. Pritchard (Open University) *Francis Galton and George Darwin's 'Common family weakness for statistics'*
- S. Senn (Glasgow) *An early 'Atkins' diet; R.A. Fisher analyses a medical 'experiment'*

The registration fee is £15.00 (including lunch and coffee/tea). For further details, please visit the conference website at statistics.open.ac.uk/Historyofstats/historyofstats.html, or email MCS-Statistics-Conferences @open.ac.uk.

Wendy Fortescue-Hubbard, LMS member and NESTA fellow, is to develop her skills in the National media to help popularise maths and make it more accessible to people of all ages: 'To reach, teach and inspire the unsuspecting audience'. The vehicle she has chosen to pursue this goal is a working concept called Mathagony Aunt. The vision is that we, as a mathematics community, work together to raise the profile of mathematics and mathematics teaching through a common portal that has no institutional, societal or government allegiance.

Wendy is looking for mathematicians from universities, industry, and those working in mathematics education, to help realise the vision. It could be that you have an ESPSRC fellowship and would like to get involved in a TV or radio programme, or that you would like to share your passion for mathematics via the webcast facility on www.mathagonyaunt.co.uk; or even directly with the general public at a shopping mall presentation. Perhaps you have students who would be interested in becoming Mathagony Aunts/Uncles, working in people's homes or in local community centres.

For the past two and a half years Wendy has been writing a successful Mathagony Aunt column in the Times Educational Supplement, responding to teachers' mathematics problems - from the concept of number to understanding calculus - often using poetry as an illustration. She has toured her mathematics show 'Algebra for Science' with the BBC Tomorrow's World Roadshow, set up the www.perfect-times.co.uk website as part of the Livelab international experiment, and acted as the mathematics expert on living TV. She has also created a set of 'Action Mats' illustrating the use of mathematics in different careers in the RAF; this as part of the RAF Maths challenge, which has now toured the UK several times, reaching over 5000 pupils.

Wendy is now being supported for two days a week by the West of England Learning and Skills council to pilot Mathagony Aunt in Bristol, working with the local community. The aim is to deliver mathematics through different avenues and encourage further study of the subject, and has resulted in a Mathagony Aunt column now featuring in the Bristol Evening Post, providing readers with help on maths problems and with interesting mathematical facts. A successful four-day interactive mathematics exhibition, called 'Maths on the Menu', was also held in The Mall in Cribbs Causeway, with members of the public taking part in mathematical quizzes, using voting modules to keep their contributions anonymous.

A central piece of the jigsaw is the series of Mathagony Aunt workshops that are run in the community, in people's homes, at community centres, or wherever the learner feels comfortable. The sessions are 'learner led' - enabling participants to be taught what they want to learn; are time flexible, and are for no more than ten people at a time. The first session was so successful that all those who took part expressed a desire to take their mathematics further: four are talking about going on to take 'A' Level maths and subsequent Mathematics degrees, while two would definitely like to teach. The aim of the Mathagony Aunt project is to identify these people in every community, and inspire them with the confidence to take their mathematical experience to the next level.

The concept is now moving into Newcastle, with 'surrogate Mathagony Uncle' Steve Humble from Newcastle College heading the extension. The next 'Maths on the Menu' will be at the end of January in Newcastle and he is seeking mathematicians to interact with the general public and show them our human face! Professor Neville Davies, director of the Royal Statistical Society for Statistical Education, has also expressed interest in acting as a surrogate Mathagony Uncle for Nottingham. Interest has also been expressed in Wiltshire, Gloucestershire, Redditch and Northern Ireland.

A webcast facility is now also available on www.mathagonyaunt.co.uk for up to ten people at a time, including the presenter. The facility is available for an indefinite period, courtesy of Virtex, and allows the maths community to interface directly with the general public, with sessions being archived. A programme of interactive sessions now needs to be developed throughout the mathematics community.

If you are interested in spearheading the implementation of Mathagony Aunt in your locality, assisting with the development of any of the components, or contributing in anyway to the working concept of Mathagony Aunt, please contact Wendy (tel: 01793 772278; email:wendy@mathagonyaunt.co.uk). If the media won't come to us then we will take mathematics to them!

EDINBURGH MATHEMATICAL SOCIETY MEETINGS

The following meetings have been arranged for the Edinburgh Mathematical Society on Fridays during the 2004–05 Session:

2004
- 15 October (Edinburgh) AGM and Professor J. Roe
- 12 November (Strathclyde) Professor I.G. Graham
- 10 December (Napier) Professor P. Graves-Morris

2005
- 21 January (Edinburgh) Professor E. Zuazua
- 18 February (Edinburgh) Professor B.J. Green
- 18 March (Aberdeen) Professor M. Reid
- 29 April (Stirling) Professor J.P. Keating
- 20 May (St Andrews) Professor M. Pollicott

For further information contact the Meetings Secretary, Tom Lenagan (tom@maths.ed.ac.uk).

YORKSHIRE DURHAM GEOMETRY DAYS

The first Yorkshire Durham Geometry Day will take place on Wednesday 6 October from 11.00 am to 5.00 pm in Room CM221, Department of Mathematics, Durham University. Talks will be given by Farid Tari, Norbert Peyerimhoff, Ivan Smith and Chris Wood. For further information email Wilhelm Klingenberg (wilhelm.klingenberg@durham.ac.uk) or visit the website www.maths.dur.ac.uk/~dma0jb/ydgd.html.

MATHEMATICA CONFERENCE

A conference on Mathematica will be held at the Palais des Congrès in Paris on Wednesday 6 October. The event will offer a unique opportunity to attend talks from experienced users and to learn more about new innovations, as several senior developers and researchers from the US headquarters of Wolfram Research, as well as from Wolfram Research Europe and Wolfram Research France, will be present to demonstrate state-of-the-art Mathematica technologies, applicable for both the academic and industrial communities. The conference will close with the appearance by videoconference of Stephen Wolfram, creator of Mathematica and CEO of Wolfram Research. He will discuss his book A New Kind of Science and answer questions from attendees.

An optional two-day Mathematica training course will be offered to conference attendees for a substantially reduced cost. The course (in French or English) takes place on 4-5 October, and will provide direct experience with all of the basic features of Mathematica, as well as a comprehensive foundation for developing advanced applications. Besides the step-by-step instruction on performing basic operations, the

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course includes an introduction to *Mathematica* and a deeper look at the *Mathematica* programming language, graphics, notebooks, and other features. For more information or to register please visit: www.wolfram.com/services/seminars/paris2004/ index.en.html.

LMS INVITED LECTURE SERIES 2004

The LMS Invited Lectureship for 2004, which was awarded to Professor Michael W. Davis, of the Ohio State University, was hosted by the School of Mathematics at the University of Southampton.

Professor Davis has contributed greatly to the theory of Coxeter groups and to the use of Coxeter groups in constructing examples in both algebra and geometry. For example, he has constructed examples of contractible manifolds admitting cocompact discrete group actions which are not homeomorphic to Euclidean space, and Poincaré duality groups which are not finitely presented.

Professor Davis' lecture series, entitled 'The Geometry and Topology of Coxeter Groups', covered a range of material. He started with semi-classical results on the combinatorics of Coxeter groups and word lengths. Next, Davis' version of the Coxeter complex (in which all stabilizers are finite) was introduced, and he showed how to use this to produce various examples in Geometry and Group Theory, including the celebrated results mentioned above. Various types of cohomological invariants were computed for Coxeter groups. The final two talks concentrated on L^2-cohomology, culminating in the recent work of Davis, Dymara, Januszkiewicz and Okun on weighted cohomology. This introduces a weighted version of L^2-cohomology for Coxeter groups, which for integer (vector) weights computes the ordinary L^2-cohomology of a building with this weight as its thickness vector, and gives an intriguing new invariant for non-integer weights.

Six supplementary lectures were given by participants, on topics that included hyperbolic manifolds, hyperbolic polytopes, notions of dimension and cohomology of Coxeter groups.

The participants included 21 PhD students and post-docs. Most participants were from the UK although Ireland, Israel and Russia were also represented. The full programme together with the overhead slides used by Professor Davis during his talks is available from www.maths.soton.ac.uk/lms.

Professor Ian Leary
University of Southampton

Photograph attributed to M.J. Dunwoody

Professor Michael Davis (front row centre, with white t-shirt) with attendees at the 2004 LMS Invited Lectures

RECORDS OF PROCEEDINGS AT MEETINGS

REGIONAL ORDINARY MEETING

held on *Wednesday 2 July 2004* at the University of Newcastle-upon-Tyne, as part of the Northern Regional Meeting and Workshop on *Geometric Group Theory*. At least 70 members and visitors were present for all or part of the meeting.

The meeting began at 2.15 pm, with Professor J. HOWIE in the Chair. One person was elected to Associate Membership: T.M. Edwards.

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

Professor D. Holt introduced a lecture given by R.I. Grigorchuk on *Groups, finite automata and spectra*.

Professor G. Baumslag introduced a lecture given by M. Gromov on *Separation in groups and L_2 Kähler geometry*.

Professor Howie expressed the thanks of the Society to the local organisers and the speakers for putting on such an excellent meeting.

After the meeting a dinner was held at the Assembly Rooms, Newcastle.

LMS NORTHERN REGIONAL MEETING 2004

The 2004 Northern Regional Meeting took place in Newcastle on the afternoon of July 2nd, with Mihail Gromov and Rostislav Grigorchuk as its speakers. It was preceded by a 3-day workshop on geometric group theory, focusing on formal languages, logic and equations.

All four days of this double event were impressively well attended, perhaps not surprisingly given our star speakers and a very impressive supporting cast of Gilbert Baumslag, Sasha Borovik, Martin Bridson, Bob Gilman, Derek Holt, Jim Howie, Alexei Myasnikov, Mark Sapir and Paul Schupp speaking at the workshop.

The workshop speakers covered a spectrum of subjects, many giving broad ranging surveys of exciting new developments. They covered the solution of equations, the conjugacy problem, the word problem, first order theory for groups (and hence Tarski's problem and its generalisations), the Andrews-Curtis conjecture, and Tits alternatives. They referred to hyperbolic groups, to their subdirect products, to fully residually free groups (which share some behaviour with free groups, and are associated with the solution of Tarski's problem), to generalised tetrahedral groups, and to the 'continuum' (according to a seminal paper of Bernhard Neumann, on which Baumslag's talk reflected) of 2-generator groups. They studied Dehn functions and measured worst case and generic case complexity (which often turned out to be dramatically different) and much more.

It was clear that there was also a lot happening outside the talks too, from the material which kept appearing on blackboards throughout the School of Mechanical Engineering, where the meeting took place.

In between, the visitors enjoyed the delights of Newcastle. To round off the workshop the newly elected Lord Mayor and his Mayoress entertained us at his Mansion House in the first social function of his office. The house and gardens were spectacular and afterwards a large delegation strolled down to enjoy Newcastle nightlife on our famous Quayside; no chimney stacks in sight, just life and rejuvenation in a city which is famous now for partying.

On the following day the two main speakers enthralled their audience with a pair of beautiful surveys.

Rostislav Grigorchuk opened the meeting with a broad discussion which linked groups, dynamical systems, graphs, finite automata and spectral theory. His groups were defined from automorphisms of rooted trees, or by finite transducers, or from iterated monodromy, and he showed us how to compute their spectra, and how to use them. His famous infinite 2-group of intermediate growth appeared on a few occasions (in various disguises) as one of many very illuminating examples. The spectrum of the Lamplighter group, which he had computed with Zuk in 2001, had turned out to be rather special, and he explained how the construction of a counter-example to the strong Atiyah conjecture could be deduced from this.

Mihail Gromov followed with a very geometric talk. He introduced us to Kähler manifolds; for manifolds of this type he famously proved an old conjecture (attributed to Hopf) on the sign of the Euler characteristic, via a study of square integrable harmonic forms on the universal cover. He explained how the Kähler property could be defined by restriction of monodromy to the unitary group, and outlined the use of Hodge theory, in particular to restrict the first Betti number. He explained how these restrictions severely limited the kinds of groups which could be associated with algebraic Kähler manifolds.

The meeting ended with a dinner at the Assembly Rooms, which reinforced a view of Newcastle as a city with a great history.

Professor Sarah Rees
University of Newcastle

THEATRE REVIEW

Calculus **by Carl Djerassi**
New End Theatre, Hampstead

According to the publicity for this play, the author, a Nobel Laureate in Chemistry, is seeking a reappraisal of the greatest scientist of his (and perhaps any) time, Isaac Newton, by depicting his behaviour during the notorious dispute with his German contemporary Leibnitz over priority for the discovery of differential calculus as being unworthy of so eminent a thinker. My impression at the outset was that this view of Newton as flawed genius seemed hardly new, and the moral (rather than mathematical) interpretation posited for 'calculus' as a metaphorical kidney stone lodged in his soul a little tendentious.

Things got moving very briskly, plunging us into the atmosphere backstage at Drury Lane in 1712. This familiar Shakespearean ruse served to establish an atmosphere of intense involvement, sometimes teetering on the brink of hyperactivity. Or were we just a bit too close to the action? You felt like helping them change their jerkins with all those buttons.

The performance was fun, with the period costumes generating an air of Restoration comedy, some humour and a touch of intrigue. A fine lesson on how to enliven a dull lecture on rates of change was given by the eccentric Mr de Moivre, who consumed an apple in memorable fashion to enlighten a committee colleague: perfect for impressing the QAA inspectors. Various themes which resonate with contemporary life enter, includ-

ing the misogynistic attitudes endemic at the time and the intellectual frustrations of women reduced to indirect involvement in politics and science through social activities of ostensibly trivial nature. The classically ambiguous nature of the procedure used by the Royal Society to set up a commission charged with the task of judging the Newton-Leibnitz priority case recalls more recent government activities of this kind. And in the end we were left, as always, with a preordained decision cloaked in a characteristic fudge.

The actors deliver some strong, enthusiastic characterisations, fleshing out a rather thin plotline, and the evening is certainly entertaining, but there is a large hole at the centre of the play: the personality of the great man himself, only present for two short peripheral scenes. No-one, including the playwright, has any clear view of his personality and that role seems impossible to portray. How did it happen that someone of such supreme scientific gifts, equally capable of solving explicit problems and formulating an entire theory on which physics would ride smoothly for two centuries, could see it as his role to supervise the Royal Mint, with the attendant duty of supervising mediaeval-style executions of people convicted of debasement of the coinage? In the end, though, it is quite believable that Newton would stack a committee to suit his purpose; he must have been politician enough for all that. Perhaps the moral interpretation of *Calculus* makes some sense after all.

Bill Harvey
King's College London

ISAAC NEWTON INSTITUTE FOR MATHEMATICAL SCIENCES, CAMBRIDGE

AN INTRODUCTION TO RECENT APPLICATIONS OF MODEL THEORY

(29 March - 8 April 2005)

in association with the Newton Institute programme entitled
Model Theory and Applications to Algebra and Analysis
(17 January - 15 July 2005)

Conference supported by the European Commission, Sixth Framework Programme – Marie Curie Conferences and Training Courses - MSCF-CT-2003-503674

Organisers: A. Pillay (Chair), E. Bouscaren, B. Poonen, B. Zilber

Theme of Conference: The workshop will consist of a series of tutorials together with some research talks on related topics. It is hoped that graduate students and young researchers will also give a few short invited talks which will be decided on closer to the workshop date. Tutorials are expected to be given on the following themes:

- Model theory of differential fields, difference fields, and compact complex spaces
- Zariski structures, analytic Zariski structures and complex analytic structures
- Model theory of valued fields
- Model theory of metric structures
- Motivic integration
- Hilbert's 10th problem and variations
- Real analytic geometry and o-minimality

Invited speakers: A. Berenstein, J.-B. Bost, E. Bouscaren, F. Campana*, Z. Chatzidakis, R. Cluckers, K. Eisentrager, I. Fesenko, C. W. Henson, E. Hrushovski*, D. Lippel, F. Loeser, A. Macintyre, D. Macpherson, Y. Peterzil, Th. Pheidas, A. Pillay, Y. Raynaud, D. Roessler, Y. Yomdin, T. Scanlon, P. Speisseger, A. J. Wilkie, B. Zilber.
(* to be confirmed)

Location and cost: The Euro Training Course will take place at the Newton Institute and accommodation for participants will be provided in single study bedrooms with shared bathrooms at Wolfson Court. The conference package, costing £835, includes accommodation, breakfast and dinner (from dinner on Monday 28 March to breakfast on Saturday 9 April 2005), with lunch and refreshments during the days that lectures take place.

Further information and applications forms are available at www.newton.cam.ac.uk/programmes/MAA/maaw01.html. Completed application forms should be sent to Tracey Andrew, Isaac Newton Institute, 20 Clarkson Road, Cambridge CB3 0EH, or via email, (t.andrew@newton.cam.ac.uk). Scientific enquiries should be sent to Anand Pillay, (pillay@math.uiuc.edu). The closing date for the receipt of applications is **30 November 2004**.

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/calendar.html).

OCTOBER 2004
6 Yorkshire Durham Geometry Day, Durham University (330)
6 Mathematica Conference, Palais de Congrès, Paris (330)
11-12 Mathematical Biology & Applied Analysis Seminar, Dundee University (329)
15 Edinburgh Mathematical Society AGM, Edinburgh University (330)
18 Euler Day, Warwick University (329)
18-19 Nature of Mathematical Proof Discussion Meeting, Royal Society, London (329)

NOVEMBER 2004
9 David Fowler Memorial Symposium, Warwick University (330)
12 Edinburgh Society Meeting, Strathclyde University (330)
19 LMS AGM, London (330)
25 Mathematical Biology Conference, Glasgow University (329)
20 Belfast Functional Analysis Day 2004, Queen's University, Belfast (330)

DECEMBER 2004
10 Edinburgh Mathematical Society Meeting, Napier University (330)
14-16 Mathematics in Signal Processing VI, IMA Conference, Cirencester (319)
15 The History of Statistics, 1900 ± 30 Conference, Open University, Milton Keynes (330)

JANUARY 2005
10-14 Twistor String Theory Workshop, Oxford University (329)

10-14 Lévy Processes Symposium, Manchester University (329)
21 Edinburgh Mathematical Society Meeting, Edinburgh University (330)

FEBRUARY 2005
18 Edinburgh Mathematical Society Meeting, Edinburgh University (330)
25 LMS Mary Cartwright Lecture, London

MARCH 2005
7-9 Research Trends in Science & Technology Conference, Lebanon (330)
18 Edinburgh Mathematical Society Meeting, Aberdeen University (330)
29-8 Apr Introduction to Recent Applications of Model Theory Conference, INI, Cambridge (330)

APRIL 2005
4-7 Mathematics 2005, Liverpool University
29 Edinburgh Mathematical Society Meeting, Stirling University (330)

MAY 2005
18 LMS Midlands Regional Meeting Birmingham
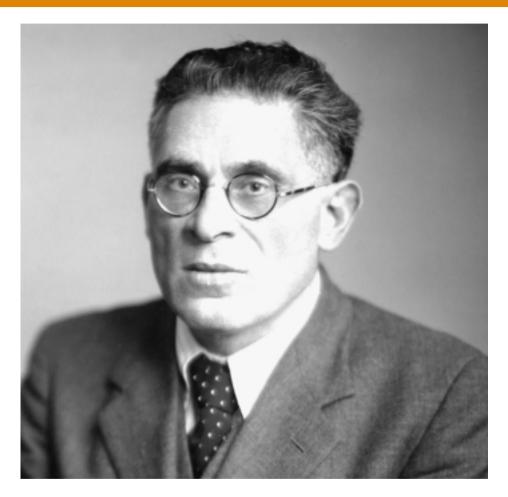**20** Edinburgh Mathematical Society Meeting, St Andrews University (330)

JUNE 2005
17 LMS Meeting, London

JULY 2005
10-14 Mathematical Modelling and Applications International Conference (ICTMA12), City University, London (321)
10-15 British Combinatorial Conference, Durham University (329)
11–15 Inverse Problems in Engineering Conference: Theory & Practice, Cambridge University (320)
25–29 Gregynog Workshop on Computational Techniques in Spectral Theory & Related Topics, Gregynog Hall, Powys (320)

Professor Mordell received the De Morgan Medal on 11 December 1941. Extract from the President's address: 'Mordell has been recognized for a long time as one of the first among British mathematicians, both for the importance of his own researches and for his inspiration of the work of others. Although a powerful analyst, Mordell has always been primarily an arithmetician. He was indeed for long almost the only British mathematician of whom this could be said; and, if this is no longer true, it is mainly the result of his own exertions. The list of Mordell's contributions to the Theory of Numbers is a long and imposing one.'