THE LONDON MATHEMATICAL SOCIETY

NEWSLETTER

No. 364 November 2007

Forthcoming Society Meetings

2007

Friday 23 November
AGM, London
M. Struwe
J.F. Toland
Presidential Address
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2008

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Mary Cartwright Lecture, Oxford
R. Peto
V. Beral
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Monday 31 March
Northern Regional Meeting, Manchester

Monday 9 June
Midlands Regional Meeting, Birmingham

Friday 4 July
London

Monday 15 September
SW & South Wales Regional Meeting
Swansea

Friday 21 November
AGM, London

WHAT HAPPENS AT YOUR AGM?

The Annual General Meeting of the London Mathematical Society will take place on Friday 23 November 2007 at 3.15 pm in the Chemistry Auditorium, University College London. At the AGM the following events will happen:

Members bringing their ballot papers will have a last opportunity to vote.

The Society's Treasurer, Professor N.M.J. Woodhouse, will present his report on the past year and invite questions. Copies of the Annual Report of Activities will be available.

A list of nominations for election to membership to the Society will be submitted for approval by the meeting, and any member present who has paid his or her first subscription and not yet been admitted to the Society will have the opportunity to sign the Membership Book, which dates back to the origin of the Society in 1865.

The LMS President, Professor J.F. Toland, FRS, FRSE, will present certificates to the 2007 Prizewinners. The Society 2007 Prizewinners were announced at the June Society meeting and the names published in the July *Newsletter*.

Changes to the By-Laws, circulated with the October *Newsletter*, will be proposed for approval by the meeting.

Professor Michael Struwe (Zürich), the first of two speakers at the Society Meeting, will give a talk on *Geometric energy quantization*.

After the adjournment for tea, the scrutineers will declare the results of the ballot, and the newly-elected President will take the Chair and invite Professor John Toland to give his presidential address on *Skating on thin ice*.

The AGM will be followed by a reception at De Morgan House for those members attending the Annual Dinner at the Hotel Russell at 7.30 pm. The cost of the Annual Dinner is £42.00 per person and members may book places for guests. The booking form, enclosed with the October *Newsletter*, should be returned together with payment to the London Mathematical Society office by **Monday 13 November**.

LMS ANNUAL SUBSCRIPTION

Subscription

The Society is appreciative of those members who have paid their 2007–08 subscriptions. May we remind those who have not yet paid, that subscriptions are due on **1 November 2007**. Prompt payment ensures conti-

nuity of publications and avoids the time and cost of reminders. If you have misplaced your renewal of subscription form (enclosed with your September *Newsletter*) contact the LMS office (email: membership@lms.ac.uk; tel: 020 7637 3686; fax: 020 7323 3656).

Donations

Council is grateful to members who responded to the Treasurer's request to consider making a donation together with payment of their LMS subscription. This will benefit the Society in its work in supporting mathematics. Every pound makes a vital difference, and the extra income generated by donations will enable the Society to maintain the level of grant funding it makes through its schemes and committees. By being a donor you are helping us to increase the Society's activities in education, in supporting mathematics in universities and fighting for research funding, so we are very grateful for your support.

LAUNCH OF *JOURNAL OF TOPOLOGY*

The London Mathematical Society will be holding a reception and meeting for members during the Joint Mathematics Meeting in San Diego from 6–9 January 2008. The event will be held from 6:30 pm–7:30 pm on Monday 7 January to celebrate the launch of the Society's new journal, called *Journal of Topology*, which will publish its first issue in January 2008.

LMS members who have not already done so will have the opportunity to sign the Membership Book which dates back to 1865.

Members who wish to attend the reception should apply for a free ticket to Susan Oakes, the Administrator of the Society (susan.oakes@lms.ac.uk) no later than **Friday 7 December**. The Society hopes to entertain as many as possible of its members, but numbers may be limited by the capacity of the room.

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LONDON MATHEMATICAL SOCIETY

ANNUAL GENERAL MEETING

Friday 23 November 2007

3.15–3.30 Annual General Meeting (see details on page 1)

3.30–4.30 **Professor M. Struwe (Zürich)**
Geometric energy quantization

4.30–5.00 Tea

5.00–6.00 **Professor J.F. Toland, FRS, FRSE (Bath)**
Presidential Address
Skating on thin ice

The meeting will be held in the Chemistry Auditorium, Christopher Ingold Building, University College London, 20 Gordon Street, London WC1. Please note the 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* (page 1). All enquiries may be addressed to Susan Oakes (tel: 020 7637 3686, email: susan.oakes@lms.ac.uk).

ATLE SELBERG

Atle Selberg, who was elected an Honorary Member of the London Mathematical Society in 1985, died on 6 August 2007, aged 90.

M.N. Huxley writes: Research students in the 1960s were assured by Conway that anyone who proved the Prime Number Theorem would live forever. The death of Atle Selberg was the fourth and last falsifying example. He was born in Langesund on the South coast of Norway on 14 June 1917. The youngest of three mathematical brothers in a large family, he was inspired by the beauty of formulae and the story of Ramanujan. He went up to the University of Oslo in 1935 and won his PhD there in 1943, having already been appointed a research fellow.

He made many of his discoveries and rediscoveries working in isolation during the war years. In 1947 Selberg and his wife Hedvig visited the Institute for Advanced Study at Princeton. By 1949 he was a permanent member, and became a Fields Medallist in 1950. Selberg's interests centred on automorphic functions, prime numbers, the Riemann zeta function, and related areas in analysis and algebraic groups.

He saw the Riemann Hypothesis as a question for a general class of functions, and he evidently believed, with Riemann, that it connected with the real eigenvalues of some self-adjoint operator. His favourite methods were inner products and duality, and to mollify the property of being a prime number. He rediscovered the Peterson inner product for modular forms, and interpreted the Rankin series as a convolution. These ideas led to the Trace Formula, linking the metric geometry of an orbifold with the spectrum of its Laplacian. His mollifiers were coefficients on the integers, often constructed by inner products, which emphasised the prime numbers. They were used in his Sieve, and to show that a positive proportion of the zeros of the zeta function agreed with the Riemann Hypothesis, quantifying Riemann's *sehr wahrscheinlich*. Sensationally, his mollification led to a real-analytic proof of the Prime Number Theorem, hitherto accessible to complex methods alone.

As Selberg was working on the Prime Number Theorem, it seems that an unguarded conversation led to Erdös completing the argument first. Selberg's reaction was a disaster. After that he published nothing till it was complete with nothing more to say. Later he relented enough to give glimpses of his work in conference lectures. But he renounced the stimulus of discussing ideas, and his discoveries and insights were slow to influence the mathematical community.

Selberg sometimes discouraged young mathematicians by saying 'I knew that,' but he inspired great loyalty in his friends. Three mathematicians joined the family vigil as he lay dying. He leaves a widow, two children, and four grandchildren.

COLIN TRIPP

Colin Tripp, who was elected a member of the London Mathematical Society on 19 November 1999, died on 14 March 2007, aged 69.

Tony Rawlins writes: Colin was a much admired and respected academic in the Department of Mathematics at Brunel from September 1966 until his retirement in 2002. He was generally regarded as one of the kindest, cleverest, but also one of the most modest people you could wish to meet. Colin was a problem solver *par excellence*. He had a very lucid style of lecturing that incorporated this problem-solving approach. He took endless pains to help even the weakest students to try to understand what he was teaching. He felt he had a mission in life to convey the beauty of mathematics to everyone he encountered. This was a subject he understood so well and loved so much.

Many students and colleagues will be sad to hear of his death at a time when he was still so active. He will live on in the thoughts and memories of all those people he helped, in his lifetime.

LONDON MATHEMATICAL SOCIETY

Spitalfields Day

in association with the Isaac Newton Institute for Mathematical Sciences programme entitled *Phylogenetics*

Yggdrasil: Reconstructing the Tree of Life

Thursday 6 December 2007, Isaac Newton Institute

13:00 – 14:00 **Professor Peter Lockhart** (Massey University, New Zealand)
Phylogenetic models and the origins of chloroplasts

14:00 – 15:00 **Professor Tandy Warnow** (University of Texas at Austin, USA)
Algorithm design for large-scale phylogenetic analysis

15:00 – 15:30 **Tea**

15:30 – 16:30 **Professor John A. Rhodes** (University of Alaska, Fairbanks, USA)
Phylogenetic models and algebra

16:30 – 17:30 **Professor Andreas Dress** (Chinese Academy of Sciences, China)
Phylogenetic combinatorics: analysing branching patterns in evolutionary trees

17:30 – 18:30 **Wine Reception**

The talks are aimed at final year undergraduate/beginning postgraduate students in biology, mathematics, and computer science, and will address the problems and challenges of reconstructing evolutionary relationships from molecular sequence data. The interdisciplinary nature of phylogenetic studies – biological, computational, and mathematical problems arise naturally – will be highlighted.

Anyone interested is welcome to attend; talks will be aimed at a general mathematical audience. Please let Tracey Andrew at the Institute know by **Friday 30 November** if you intend to come: telephone (01223) 760992; fax: (01223) 330508; email: t.andrew@newton.cam.ac.uk.

There are limited funds available to assist research students to attend, please apply by **Friday 30 November** to Tracey Andrew by email (t.andrew@newton.cam.ac.uk) or post at the Newton Institute, 20 Clarkson Road, Cambridge, CB3 0EH.

Scientific enquiries may be addressed to Elizabeth Allman (e.allman@uaf.edu) or Vincent Moulton (vincent.moulton@cmp.uea.ac.uk).

RICHARD LEWIS

Richard P. Lewis, who was elected a member of the London Mathematical Society on 20 May 1977, died on 26 July 2007, aged 65.

Following his first class degree at Queen's College, Oxford, in 1963, he studied algebraic topology under the supervision of Sir Michael Atiyah and joined the staff of the University of Sussex in October 1966.

James Hirschfeld writes: He was a talented mathematician and a willing colleague. He enjoyed all aspects of mathematics and communicated this to the students in the many different courses that he taught. He was a popular supervisor for student essays on mathematical games, and played the game *Go* to a respectable standard.

During the 1980s, he switched his research interests to number theory, and completed a Sussex DPhil in 1991. His published output was distinguished by its elegance, even amongst the generality of papers in that field, where such a quality is often noted. His last paper 'The generating functions of the rank and crank modulo 8' will appear in a forthcoming issue of the *Ramanujan Journal*. He retired from Sussex University in 2003, but was tutoring the Open University MSc right up to the end, as well as continuing with his own research.

DAVID EMERY

David John Emery, who was elected a member of the London Mathematical Society on 18 June 1970, died on 2 August 2007, aged 62.

David Emery was a pupil of Harry (Professor G.E.H.) Reuter at Imperial College; his PhD, of 1974, was on probability theory. His special interest was fluctuation theory of random walks and Lévy processes, particularly use of complex-variable (Wiener-Hopf) methods. Both his thesis and the papers that came out of it were recognized as excellent, and have been influential. David spent his career at the Polytechnic of Central London, which became the University of Westminster in 1992.

ABEL PRIZE 2008

Call for nominations

The Norwegian Academy of Science and Letters is calling for nominations of candidates for the Abel Prize 2008.

The Abel Prize, which was awarded for the first time in 2003, amounts to NOK 6 million (approximately €750,000). It is an international prize for outstanding scientific work in the field of mathematics, including mathematical aspects of computer science, mathematical physics, probability, numerical analysis and scientific computing, statistics, and also applications of mathematics in the sciences. The prize has previously been awarded to Jean-Pierre Serre (2003), Michael Atiyah and Isadore Singer (2004), Peter Lax (2005) and Lennart Carleson (2006).

The prize is to recognize contributions to mathematics and its applications of extraordinary depth and influence. Such work may have resolved fundamental problems, created powerful new techniques, introduced unifying principles or opened up major new areas. The intent is to award prizes over the course of time in a wide range of areas of mathematics and its applications.

The Abel Committee will submit a recommendation of a candidate for the Abel Prize to the Norwegian Academy of Science and Letters, which will select the Abel laureate on the basis of this recommendation. The name of the Abel laureate will be announced in March 2008. The nomination letter should contain a CV and a description of the candidate's works, together with names of distinguished specialists in the field of the nominee who can be contacted for independent opinion. The letter should be sent, no later than **15 November 2007**, to: The Norwegian Academy of Science and Letters, Drammensveien 78, NO-0271 Oslo, Norway.

It is also possible to nominate candidates by using the www.abelprisen.no.

LMS AND IMA DISCUSSIONS

Comments sought

An LMS and IMA Joint group is developing a model that if implemented would lead to the replacement of both the Institute of Mathematics and its Applications and the London Mathematical Society by a new society.

As this work progresses, members are invited to send views directly to the group and can be assured that all comments received will be brought to the attention of the group at its next meeting. Although the NSI group does not guarantee to reply to all messages it may on occasion choose to do so. The email address to use is nsicontact@btinternet.com.

INVITED LECTURES 2008

Professor Andrei Okounkov
Random Surfaces

7–11 April 2008

The 2008 LMS Invited Lectures will be given by Professor Andrei Okounkov (Princeton) on *Random Surfaces*. The Lectures will take place at the Institute for Mathematical Sciences, Imperial College London from 7–11 April 2008.

There will also be lectures by Nekrasov, Szendröi and others.
For further information contact Richard Thomas (richard.thomas@imperial.ac.uk) or visit the website www.ma.ic.ac.uk/~rpwt/LMS.html.

RESEARCHERS IN RESIDENCE

Inspiring the Next Generation

The Researchers in Residence Scheme aims to enrich the experience of school students by placing a cutting-edge researcher in their classroom. Research Council-funded early-stage researchers (post-doctoral and PhD students) from any discipline are eligible to participate.

Ewan Russell, a PhD student in Pure Mathematics at the University of Edinburgh, has just completed a placement. He says "Maths just has a bad reputation, people have a negative perception about it and they think it's not relevant to their life. I wanted to be a Researcher in Residence to show the fun side of Maths, explain how it affects our lives and learn more about how people respond to Maths."

He worked with 11–14 year old students studying mathematics at Currie High School in Edinburgh. He devised a series of interactive talks about mathematics, mathematicians and university life using popular culture references, jokes and analogies. "I had to think hard about how I could convey my research and came up with an analogy about symmetry being like prettiness. This led on to a game of shape *Blind Date* that the students enjoyed. I also spent some time talking about movies and TV programmes with a Maths theme, pointing out some of the mathematical mistakes made in movies."

After an enthusiastic response from school students he was convinced that he had made some progress in getting his message across. He was also really impressed with the teachers at the school and the interesting and new ways they are teaching Mathematics all year round. "Researchers in Residence is a great scheme, things changed for me by getting involved and it came at a good time for me career-wise. In fact, it helped me get a job as a Maths Outreach Officer in Coventry! I found it a really fulfilling experience; it was rewarding for me to see the students get enthusiastic about what I was doing with them."

For further information contact www.researchersinresidence.ac.uk.

LMS DURHAM RESEARCH SYMPOSIA

The LMS Research Meeting Committee is responsible for the planning of the LMS Durham Symposia, which have been running successfully each July/August since 1974, with 86 symposia to date, in a wide range of mathematical disciplines. In 2007 there were two Durham Symposia, both supported by EPSRC.

- *Recent Developments in Random Walks*, 2–12 July (organisers: B. Hambly, L. Saloff-Coste, P. Tarrès)
- *Twistors, Strings and Scattering Amplitudes*, 19–25 August (organisers: Z. Bern, P. Candelas, X. de la Ossa, L. Mason)

The Durham website (www.maths.dur.ac.uk/events/Meetings/LMS/) gives information about the above, and all previous symposia including, in many cases, a list of participants, abstracts of talks, a symposium photograph (the earliest surviving photograph is from 1976), lecture notes and, for more recent symposia, videos of the talks.

The symposia in 2005 and 2006 were:

2005

- *Conformal Field Theory and String Theory* (P. Bowcock, P Dorey, K. Wendland)
- *Operator Theory and Spectral Analysis* (B. Davies, Y. Safarov, E. Shargorodsky)

2006

- *Dynamical Systems and Statistical Mechanics* (C. Beck, C. Dettmann and M. Pollicott)
- *Methods of Integrable Systems in Geometry* (F. Burstall, S. Dorfmeister, M. Guest, F. Pedit)

The LMS Research Meetings Committee welcomes ideas for symposia for 2009 and later, from potential organisers and others. More information about Durham Symposia is available on the LMS website (www.lms.ac.uk/activities/researchmeet com/).

INDUSTRIAL MATHEMATICS INTERNSHIPS

The Smith Institute, in its role as manager of the Knowledge Transfer Network for Industrial Mathematics (KTN), and the Engineering and Physical Sciences Research Council (EPSRC) are injecting fresh energy into UK businesses by launching a programme to bring cutting-edge techniques to business innovation and to develop long-term working relationships between companies and universities.

The launch of the Industrial Mathematics Internships was held at the Institute of Engineering and Technology (IET) on the evening of 18 September 2007. Industrialists, academics, and representatives from government and the public sector joined the Industrial Mathematics KTN at the launch of this exciting initiative and made it into a really successful event.

An Industrial Mathematics Internship is a way for companies and university research groups to promote direct knowledge exchange and develop long-term working relationships, through engaging a dedicated postgraduate researcher to work on a specific industrial project over a period of 3–6 months.

Each Internship is a collaboration between a host company, an Intern, and a research group within a university. Industrial Mathematics Internships are a new opportunity with a threefold benefit: for companies, university departments and the Interns themselves.

As an industrialist, you will explore new horizons or improve existing operations by bringing mathematical expertise and cutting-edge techniques into your innovation activities. As a university faculty member, you will use Internships as a seed for growing new industrial collaborations and relationships. As an Intern, you will demonstrate your knowledge and insight in addressing industrial challenges, and gain first-hand experience of the business environment.

We believe that Industrial Mathematics Internships will develop into a major engine for innovation. A pilot phase of the initiative will run between September 2007 and August 2008 and will establish 6 Internships.

Each Internship will last between three and six months and will be supported by one of the KTN's Technology Translators, who will assist in establishing the projects, building the relationships, exploiting follow-on opportunities and disseminating a final case study through the Industrial Mathematics community.

Further details on Industrial Mathematics Internships can be found on the KTN website at www.ktn-internships.net. If you would like to apply for an Internships or simply discuss a project idea, contact Dr Claudia Centazzo at the Smith Institute (claudia.centazzo@smithinst.co.uk).

Dr Tim Bradshaw, Head of innovation, Science and Technology, at the CBI, said, 'The Industrial Mathematics Internships programme is an excellent example of how business and universities can collaborate for mutual benefit – helping businesses become more innovative and successful by making effective use of skills and knowledge developed in universities while at the same time providing extremely valuable experience for postgraduate researchers. The critical component is that researchers will work on finding solutions to real business problems, something for which the Smith Institute already has an excellent reputation.'

You can also visit the blog by Trevor Maynard from Lloyd's Exposure Management at http://riskblog.lloyds.com/trevormaynard/september2007/mathsphd.htm.

MATHEMATICS POLICY ROUND-UP

To ensure the UK has a future in the world knowledge economy, there must be a targeted campaign to improve the teaching of science, technology, engineering and mathematics (STEM) subjects at schools, according to a report handed to the Government early in October. Former minister for science and innovation Lord Sainsbury's report *Race to the Top: A review of Government's Science and Innovation Policies* called for action in mathematics and science to meet the demand for skilled workers of the future.

In particular the review advised the Government to proceed with caution when introducing the second mathematics GCSE in 2010. It states: 'All pupils who would benefit should have the option to study the second mathematics GCSE and schools should find ways to make it available to them'.

Lord Sainsbury's review calls for more to be done to increase the supply and quality of mathematics teachers. This includes financial incentives during their first five years, a mentoring scheme for newly qualified teachers and funded conversion courses for teachers currently unqualified in the subjects they teach. He also called for more careers advice for those studying STEM subjects. In response, England's schools' minister Ed Balls announced an £8 million package to introduce accreditation courses in mathematics, physics and chemistry for teachers wishing to become specialists, plus a £5,000 incentive to encourage teachers to enrol.

Other measures called for in the report include a co-ordinated effort to ensure there is detailed information on the supply and demand for STEM skills and stronger ring fencing for Government Departments' research and development budgets, particularly welcome in the wake of the Research Council cuts earlier this year.

The Chancellor's pre-budget report later in the month underlined the Government's plans to promote science and mathematics careers and its commitment to improve specialist teaching.

The LMS responded to a consultation by the Quality Assurance Agency for Higher Education on benchmarking. The Society's Education Committee was positive about the consultation document saying that mathematics departments have found the original benchmark statement generally helpful in clarifying the special nature and circumstances of mathematics teaching. It said that as the new statement is essentially a fine-tuning of the document for these purposes, it is fully supported by the LMS.

Caroline Davis
Mathematics Policy and Promotion Officer

IMU NEWS

ICM 2006 The proceedings and videos are now available on the International Congress of Mathematicians website (www.icm2006.org).

ICM 2010 The International Congress of Mathematicians 2010 Program Committee is going to meet in early October to define the program structure of the International Congress to take place in Hyderabad in August 2010. If you have suggestions for the PC please write to Hendrik Lenstra, the PC Chair (hwlicm@math.leidenuniv.nl) immediately. See also www.mathunion.org/Publications/CircularLetters/2007-03.pdf for further information.

ICME 11 The International Congress on Mathematical Education is held every four years under the auspices of the International Commission on Mathematical Instruction (ICMI). The 11th International Congress on Mathematics Education will be held in Monterey, Mexico, 6-13 July 2008. For further information go to http://icme11.org/.

The above items are taken from the 25th issue of the IMU electronic newsletter IMU Net (see www.mathunion.org/Publications/Newsletter).

INTEGRABLE DAY

A half-day workshop on *Integrable Systems* will be held at Loughborough University, Room KG 109 on 30 November. The speakers are:

- Roger Bielawski (Leeds) *Nahm's equations in geometry and Lie group theory*
- Maciej Dunajski (Cambridge) *Metricity of two-dimensional projective structures*
- Clare Dunning (Kent) *Recent results in the ODE/IM correspondence*
- Ian Marshall (Loughborough) *Poisson-Lie groups and Hill's equation*
- Maxim Pavlov (Moscow) *Integrable hydrodynamic reductions of nonlocal kinetic equation*

The meeting is part of a collaborative workshop series on *Classical and Quantum Integrability*, supported by the LMS, involving Edinburgh, Glasgow, Leeds and Loughborough Universities. Funds may be available to support the attendance of research students. Enquiries should be addressed to the organiser: A.P.Veselov@lboro.ac.uk or 01509 222866.

ISAAC NEWTON INSTITUTE BULLETIN

Short visits There is now no need to obtain a formal invitation to the Institute if you or your UK colleagues wish to attend a programme for just one or two days. You do not even need to warn us in advance that you will be coming, though a brief email to info@newton.cam.ac.uk beforehand telling us when you intend to arrive will help us to provide you with some facilities. Visits lasting more than two days still require an invitation. Full details can be found on the website.

Programme announcements The following new programmes have now been confirmed:

- *Non-abelian fundamental groups in arithmetic geometry* (20 July–December 2009)
- *Dynamics of discs and planets* (12 August – 18 December 2009)

Workshop announcements The following workshops have now been finalized:

- *Zeros of graph polynomials* (21–25 January 2008)
- *High dimensional statistics in biology* (31 March–4 April 2008)

Invited participants The Newton Institute strongly encourages its long-term participants from overseas to visit other UK institutions during their stay. We will pay the travel costs (but not accommodation etc) for such visits on request. Do please alert the organizers of your local seminar series to this possibility, and direct them to the web page listing those participants who are interested in receiving invitations: www.newton.cam.ac.uk/programmes/Speakers.html. Complete lists of invited participants can be found on each programme's own web page.

Junior Membership The Institute aims to maximize the opportunities it offers to early career researchers, through our Junior Membership scheme. To be eligible for Junior Membership you must be a Research Student or within five years of having received a PhD (with appropriate allowance for career breaks), and you must work or study in a UK University, academic institution or R&D group in industry or commerce. Junior members may apply for special grants to allow them to attend workshops, conferences and summer schools.

Further details are available at www.newton.cam.ac.uk.

VISIT OF PROFESSOR P.I. PLOTNIKOV

From 1 November 2007 for eight months, Professor P.I. Plotnikov, Corresponding Member of the Russian Academy of Sciences, will visit the Department of Mathematical Sciences, University of Bath, as Esther Parkin Visiting Professor. For further information contact J.F. Toland (jft@maths.bath.ac.uk).

LONDON MATHEMATICAL SOCIETY

MARY CARTWRIGHT MEETING

Friday 8 February 2008, 4.30 pm

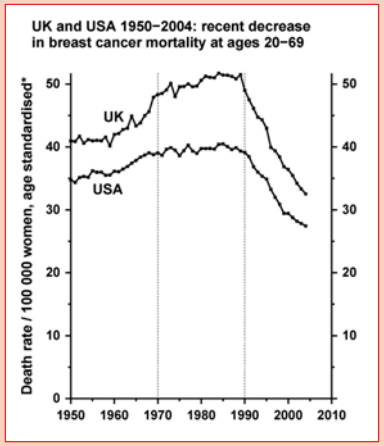
Oxford University Museum of Natural History
Parks Road, Oxford OX1

Mathematics of medicine: breast cancer treatment and prevention

Opening of Meeting

Sir Richard Peto, FRS (Oxford)
and
Valerie Beral, FRS (Oxford) Mary Cartwright Lecture

Valerie Beral and Richard Peto will describe worldwide evidence on the causes and treatment of breast cancer. The evidence comes from large-scale collaborations, where hundreds of researchers from around the world meet regularly in Oxford and contribute, for central review and analysis, information on hundreds of thousands of women with breast cancer. The findings from these international collaborations have changed clinical practice over the last two decades. Consequently, large reductions in mortality from breast cancer are being seen.



There will be tea before the meeting from 4 pm.

A reception and dinner will be held after the meeting.
Contact Susan Oakes (susan.oakes@lms.ac.uk) for further information.

There are limited funds available to contribute in part to the expenses of members of the Society or research students to attend the meeting.
Contact Isabelle Robinson (isabelle.robinson@lms.ac.uk) for further information.

NEW SCALING LIMITS

A conference on *New scaling limits and other recent developments in probability* will be held at the University of Warwick from Monday 31 March to Friday 4 April 2008. This conference revives a tradition of approximately annual UK probability meetings. Its major theme will be the topic of new scaling limits in probability including Schramm-Loewner evolution, random matrices, coagulation and fragmentation, and SPDE. The highlight of the workshop will be the following four minicourses, each of three lectures:

- Jean Bertoin (Paris) *Coalescence and stochastic flows of bridges*
- Franco Flandoli (Stockholm) *SPDEs in fluid dynamics*
- Kurt Johansson (Pisa) *Scaling limits in random matrix theory and related models*
- Scott Sheffield (New York) *Random geometry and the Schramm-Loewner evolution*

The scope of the conference will not be limited to these themes: invited speakers will describe work in other recent developments in probability. For further details and registration see: www2.warwick.ac.uk/fac/sci/statistics/paw/scaling-workshop.

PROBABILITY AND GEOMETRY IN HIGH DIMENSIONS

The annual workshop of the programme on *Phenomena in High Dimensions* will take place at the Postgraduate Statistics Centre at Lancaster University from 14–19 September 2008. The main speakers will include Professors Keith Ball (UCL), Marianna Csörnyei (UCL), Imre Leader (Cambridge) and Boguslaw Zegarlinski (Imperial). There will also be contributions from participants, particularly researchers at the start of their careers. The PhD research training network is supported by EC grant MRTN-CT-2004-511953. For further information, please contact Dr Bev Abram (b.abram@lancaster.ac.uk).

PANDA

A PANDA (Pattern Formation, Nonlinear Dynamics and Applications) meeting on *Patterns in Optics* will be held on Thursday 29 November in the Department of Mathematics, University of Surrey. The two invited lectures will be:

- Dmitry Skryabin (Bath) *New soliton effects in fiber optics*
- Gian-Luca Oppo (Strathclyde) *Turing patterns, control, and localised spots in optics and chemistry*

Contributed research talks follow in the afternoon. If you would like to speak please email Rebecca Hoyle (r.hoyle@surrey.ac.uk) with a title. Preference will be given to contributions in the area of optics, but talks on other PANDA topics are also welcome. Postdocs and research students are warmly encouraged to attend, especially as speakers, and will be given preference in financial support.

Further details, including programme and travel information will be posted at www.maths.surrey.ac.uk/personal/st/R.Hoyle/panda/ as they become available. For further information contact Rebecca Hoyle (r.hoyle@surrey.ac.uk). The meeting is supported by an LMS Scheme 3 grant.

LMS-GRESHAM COLLEGE LECTURES

The LMS and Gresham College have agreed to extend their series of annual lectures for a further three years. The collaboration has already resulted in two lectures, aimed at a general audience. This year, Professor Timothy Gowers spoke on *Multiplying and dividing whole numbers: why it is more difficult than you might think*. Next year, Professor Philip Maini will deliver a lecture entitled *Cancer can give you Maths!* at Gresham College on 1 May 2008. In view of the high demand for the lectures, Philip's lecture will be given twice, at 1 pm and 6 pm (www.gresham.ac.uk).

RANDOM MATRIX THEORY

The third Brunel Workshop on *Random Matrix Theory* will be held at Brunel University, West London from 17–18 December. The workshop provides a venue for regular meetings bringing together the UK RMT community and international guests to discuss new developments in RMT and their applications. This year's topics will include: *Riemann-Hilbert Problems and Asymptotics of Orthogonal Polynomials*, *Integrability and Spin Chains*, *Large Deviations of Extreme Eigenvalues and Matrix Integrals*. Invited speakers include:

- Oriol Bohigas (Paris XI)
- Tom Clays (Brunel)
- David Dean (Toulouse)
- Thomas Guhr (Duisburg-Essen)
- Alexander Its (Brunel/Purdue)
- Romuald Janik (Krakow)
- Eugene Kanzieper (Holon)
- Jon Keating (Bristol)
- Arno Kuijlaars (Leuven)
- Charlotte Kristjansen (Copenhagen)
- Francesco Mezzadri (Bristol)
- Gregory Schehr (Paris XI)
- Eugene Strahov (Jerusalem)
- Martin Zirnbauer (Cologne)

This workshop is supported by the LMS, and funding is available to support participation by junior researchers. A poster session is open to all participants. For further information including contact details of the organisers please visit our web page: www.brunel.ac.uk/about/acad/siscm/maths/events/ranwshop.

BELFAST FUNCTIONAL ANALYSIS DAY 2007

Since 1998 there has been an annual meeting on Functional Analysis at Queen's University Belfast. This tenth edition will take place on Saturday 1 December in the usual format. The main speaker is Professor Thierry Giordano (Ottawa University) on *Topological Orbit Equivalence: New Developments*. All details are available on the BFAD website at www.qub.ac.uk/bfad or from Dr Martin Mathieu by sending an e-mail to m.m@qub.ac.uk.

The support the meeting receives from the London Mathematical Society is gratefully acknowledged.

ECMI 2008

The biennial conference of the European Consortium for Mathematics in Industry (ECMI) which will be held at University College London from 30 June – 4 July 2008. The plenary talks will cover a wide range of applied mathematical topics and there will be a strong industrial presence particularly from the financial district in the City of London. Highlighted themes of the meeting are Socio-economic interactions, Medicine, Sport and Leisure, Uncertainty and Risk, Optimisation and Control as well as more traditional industrial sectors. The keynote speakers are:

- Andrea Bertozzi (University of California Los Angeles)
- Benoit Desjardins (Ecole Normale Supérieure, Paris)
- Manuel Doblare (Universidad de Zaragoza)
- Ioannis Karatzas (Columbia University)
- Miguel Moscoso (Universidad Carlos III de Madrid)
- Colin Please (University of Southampton)
- Yongji Tan (Fudan University, Shanghai)
- Jonathan Tawn (Lancaster University)
- Nick Trefethen (University of Oxford)

The Alan Tayler Lecture *Mathematical problems in oil pipelining* will be given by Mario Primicerio (Università degli Studi di Firenze). The after-dinner speaker will be Jacqueline McGlade (Executive Director, European Environment Agency). For further information visit: www.ecmi2008.org.

LMS POPULAR LECTURES

This year's LMS Popular Lectures were given by Dr Hinke Osinga (University of Bristol) and Dr Stephen Huggett (University of Plymouth). They were held at the Institute of Education, London on 12 July and at the University of Birmingham on 18 September.

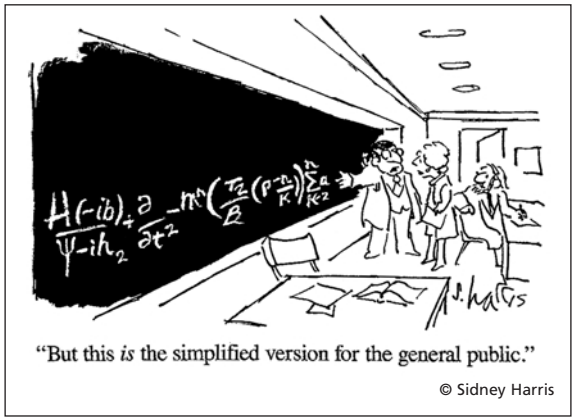
Dr Hinke Osinga's lecture *Chaos and Crochet* gave a tour through the weird and wonderful world of chaotic systems. Starting from the classic double-pendulum example and moving on to the more unusual occurrence of chaotic systems in kayaking holidays the audience were introduced to the concepts of stable manifolds and the Lorenz system for weather prediction. These ideas were physically brought to life through the medium of crochet, Dr Osinga's own hand-made model of the two-dimensional stable manifold associated with the Lorenz system being displayed throughout the evening.

Dr Stephen Huggett's lecture, simply entitled *Knots*, gave an introduction to some of the techniques of one of topology's most intriguing fields of study. Describing the basic concepts of the Reidermeister moves, crossing numbers and the Jones polynomial, Dr Huggett was able not only to show the non-specialist audience a sample of the Knot theorist's arsenal, but was even able to give some of the open problems in the area.

The lectures at Birmingham were attended by approximately 170 people, the majority being formed by groups from local schools. A number of positive comments were voiced after the lectures with all of the audience seeming to enjoy the lectures.

Ben Fairbairn
University of Birmingham

Editorial note: The lectures were recorded for subsequent release on DVD which will be available from the LMS: a useful purchase for school and university mathematics departments seeking resources that will stimulate their students.



"But this *is* the simplified version for the general public."

© Sidney Harris

REVIEWS

A history of mathematics: brief edition Victor J Katz (ed) Pearson Addison Wesley, 2004, 560 pp, £49.99. ISBN 0321161939.

Victor Katz's *A history of mathematics: an introduction* has been for some years the most comprehensive general textbook in the history of mathematics at undergraduate level. Its coverage runs from the mathematics of Mesopotamia in 1800 BC to the use of computers in the later twentieth century. It does not shy away from discussing mathematics as well as its history in some detail and inevitably it is long, with 856 pages in the second edition (1998). The new 'brief edition' is streamlined, updated, and more clearly organised, all of which are welcome improvements. Obviously some material has been cut, but this has generally been done by shortening rather than removing individual topics. Indeed in many ways the new edition offers a welcome expansion. There are now individual sections or chapters on Mesopotamian, Egyptian, Chinese, and Indian mathematics and it is encouraging to see modern schol-

cont'd

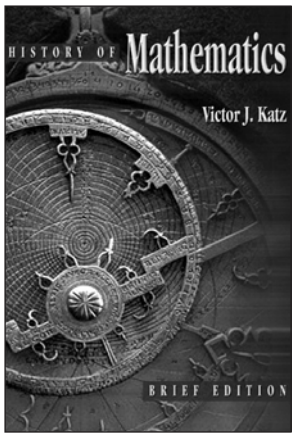
arship of a high standard on these regions making its way into a textbook. Similarly, the twentieth century, notoriously difficult to handle in a general book of this kind, has also been given more space. Between these chronological extremes the book is clearly organised by century and topic.

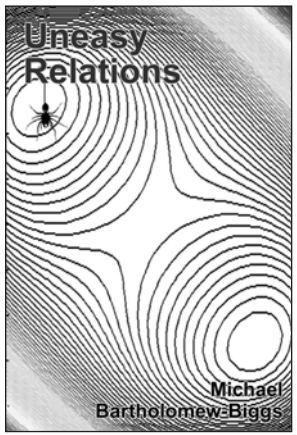
Much of the original text, of course, remains unchanged, which means that certain flaws from the previous edition have unfortunately also been retained. One of these is the lack of a good system of references: foreign titles are almost always translated into English (though Katz is not entirely consistent in this), which makes it difficult at times to seek out the originals; secondary sources are listed at the end of each chapter, but, in a disturbing separation of research from author, material that has been drawn from them within the chapter has not been attributed; and quotations lack page references or the name of the translator. It is not easy, therefore, to pursue further lines of research using this book as a starting point.

More seriously, Katz has translated much of the mathematics he discusses into modern mathematical language. This was a common enough thing to do even twenty years ago, but there is now a growing understanding that such translations can too easily obscure the real mathematical thinking of the past. I have seen more than one student who relied on Katz's explanations tumble into the pitfall of believing, for example, that the asymptotes of Fermat's hyperbola (page 291) were *x*- and *y*-axes, which for Fermat they certainly never were.

Unfortunately, it would be impossible to eliminate such anachronisms without writing a completely new text, which would probably require several years of work. In the meantime we can be grateful instead for the enormous labour and distillation of ideas that Katz has already put into this new and useful brief edition.

Jackie Stedall
The Queen's College, Oxford





Uneasy Relations by Michael Bartholomew-Biggs, Hearing Eye, 24 pp, £3 (available for £3.50 including postage from Hearing Eye, Box 1, 99 Torriano Avenue, London NW5 2RX).

In his chapbook *Uneasy Relations* the mathematician and poet Michael Bartholomew-Biggs seems often to relish the insoluble. He poses questions – there are many of them in these poems – that are within the field of mathematics, questions that are unanswerable, scary and fascinating, and which have been asked many times, but which he would have us use to consider our lives. This is the case in *Stagnation: When will it converge?/Each false step, like Poe's raven,/cackles 'Nevermore!'* or *Trust Region: How far dare I go?/I've a hunch what to expect/but I might be wrong;* in *Auxiliaries* when he touches on how we may be able to let ourselves off the hook: *Slack Variables* and *Lagrange multipliers* and in *Steepest Descent* when hill-walking is discussed in scientific terms in the notes and is a metaphor in the poem.

Every poem has notes. I found them clear with inventive asides such as relating 'phenomena' to the dull note of the chimes of Saint Mary Woolnoth (*Two cultures/Teaching practice*). Many of us who don't know much about mathematics or who aren't portfolio-savvy must be glad of explanations of terms such as 'stagnation' and 'Trust Region'.

Regarding the poem *Two Cultures*, which compares poetry and mathematics, it's curious that Barthomew-Biggs says, *Poets show, don't tell*. This is holy writ in many poetry workshops but there are some who find the advice too narrow. All through the book there is telling – there's *Investment Strategy: Equivalent risks:/ getting too much profit/or making too much* and *Limited precision: Near-parallel lines,/ drawn with thick pencil, will cross./But where? Exactly.* which may be said to bear some relation to Dogen's *'Waka on Zen Sitting'* in its didactic tone: *Scarecrow in the hillock/Paddy-field –/How unaware! How useful!*

The spare and unpretentious character of the writing in all the poems (and the notes) in *Uneasy Relations* reminds me of Japanese writing and it seems natural that the poet should have most of the poems in the haiku form.

This year, *A Disappearing Number*, a performance which is centred around the story of the relationship between mathematicians G.H. Hardy and Srinivasa Ramanujan, played at The Barbican. Simon McBurney who conceived and directed it speaks of theatre and mathematics as being 'acts of the imagination' and so it is with poetry. Michael Bartholomew-Biggs would surely be in agreement with this and familiar too with Hardy's statement, 'Mathematicians are only makers of patterns, like poets or painters'.

Diana Pooley

Michael Bartholomew-Biggs is a research mathematician in the aircraft industry and in higher education and began writing poetry in the late 1980s. Diana Pooley is a poet who lives in London.

INSTITUT DES HAUTES ÉTUDES SCIENTIFIQUES

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

Created in 1958, IHÉS is an international research institute, registered as a Foundation in the public interest since 1980, the purpose of which is to support and develop theoretical research in the mathematical sciences, physics and more recently, in molecular biology. IHÉS is financed by different institutions, such as: the French Research Ministry, several European research agencies among which the Engineering and Physical Sciences Research Council (EPSRC), the European Commission, the US National Science Foundation, and also some private foundations and companies. The EPSRC has now been supporting IHÉS for a number of years. In doing so, its aim is to foster closer links between British and French mathematical research centres.

British mathematicians and theoretical physicists are invited to apply to IHÉS for visits (for more information, consult the website www.ihes.fr). They can use their stay to work with researchers from other research groups in the Paris area.

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

WILLIAM HODGE FELLOWSHIPS 2008/2009

In 2000 the EPSRC committee reviewing IHÉS suggested that the EPSRC and IHÉS offer each year two one-year fellowships bearing the name of Sir William Hodge, the eminent British mathematician. The fellowships enable outstanding young mathematicians and theoretical physicists to spend time at IHÉS. At the last review in 2005, it was suggested that fellows be encouraged to have a UK-based mentor and be involved with the UK mathematics community.

Applicants must have a PhD in the Mathematical Sciences or Theoretical Physics obtained in 2006, 2007 or in early 2008. One of the two grants will be awarded to an applicant who has spent at least the preceding nine months at a UK academic institution or has just graduated from a UK institution. Applications will be reviewed and selection made based on the sole criterion of excellence in research by the IHÉS Scientific Committee in December 2007. The Committee consists of the Permanent Professors, the Director, and the external members (the list can be found above). Fellowships would start in the autumn of 2008.

Applications should be sent through the IHÉS website (www.ihes.fr) and should include: the application form, a cover letter, a CV, a publication list, a research project, two or three letters of recommendation, and a proposal for a UK mentor. Deadline for applications: **22 November 2007**.

For more information contact: IHÉS – 35, route de Chartres, F-91440 Bures-sur-Yvette (France), tel: +33 1 6092 6605, fax: +33 1 6092 6609, email: hodge@ihes.fr, website: www.ihes.fr.

ETH
Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

Postdoctoral positions
in the Department of Mathematics
for the academic year 2008-2009

The Department of Mathematics at ETH Zürich invites applications for two one to two years postdoctoral positions with term running from September 2008 till August 2009 or 2010. Preference will be given to applicants no more than 5 years past the Ph.D. In accordance with the commitment of the ETH Zürich to increasing the number of women in academic positions, female scientists are specifically encouraged to apply. To be assured of full consideration, applications should be received by November 30, 2007, since the selection process will begin shortly thereafter. Later applications are nevertheless welcome and will be considered for any positions remaining open at the time they are received.

To apply, send a cover letter together with
- a curriculum vitae specifying citizenship, year of birth, academic degrees with institution and year awarded and, for the doctoral degree, the dissertation title, year of graduation and the name of the dissertation supervisor.
- a list of publications.
- a survey of past research activities and a description of current research interests.

You should also arrange to have three letters of recommendation sent directly to us. It is very much in your interest to have these letters of recommendation arrive by the time the selection process begins.

Applications and letters of recommendation should be sent to:
Search Committee
Department of Mathematics
ETH Zentrum/HG G33.3
CH-8092 Zürich/Switzerland

ISAAC NEWTON INSTITUTE FOR MATHEMATICAL SCIENCES

COMBINATORIAL IDENTITIES AND THEIR APPLICATIONS IN STATISTICAL MECHANICS

7–11 April 2008

in association with the Newton Institute programme entitled
Combinatorics and Statistical Mechanics (14 January to 4 July 2008)

Workshop organisers: Abdelmalek Abdesselam (University of Virginia) and Pierre Leroux (Université du Québec à Montréal).

Theme of workshop: The objective is to bring together combinatorialists, computer scientists, mathematical physicists and probabilists, to share their expertise regarding such combinatorial identities, with the hope of fostering progress in the area through cross-fertilization. A preliminary list of topics of interest for the workshop is:

- Identities related to classes of 1-2- or 3-connected graphs and their relations with the Mayer or viral expansion and the Legendre transform, applications of the dissymmetry theorem for trees, as well as variants of the exponential formulae with applications to the Potts model
- Forest and tree-sum identities in the theory of cluster and Mayer expansions in rigorous statistical mechanics and quantum field theory
- Graph invariants arising from Mayer and Ree-Hoover expansions
- Functional and differential equations for classes of combinatorial structures, for example maps, permutations, rooted trees, Feynman diagrams, related to physics
- Generalizations and applications of Kirchhoff's matrix-tree theorem, such as the parametric representation of Feynman diagrams in commutative and non-commutative quantum field theory, the Pfaffian-tree theorem, combinatorial applications of Grassmann-Berezin integration

Keynote speakers will include: Abdelmalek Abdesselam (UVa, Charlottesville), David Brydges (UBC, Vancouver), Christian Borgs (Microsoft Research, Seattle), Jennifer Chayes (Microsoft Research, Seattle), Roman Kotecky (Warwick and Prague), Christian Krattenthaler (Universität Wien), Pierre Leroux (UQAM, Montréal), Aldo Procacci (UFMG, Belo Horizonte), Vincent Rivasseau (Paris-Sud), Alan Sokal (NYU & UCL), Alexander Varchenko (UNC, Chapel Hill), Xavier Viennot (Bordeaux).

Further information and application forms are available from the web at: www.newton.cam.ac.uk/programmes/CSM/csmw03.html. Completed application forms should be sent to Tracey Andrew, Programme & Conference Secretary, Isaac Newton Institute, 20 Clarkson Road, Cambridge CB3 0EH or via email to: t.andrew@newton.cam.ac.uk.

Closing date for the receipt of applications is **30 November 2007**.

ISAAC NEWTON INSTITUTE FOR MATHEMATICAL SCIENCES

ANDERSON LOCALIZATION TRANSITION
Introductory Training Course

14–25 July 2008

in association with the Newton Institute programme entitled
Mathematics and Physics of Anderson Localization: 50 Years After (14 July to 19 December 2008)

Organiser: Martin Zirnbauer (Cologne)

Theme of training course: When a single-particle quantum Hamiltonian system is subjected to a disorder potential, it is expected on physical grounds that a transition from localised to extended energy eigenstates takes place as a function of the disorder strength. Such a transition should be accompanied by a characteristic change in the energy spectrum: if the disorder is large enough for Anderson localisation to occur, the random Schrödinger operator is known to have dense point spectrum; on the other hand, if the disorder is weak and the space dimension larger than $d = 2$, then one expects the existence of absolutely continuous spectrum.

Giving a mathematical proof of this conjectured scenario, and clarifying the nature of the spectrum and the eigenfunctions at the transition point or in $d = 2$, remains an important and outstanding problem of mathematical physics. Many features of the scenario are believed to extend to a broader class of quantum systems including, most prominently, those exhibiting transitions of Quantum Hall type.

This training course is mainly directed at researchers in early stages of their careers. Its aim is to provide the participants with an introduction to the subject, by exposing them to ideas, terminology and analytical techniques of the rigorous as well as the heuristic kind. Methods used in the study of Anderson localisation by mathematicians and by theoretical physicists will be reviewed by experts from both communities. Reviewing the state of the art for both disciplines will hopefully help to bridge the existing language gap between the communities and create an environment conducive to fruitful collaboration between physicists and mathematicians during the rest of the program.

Tentative list of topics to be covered:

- *phenomenology of Anderson localisation* (T. Spencer)
- *introduction to the spectral theory of random Schrödinger operators* (L. Pastur)
- *introduction to supermatrix techniques and the nonlinear σ-model* (Y. Fyodorov)
- *rigorous techniques for 1D and quasi 1D systems* (I. Goldsheid)
- *rigorous methods in the statistical mechanics of phase transitions* (D. Brydges)
- *critical phenomena in two-dimensional disordered systems* (A. Ludwig)

Further information and application forms are available from the web at: www.newton.cam.ac.uk/programmes/MPA/mpaw01.html. Completed application forms should be sent to Tracey Andrew, Programme & Conference Secretary, Isaac Newton Institute, 20 Clarkson Road, Cambridge CB3 0EH or via email to: t.andrew@newton.cam.ac.uk.

Closing date for the receipt of applications is **31 March 2008**.

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/newsletter/calendar.html).

NOVEMBER 2007

1-5 Recent Advances in Functional and Delay Differential Equations Workshop, Halifax, Canada (361)
7 4000 Years of Numbers, Gresham College Lectures, London (362)
9 Edinburgh Mathematical Society Meeting, Glasgow (363)
21-22 Mathematical Thinking Workshop, Nottingham (362)
21-23 COMPUTAT, Cuba (363)
23 LMS AGM, London (364)
29 Pattern Formation, Nonlinear Dynamics and Applications Meeting, Surrey (364)
30 Integrable Systems Workshop, Loughborough (364)

DECEMBER 2007

1 Belfast Functional Analysis Day, Queen's University Belfast (364)
6 Yggdrasil: Reconstructing the Tree of Life, LMS Spitalfields Day, INI, Cambridge (364)
7 Edinburgh Mathematical Society Meeting, Strathclyde (363)
10-14 Integrability and the Gauge/String Correspondence INI Workshop, Cambridge (358)
15-17 Recent Advances in Mathematics and its Applications International Symposium, Calcutta (360)
17-18 Random Matrix Theory Workshop, Brunel University (364)
17-21 Future Directions in Phylogenetic Methods and Models INI Workshop, Cambridge (358)
18-20 Cryptography and Coding Conference, Cirencester (362)

JANUARY 2008

7-11 Contemporary Frontiers in High-Dimensional Statistical Data Analysis, INI Workshop, Cambridge (359)
7-11 Algebraic and Symplectic Geometry UK-Japan Winter School, Warwick (362)
16 Squaring the Circle and Other Impossibilities, Gresham College Lectures, London (362)
18 Edinburgh Mathematical Society Meeting, Edinburgh (363)
21-25 Zeros of Graph Polynomials INI Workshop, Cambridge (361)

FEBRUARY 2008

6 A Millennium of Mathematical Puzzles, Gresham College Lectures, London (362)
8 LMS Mary Cartwright Lecture, Oxford (364)
15 Edinburgh Mathematical Society Anniversary Meeting, Edinburgh (363)
27 From Hilbert's Problems to the Future, Gresham College Lectures, London (362)

MARCH 2008

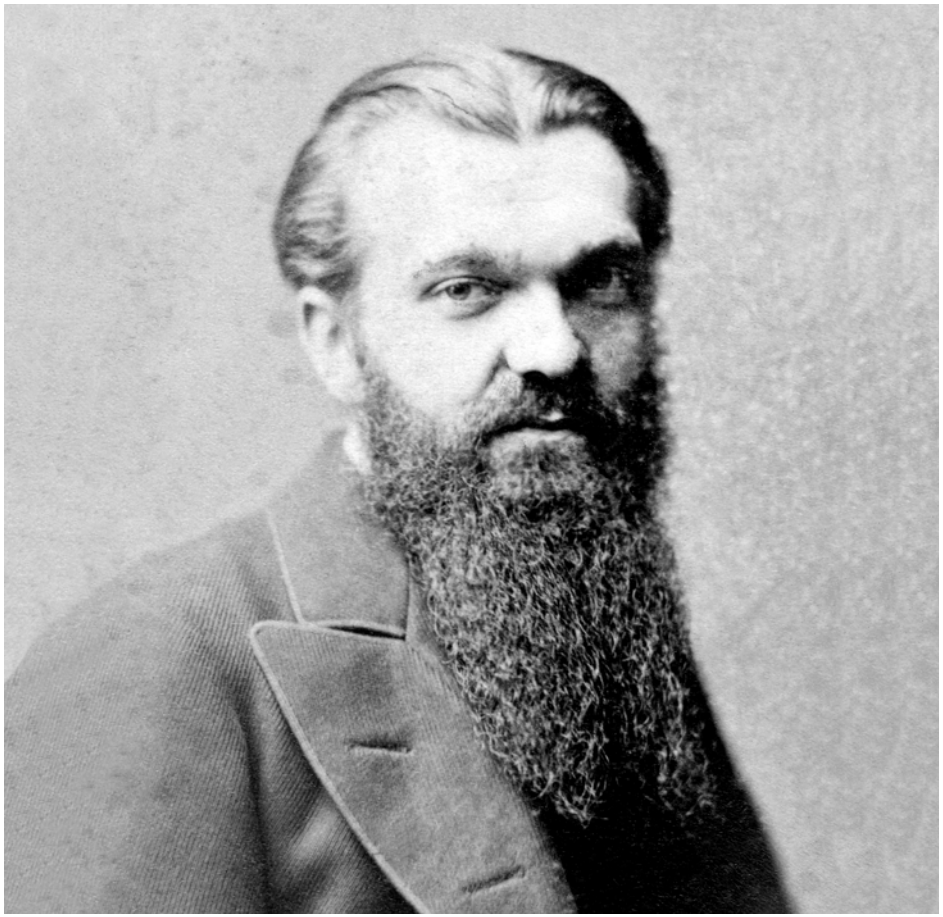
9-12 Mathematics and its Applications in Information Technology, Lahore, Pakistan (362)
14 Edinburgh Mathematical Society Meeting, Dundee (363)
25-28 BMC, York
25-28 Markov-Chain Monte Carlo Methods INI Workshop, Cambridge (363)
31 LMS Northern Regional Meeting, Manchester
31-4 Apr BAMC, Manchester
31-4 Apr High Dimensional Statistics in Biology INI Workshop, Cambridge (363)
31-4 Apr New Scaling Limits and Other Recent Developments in Probability Conference, Warwick University (364)

APRIL 2008

7-11 LMS Invited Lectures, A. Okounkov, Imperial College London (364)

W.K. CLIFFORD

LMS member 1866-1878



William Kingdon Clifford, MA, FRS
Fellow of Trinity College, Cambridge
Professor of Applied Mathematics and Mechanics, University College London
Clifford studied non-euclidean geometry arguing that energy and matter are simply different types of curvature of space. He introduced what is now called a Clifford algebra which generalises Grassmann's exterior algebra.