THE LONDON MATHEMATICAL SOCIETY NEWSLETTER

No. 315 **May 2003**

FORTHCOMING SOCIETY MEETINGS

Wednesday 14 May 2003 – Coventry
Midlands Regional Meeting
Uncertainty Modelling
Friday 20 June 2003 – London
J.C. Rickard, M.J. Taylor (Fröhlich Lecture)
Tuesday 22 July 2003 – Edinburgh
Hodge Centenary Meeting – Joint Meeting with the Edinburgh Mathematical Society
24 October 2003 - Southampton
South West and South Wales Regional Meeting
Nonlinear Dynamics
21 November 2003 - London
L.C.G. Rogers, M.H.A. Davis (Naylor Lecture)

COUNCIL DIARY
21 March 2003

The first item of business at the March meeting of Council was a review of the Retreat, which had taken place two weeks previously. Executive Secretary Peter Cooper presented a report, which summarised the Retreat's conclusions and proposed various actions emerging from these. Council discussed the report's proposals, and who best should carry them forward. There will be a report in the next *Newsletter* laying these actions out.

The Finance Committee reported on its meeting in Cambridge just before the Retreat. Equities are not performing well at the moment; our own investments are spot on the index, but that does not indicate a particularly good performance. We shall consult our investment advisors further, and also our new investment subcommittee, on a suggestion that we should move more into bonds. A new scheme of provisional planning estimates will help our budgeting; a planning estimate will include a cost weighted by the probability that it will actually be incurred (although the cost will appear with a weighting of 1 in the separate spending limit). This will help us to budget more accurately our expenditure on schemes such as the earmarked Daphne Jackson Fellowship which the Society sponsors. (We have yet to pay out on that particular scheme, for although some excellent candidates have come forward, other offers have caused them all to withdraw before the fellowship could be awarded; still we hope that the existence of our fellowship has had some facilitating effect.)

Council approved a large number of new members, more than half of them associate members, a clear consequence of EPSRC's new scheme to fund PhD students as members of learned societies in return for career tracking data.

Our Publisher, Susan Hezlet, brought us up to date on the situation with subscription agents RoweCom who have now filed for bankruptcy both in the US and in Europe. It is a relief to find that our losses arising from this should not be as great as we initially feared, though a significant amount of income is still at stake.

Council noted concerns from the Publications Committee about the rights of authors to post versions of their articles on the web, after acceptance by the Society; the replacement of paper offprints by pdf files is likely to exacerbate the problems caused for publishers by

authors posting post-acceptance versions. Members will be asked (see article on p.?? of this *Newsletter*) to comment on the Committee's proposed policy.

Chris Lance reported on his visit to Berlingen, Switzerland, at the very end of January, for a 'brainstorming' meeting on digitisation. There is significant interest in digitisation in Western Europe, with serious participation from most major countries - but currently not the UK - and an application is being put together for Framework 6 funding. The significance of this application has grown since the NSF decided not to fund a big digitisation project in the US. Rolf Jeltsch at the EMS had asked the LMS to support a Framework 6 application, and Council agreed in principle to do this. The Society will continue to negotiate on the digitisation of the historic volumes of its own journals.

Peter Cooper reported on progress of discussions of the International Review of Mathematics with EPSRC. An advertisement has now been issued for a Scientific Secretary to support the Review. A report on the progress of the Review is produced in this *Newsletter* (see article page ?). In addition there will be a website for the Review (now operating at www.cms.ac.uk/irm). Jean-Pierre Bourguignon will chair the International Panel.

The General Secretary Norman Biggs presented a brief report on the meeting on Mathematics for e-science held at De Morgan House on 18 March. It had been a very positive brainstorming session, and suggestions for projects into the programme from the mathematics side were already emerging. Norman stressed that e-science money really was 'new' money. It was not being top-sliced from existing EPSRC programmes, and it was quite a substantial amount. To date, a large proportion of e-science money coming into EPSRC is being channelled through its computing science programme; but Council considers that mathematics underpins this type of work, and that we need to make a case for some of the money to be channelled directly through the mathematics programme. This is an issue which we shall raise with EPSRC.

Sarah Rees

INTERNATIONAL REVIEW OF MATHEMATICS
Report 3

The Steering Group for the International Review of Mathematics met on 1 April. It discussed progress with the selection of the International Panel – subject to one or two final negotiations it is hoped to have announced the full Panel (of 12 plus the Chair, Jean-Pierre Bourguignon) before the end of April.

The date of the Review was agreed as Monday 1 to Saturday 6 December 2003. The Steering Group has identified eight potential regions for visits by the International Panel, and approaches are being made to an appropriate venue in each region. The visits will involve presentations on highlights of mathematics research and meetings with both academic staff and younger postgraduate and postdoctoral students. The Steering Group is keen to ensure that the International Panel sees top-quality research wherever and however it is carried out, and will discuss with the selected venues how to achieve this.

Martin Taylor and Tim Pedley gave presentations on progress with the Review at the BMC and BAMC respectively. There was a good deal of interest, and the points raised will be taken back to the Steering Group meeting in May. Bernard Silverman will be making a similar presentation to the Committee of Professors of Statistics before the Steering Group meets.
The website for the International Review is now operating at www.cms.ac.uk/irm/. This contains up-to-date information. The names of the Panel members and Review venues will

be announced there as soon as they are confirmed. The site also allows comments to be sent to the Review at irm@lms.ac.uk.

COMPOSITIO MATHEMATICA

From January 2004, the journal *Compositio Mathematica* will be published by the London Mathematical Society on behalf of its owners, the Foundation Compositio Mathematica. The Foundation is based in The Netherlands and its Board members are all mathematicians. The journal goes back to 1934 when L.E.J. Brouwer, expelled from the editorial board of *Mathematische Annalen* by Hilbert, founded his own journal. The aim of the journal is to publish first-class mathematical research papers and during the last 25 years it has earned an excellent name. By tradition, the journal focuses on papers in the mainstream of pure mathematics and includes the fields of algebra, number theory, topology, algebraic and analytic geometry and geometric analysis.

Through the years the journal has been published by Dutch publishers, and in recent years Kluwer Academic Publishers took care of this, though the ownership of the journal remained with the Foundation. Alarmed by rising prices the Foundation has changed policy and now the LMS will be managing the journal on its behalf but without taking on ownership of the journal. There will be no change to the editorial policy or to the extent of the mathematics published in the journal, but there will be a change of format to a small A4 size with about 256 pages per issue. It will be published in one volume of six issues per year.

Prices for subscriptions to the 2004 volume are to be a third less than those for the 2003 volumes. The prices are €1200, $1200 or £750 for the full subscription to print plus electronic versions. The intention is that this price reduction is not just a one-off introductory offer but a permanent change to a lower pricing policy. The journal will be distributed via Cambridge University Press.

With this notice, we hope to persuade you to pass on the information to your library committees and to support this move to lower prices and learned-society publishing by taking up new subscriptions. We have agreed to buy the electronic archive of papers dating back to 1997 from Kluwer and these will be made available to subscribers from January 2005. This will provide continuity for libraries that have cancelled their subscriptions in recent years.

Mathematicians are also encouraged to submit good papers to the journal. Information about the aims and scope of the journal, the Editorial Board and the procedure for submission of papers can all be found via the Foundation's website (www.compositio.nl).

Gerard van der Geer
Managing Editor

LICENSING AND USE OF ELECTRONIC OFFPRINTS

The Society's policy on the posting of electronic pre-prints and final articles is in need of review. At a recent meeting of the Publications Committee, a new policy was proposed for our core journals *Proceedings, Journal* and *Bulletin* of the LMS:

1. Prior to acceptance of a paper by the Editors, authors may post versions of their papers up to and including the version that is accepted on the Math arXiv or anywhere else they wish.
2. Once the paper has been accepted, authors may not place post-acceptance versions of their paper on the arXiv, or any other publicly accessible site including their home page.

3. Authors will soon have the option of receiving a final PDF version of their paper as an alternative to paper off-prints, but the final PDF version must not be placed on an internet site. The purpose of providing final PDF is to give authors an alternative to printed off-prints for private circulation to fellow researchers, and not to disseminate the work in competition with the periodicals' own pages.
4. After publication, authors may post errata and addenda to the final paper, giving a reference or a link to the authorised version published by the Society.

We need to balance the Society's two aims for its publishing programme: to disseminate knowledge and to provide an income for the Society's other activities. If we permit the free dissemination of the published articles from authors' home pages and the Math arXiv, readers will act quite reasonably in using search engines to find the article on the free site if their library does not take a subscription. The consequence is an inevitable fall-off in subscriptions as libraries drop journals where much of the material is freely available through other sources.

However, we want to disseminate the work of our authors to as wide an audience as possible and to that end we have to try to keep the subscription price down in order to ensure that libraries can afford to take our journals. As the 'attrition rate' on subscription numbers continues, the Society's policy is not to counteract this with high price rises to ensure a steady income.

If we lose the income stream that passes from government via libraries to learned societies and on to scientific programmes, we will never recover that money. Government is unlikely to pass that money directly to research programmes; so the funding will simply dry up and not be replaced.

We hope the LMS membership will consider these matters carefully and we welcome comments on the proposed new policy.

Publications Committee

DONALD COXETER

Professor H.S.M. ‘Donald’ Coxeter, FRS, who was elected a member of the London Mathematical Society in 1933 and an Honorary Member in 1978, died on 31 March 2003, aged 96. He was a Fellow of the Royal Society of Canada and Companion of the Order of Canada.

Donald Coxeter joined the Department of Mathematics at the University of Toronto in 1936 and he spent the next 67 years actively engaged at the University. The soul and spirit of the geometry seminar there, he was described by many as the greatest living geometer; he was undoubtedly the world's best known geometer. He made contributions of fundamental importance to the theory of polytopes, non-Euclidean geometry, discrete groups, and combinatorial theory. He is best known for his introduction of what are now referred to as Coxeter groups. His name is attached to a number of mathematical concepts including the Coxeter diagram, Coxeter complex, Coxeter element, Coxeter graph, Coxeter number, and Coxeter system.

Donald was a most prolific writer. He had over 200 publications including several books. His work was influential not only in geometry but also in many other branches of mathematics. He cherished the connection of mathematics to music and arts, and was intimately involved in Escher's work.

Donald remained active to the end. In July 2002 he gave an invited address at the conference in honour of János Bolyai on Hyperbolic Geometry in Budapest, Hungary, and he had just completed the final touches on his last paper.

VISIT OF PROFESSOR R.A. KERMAN

Professor Ron Kerman (Brock University, Canada) will visit the School of Mathematics, Cardiff University, during June and July, supported by an LMS Scheme 2 grant. He will give talks at Birmingham, Kings College London and Sussex. For further information contact Professor W.D. Evans (EvansWD@cardiff.ac.uk).

VISIT OF PROFESSOR P. ZABREIKO

Professor Petr Zabreiko (Belarus State University, Minsk, Belarus) will be visiting the School of Mathematics, University of Bristol, from 4 - 18 May. Professor Zabreiko is an expert in nonlinear functional analysis and nonlinear integral equations. During his visit he will give talks at University of Bristol (6 May), University of Bath (9 May) and University of Swansea (16 May). His visit is funded by an LMS Scheme 2 grant. For further information contact Dr V. Moroz (V.Moroz@bristol.ac.uk).

VISIT OF PROFESSOR A. YU. ORLOV

Professor A.Yu. Orlov (Russian Academy of Sciences) will be visiting Brunel University supported by an LMS Scheme 2 grant. He will give talks at the Mathematics Institute, University of Warwick (28 May), the School of Mathematics, Bristol University (29 May) and the Department of Mathematical Sciences, Brunel University (6 June) on random matrices and their relations to symmetric functions, as well as on multivariate hypergeometric functions as tau functions of Kadomtsev-Petviashvili equation. For further information contact Professor Yan V. Fyodorov, Department of Mathematical Sciences, Brunel University, Uxbridge UB8 3PH (tel. 01895 203271; fax: 01895 203303; email: yan.fyodorov@brunel.ac.uk).

VISIT OF PROFESSOR G. McNINCH

Professor George McNinch (Notre Dame University, Indiana) will be visiting the University of Birmingham from 11 May until 1 June supported by an LMS Scheme 2 grant. He will be giving lectures at Birmingham University (15 May), Manchester University (20 May) and Imperial College London (29 May) on some of his recent work in the representation theory of algebraic groups. For further details contact Gerhard Roehrle, School of Mathematics and Statistics, University of Birmingham (tel: 0121 414 7374, fax: 0121 414 3389, email: ger@for.mat.bham.ac.uk).

VISIT OF PROFESSOR L. SALOFF-COSTE

Professor Laurent Saloff-Coste (Cornell) will be visiting Imperial College London from 15 - 30 May. His visit is supported by an LMS grant under Scheme 2. Professor Saloff-Coste will give talks in London (22 May), Cambridge (23 May) and Oxford (26 May). For further details contact Professor Grigoryan (a.grigoryan@ic.ac.uk).

VISIT OF PROFESSOR S.W. MARGOLIS

Professor Stuart Margolis (Bar Ilan University, Israel) will be visiting the University of Wales, Bangor, from 19 – 30 May supported by an LMS Scheme 2 grant. During his visit he will give the following three lectures:

- Wednesday 21 May at 11.15 am, York University *Inverse semigroup theoretic methods for embedding monoids in groups* (contact Professor John Fountain: jbf1@york.ac.uk)
- Thursday 22 May at 4 pm, Newcastle University *Inverse automata and inverse semigroup theoretic algorithms for subgroups of free and related groups* (contact Dr Sarah Rees: sarah.rees@ncl.ac.uk)
- Wednesday 28 May at 2 pm, University of Wales, Bangor *Some surprising undecidable problems for finite groups, graphs and other finite structures* (contact Dr Mark V. Lawson: mvlawson@informatics.bangor.ac.uk)

For further information contact Dr M.V. Lawson (mvlawson@informatics.bangor.ac.uk).

VISIT OF PROFESSOR A. PELCZYNSKI

Professor Aleksander Pelczynski (Warsaw University) will be visiting University College London supported by an LMS Scheme 2 grant. He will be lecturing in London, Oxford and Cambridge as follows:

- 8 May, London Analysis Seminar (contact Michael Ruzhansky: m.ruzhansky@imperial.ac.uk)
- 13 May, Oxford (contact Charles Batty: charles.batty@st-johns.oxford.ac.uk)
- 19 May, Cambridge (contact Ben Garling: djg1001@cus.cam.ac.uk).

For further information contact Professor D.G. Larman (d.larman@math.ucl.ac.uk).

ABEL PRIZE 2003

The Norwegian Academy of Science and Letters has awarded the first Abel Prize for outstanding scientific work in the field of mathematics to Professor Jean-Pierre Serre, Collège de France, Paris. The prize amount is NOK 6 million (about €750,000) and will be awarded on 3 June 2003 in Oslo, Norway. Additional information can be found on the web (www.abelprisen.no).

ROLLO DAVIDSON TRUST

The Trustees of the Rollo Davidson Trust have announced that they have awarded the Rollo Davidson Prize for 2003 to Alice Guionnet (Ecole Normale Supérieure de Lyon) in recognition of her achievements on particle systems and the relation between large deviations and large random matrices. Further details of the Rollo Davidson Trust may be found on the web (www.statslab.cam.ac.uk/Rollo/index.html).

NBFAS

A meeting of the North British Functional Analysis Seminar (NBFAS) will be held in the David Hume Tower, University of Edinburgh, from 2.30 pm Monday 26 May to 12 noon Tuesday 27 May. Talks will be by Professor Guyan Robertson (University of Newcastle, NSW, Australia) speaking on "Operator algebras associated with groups acing on buildings and their K-theory" and Professor Stephane Jaffard (Université de Paris XII, France) speaking on "How smooth is almost every function in a given Sobolev space?". The meeting is supported financially by the LMS and all are welcome to attend. For further information contact Dr Michael Dritschel, Newcastle University (M.A.Dritschel@ncl.ac.uk).

DIFFERENTIAL GEOMETRY DAY

A Yorkshire Differential Geometry Day will be held on Monday 19 May from 10:30 to 17:30 in the Department of Mathematics, University of Hull. This is a joint meeting organised by the geometry groups at the Universities of Hull, Leeds and York and forms part of a series which has received support from an LMS Scheme 3 grant. For the full programme and further information, contact Jurgen Berndt, Department of Mathematics, University of Hull, Hull HU6 7RX (tel: 01482 465149, email: J.Berndt@hull.ac.uk) or visit the website (www.hull.ac.uk/php/masjb/hgghull8pro.html).

READING ONE-DAY COMBINATORICS COLLOQUIUM

The annual Reading One-Day Combinatorics Colloquium will be held on Wednesday 14 May 2003. The programme will start at 10.30 am and finish at 5.30 pm. The list of speakers and titles is:

- N.L. Biggs (LSE) *Chromatic polynomials*
- J. van den Heuvel (LSE) *On the diameter of the transportation polytope*
- S. Noble (Brunel) *Graph labelling with constraint distance 2*
- D. Penman (Essex) *Paley graphs*
- R.G.E. Pinch (GCHQ) *PRIMES is in P*
- I.J. Siemons (UEA) *Group actions on simplicial complexes*
- A.G. Thomason (Cambridge) *Graph minors and pseudo-random graphs*
- D.J.A. Welsh (Oxford) *Approximate counting and quantum computing*
- P.R. Wild (Royal Holloway) *Threshold schemes with disenrolment*

Financial support from the British Combinatorics Committee and the University of Reading is gratefully acknowledged. Further information can be found on the website (www.rdg.ac.uk/AcaDepts/sm/wsm1/conferences.html).

GROUP THEORY AND COMBINATORICS

There will be a one-day meeting on Group Theory and Combinatorics in the School of Mathematics, University of East Anglia, Norwich, on Monday 16 June 2003. The meeting marks the retirement from UEA of Alan Camina, Honorary Professor in the School, and it is particularly hoped that many of Alan's friends and colleagues will be able to attend. The meeting is funded by the London Mathematical Society, and some funding is available to cover the expenses of graduate students.

The speakers are:

- Peter Cameron (Queen Mary, London)
- Rachel Camina (Cambridge)
- Cheryl Praeger (University of Western Australia, Perth)
- Bert Wehrfritz (Queen Mary, London)
- Alexandre Zalesskii (UEA, Norwich)

Talks will take place in the School of Mathematics from 9.30 am to 5.30 pm on Monday 16 June, and the meeting will be preceded by a dinner at a restaurant in Norwich on Sunday 15 June. Some accommodation is available in the Nelson Court Guest Suite on campus. This is limited and participants are advised to book it as soon as possible. Those wishing to use a local hotel or guest house can ask the organisers for recommendations.

Further details can be found on the webpage (www.mth.uea.ac.uk/~h120/alan.html). If you are interested in attending this meeting (and/or the dinner) contact one of the organisers: David Evans (d.evans@uea.ac.uk) or Johannes Siemons (j.siemons@uea.ac.uk).

DIOPHANTINE ANALYSIS, UNIFORM DISTRIBUTION AND APPLICATIONS

The Institute of Mathematics of the Academy of Sciences of Belarus and the University of York are organising an international conference on "Diophantine Analysis, Uniform Distribution and Applications" to be held from 25-29 August 2003 in Minsk, Belarus. Yuri Bilu (Bordeaux), Peter Bundschuh (Cologne), Yuri Nesterenko (Moscow) and Andrej Schinzel (Warsaw) have agreed to participate. The arrival and departure days are 24 August and 30 August respectively. The registration fee for the conference is US$50. Plenary lectures will last 45 minutes and session talks are for 30 minutes. The abstracts of the talks should be submitted by **30 June 2003**. Conference proceedings will be published as a special volume of "Proceedings of the Institute of Mathematics of Belarusian Academy of Sciences".

Hotel prices in Minsk vary from about $30 to $70 per night. Ask about accommodation as soon as possible so that it can be reserved in advance. The organisers hope to get some additional financial support, which might allow defrayment of expenses of participants who would otherwise find it impossible to come. Further details are available from: Vasily Bernik (bernik@im.bas-net.by); Victor Beresnevich (beresnevich@im.bas-net.by); Denis Vasilyev (vasilyev@im.bas-net.by); Maurice Dodson (mmd1@york.ac.uk) or the website (http://da2003.pisem.net).

DynaBUGS

The next meeting of the Dynamics, Bifurcations and Unfoldings Group in the South (DynaBUGS) is a Workshop on Attractors and Coupled Systems on Friday 27 June 2003 at the University of Exeter. Speakers will include: Marc Timme (Göttingen), Steve Coombes (Loughborough), Jeroen Lamb (Imperial), Rob Sturman (Leeds), Ben Mestel (Exeter). For further details contact Peter Ashwin, email: P.Ashwin@ex.ac.uk, tel: 01392 263969 or see the webpage (www.maths.ex.ac.uk/~PAshwin/workshop_27_6_03.html). DynaBUGS is supported by an LMS Scheme 3 grant.

EAST MIDLANDS STOCHASTIC ANALYSIS SEMINAR

A two-day meeting will be held from 9-10 May 2003 in the Department of Mathematics, University of Hull, as part of the LMS funded programme of the East Midlands Stochastic Analysis Seminar. This meeting will also benefit from support of EPSRC via Warwick Stochastic PDEs Outreach Programme. Organisers: Z. Brzezniak (Hull), K.D. Elworthy (Warwick), X-M. Li (Nottingham-Trent), H.Z. Zhao (Loughborough). The list of speakers and titles is:

- Bohdan Maslowski (Prague) *Large time behaviour of solutions to SPDE's*
- Boguslaw Zegarlinski (Imperial) *Functional inequalities and applications to concentration of measures and Markov semigroups*
- Alexander Shnirelman (Hull) *Inverse cascade solutions of 2-d Euler equations*
- Anne de Bouard (Orsay) *Blow up in the nonlinear Schrödinger equation with multiplicative noise*
- Andrey Piatnitski (Narvik/Moscow) *Averaging of nonlinear random nonstationary reaction-diffusion equation*

For more information on speakers and events contact: Dr Z. Brzezniak, Department of Mathematics, University of Hull (email: z.brzezniak@hull.ac.uk; tel: 01482 465337; fax: 01482 466218). For travel and accommodation information contact: Tina Wardopper, Department of Mathematics, University of Hull, Cottingham Road, Hull HU6 7RX (email: t.wardropper@hull.ac.uk; tel: 01482 465885; fax: 01482 466218).

COMPUTATIONAL MODELLING IN MEDICINE

A meeting on Computational Modelling in Medicine is being held from 17-19 September 2003 in Edinburgh, under the auspices of International Centre for Mathematical Sciences (ICMS), and incorporating the twelfth Scottish Computational Mathematics Symposium (SCMS). The meeting is supported by EPSRC and LMS. The first day will follow the usual SCMS format of five invited lectures, and the second and third days will involve a mixture of invited and contributed talks.

Mathematical modelling and numerical simulation play a major role in many important medical applications. The meeting will be organised around the two interlinked themes of The Vascular and Pulmonary Systems and Soft Tissue Mechanics. The purpose is to bring together people who work on mathematical modelling, numerical analysis, simulation and direct medical applications related to these areas, and to act as a focus to stimulate further research and development of even more realistic medical simulations. The Invited Speakers are :

- J. Barbenel (Strathclyde, UK)
- A. Cuschieri (Dundee, UK)
- M. Heil (Manchester, UK)
- N.A. Hill (Glasgow, UK)
- J. Humphrey (Texas A&M, US)
- O.E. Jensen (Nottingham, UK)
- C. Johnson (Utah, US)
- A. Quarteroni (Lausanne, Switzerland)
- S. Shaw (Brunel, UK)
- J.A. Sherratt (Heriot-Watt, UK)
- R.T. Tranquillo (Minnesota, US)

The organisers are: Penny Davies (Strathclyde), Dugald Duncan (Heriot-Watt) and David Sloan (Strathclyde). The Scientific Committee is: Joe Barbenel (Strathclyde), Sir Alfred Cuschieri (Dundee), Nick Hill (Glasgow), Oliver Jensen (Nottingham), Chris Johnson (Utah) and Jonathan Sherratt (Heriot-Watt).

Registration deadline is **4 July** (deadline for SCMS day only is 5 September). Visit the website (www.ma.hw.ac.uk/icms/meetings/2003/cmm) for registration details and call for papers. For further information contact David Sloan, Department of Mathematics, University of Strathclyde (tel: 0141 548 3819, fax: 0141 552 8657, email: d.sloan@strath.ac.uk).

HAYASHIBARA FORUM 2003

Hayashibara Forum 2003 plans to organize a series of workshops on Determinism and Randomness. As a part of this project an international meeting is to be held at Oxford-Warwick from 2-6 June 2003. The aim of this meeting is to discuss the following frontier subjects in Mathematics and Mathematical Physics:

- Ergodic theory
- Integrable systems and mechanics
- Noncommutative geometry and mathematical physics

The organizing committee is: K.D. Elworthy, T.J. Lyons, Y. Maeda, T. Miwa and H. Nakada (chief organizer). For further details visit the website (www.maths.ox.ac.uk/notices/events/special/hayashibara-forum/).

BRITISH MATHEMATICAL COLLOQUIUM 2004

The 56th British Mathematical Colloquium and the 17th Annual Meeting of the Irish Mathematical Society will be held jointly at the Department of Pure Mathematics, Queen's University Belfast from 5-8 April 2004. The Plenary Speakers will be

- Alexander Kechris (Pasadena)
- Gilles Pisier (Paris)
- Claudio Procesi (Rome)
- Günter Ziegler (Berlin)
- Efim Zelmanov (San Diego)

There will be Special Sessions on Noncommutative Functional Analysis and on Combinatorics. As is traditional, there will be Splinter Groups in a vast variety of mathematical disciplines, but a novelty will be a special 'Student Day' on Monday 5 April. All information will be available at www.qub.ac.uk/bmc2004 in due course. The BMC2004 Organising Committee consists of: Dr Martin Mathieu (Chair), Professor David Armitage (Secretary), Dr Lorenz Halbeisen (Treasurer). We gratefully acknowledge the financial support BMC2004 received from the London Mathematical Society and the Irish Mathematical Society.

BELFAST FUNCTIONAL ANALYSIS DAY 2003

The 6th annual meeting dedicated to all aspects of Functional Analysis will be held in the Department of Pure Mathematics, Queen's University Belfast on Saturday 15 November 2003. The main speaker this year will be Professor R.E. Curto (University of Iowa, USA) who will deliver two one-hour lectures on "Hyponormality, k-hyponormality, and subnormality for Toeplitz operators and unilateral weighted shifts". There will be several contributed talks by the participants. All information will be available at www.qub.ac.uk/bfad in due course. The meeting is organised by Dr M. Mathieu and Professor A.W. Wickstead, both at QUB. The organisers gratefully acknowledge the fincancial support BFAD2003 receives from the London Mathematical Society.

THE FOURTH EUROPEAN CONGRESS OF MATHEMATICS

In November 2000, in De Morgan House, on behalf of the EMS Council, the Executive Committee of the European Mathematical Society accepted the offer of holding the Fourth European Congress of Mathematics (4ecm) in Stockholm. It is now just over a year to the Congress - 27 June to 2 July 2004 - and much of the framework is in place. There is a poster and a website (www.math.kth.se/4ecm/).

We are honoured that Lennart Carleson has agreed to be President of the Scientific Committee. The President of the Organizing Committee is Ari Laptev, whose good-humoured reports have reassured the Executive Committee that the Congress is in very capable hands.

The Congress has a subtitle: 'Mathematics in Science and Technology'. Though the Congress will, as usual, try to cover all of mathematics (a daunting task) there will be a special place this time for applications of mathematics. This is in keeping with the Society's recent efforts

to put applied mathematics high on its agenda. Since Stockholm is the home of the Nobel Prizes, a number of Nobel prizewinners have been asked to speak on the rôle of mathematics in their discipline. Creating room for this has meant that there will be no round table discussions at 4ecm. But this is a decision affecting 4ecm alone: it will be open to the organisers of 5ecm to reinstate the round tables.

Another feature of 4ecm is that the current European networks have been invited to hold their annual meetings in association with the Congress: some of them may present their work there. There will be satellite conferences: so far there have been six expressions of interest.

4ecm will be the occasion for the presentation of the European Mathematics Prizes. Nina Uraltseva (St Petersburg) has been appointed Chair of the Prize Committee and a call for nominations for prizes is on the website. The Felix Klein Prize will also be presented at the Congress, and the committee for that is now complete. Everything is shaping up for a really stimulating Congress. All it needs is for the mathematical community to turn up in droves, as it did in Barcelona.

David Salinger
EMS Publicity Officer

FACILITIES FOR MEMBERS AT DE MORGAN HOUSE

A major benefit of the Society's move to its own premises in 1998 was to be able to have its own space for meetings and workshops, and to be able to offers members a base they could use in London.

This article outlines what is available. We encourage members to come and use them – we also enjoy meeting you and putting faces to names!

Members' Room (Verblunsky Room)
The Verblunsky Room – named after Samuel Verblunsky, elected 1929, who gave a generous donation to the Society – provides a comfortable area, looking out over Russell Square, for members and their guests. A desk and email terminal is provided for members wishing to work. Major journals and newsletters, and some of the Society's book stock, are available.

Refreshments and office services
Coffee and tea are available (on a 'do it yourself' basis!) in the kitchen on the lower floor. The local area is rich in sandwich bars and restaurants to meet all needs and pockets – the staff will be happy to advise.

Occasional photocopying for personal use can be done via the Receptionist, Lee-Anne Taylor, but the Society may charge to recover costs on substantial photocopying jobs or extensive use of this service.

Meeting rooms
De Morgan House has two rooms for meetings: the Hardy Room and the Committee Room. The Hardy Room holds up to 25 people in board-room format; the Committee Room 6–10. The LMS Council is keen to see these rooms used in support of mathematics, by the Society's own committees and by other mathematical organisations.

An overhead projector and whiteboard are available in the Hardy Room, and a flip-chart in the Committee Room. A data projector can be provided (a charge is made for non-LMS

bodies). Other equipment can be hired, provided sufficient notice is given – you will be expected to meet the costs.

Booking of the Hardy and Committee Rooms is essential. While, at present, Council is happy to let the rooms be used free of charge (except costs of catering, refreshments and equipment hire) for suitable activities in support of mathematics, it reserves the right to levy a charge. The rooms may be hired by outside bodies for appropriate purposes, that fit with the Society's objectives – Council's decision is final on this matter. Rates and details are on the website (www.lms.ac.uk/contact/roombook.html) or available from Susan Oakes, the Administrator.

The Society's Library
The Society's library is housed with the UCL Science Library, Malet Place. This is a short 10-minute stroll from De Morgan House.

Members are entitled and welcome to make use of the UCL Library facilities. To do so you will need to register to obtain a UCL Library card. Unregistered members will not be refused postal photocopying services but registration is essential before items can be borrowed. This entails filling in a form and providing a passport-size photograph. For personal users, library cards will be provided on the spot at the Issue Desk of the Science Library. Alternatively, members may register by post. You may request the relevant form by post, email, fax or telephone (mentioning membership of the Society) from UCL Library's Admissions Officer. You may also download a Library application form from the Library's website (www.ucl.ac.uk/Library).

Practicalities
De Morgan House is on the south side of Russell Square, a 15-minute walk down from Euston mainline station. The nearest tube stations are Russell Square (Piccadilly line) and Holborn (Central and Piccadilly lines). A map of the area, showing the location of De Morgan House, is on the website (www.lms.ac.uk/contact/map.html).

Please note that, as from 17 February 2003, congestion charges apply to central London, including the Russell Square area. Any car entering the congestion charging zone between 7.00 am and 6.30 pm, Monday to Friday (excluding public holidays) must pay a £5 charge. Details are available on the website (www.cclondon.com).

The building is normally open from 9.30 am to 5.30 pm. On arrival please make yourself known to Lee-Anne Taylor, on Reception. She, or Susan Oakes, can provide you with further information. Lee-Anne is also responsible for managing bookings of the Hardy Room and Committee Room.

Contacts:
Lee-Anne Taylor (taylor@lms.ac.uk) 020 7637 3686
Susan Oakes (oakes@lms.ac.uk) 020 7291 9977

LMS PROGRAMME AND CONFERENCE FUND

Members are reminded that the Society's Programme and Conference Fund is used to provide conference grants (Scheme 1), grants to visitors to the UK (Scheme 2), grants to support joint research groups (Scheme 3), collaborative small grants (Scheme 4), international short visits (Scheme 5) and connectivity grants (Scheme 6).

For full details of all the Schemes please see the article in the December 2002 *Newsletter* (No. 310, pp 8-15), and also on the Society's website (www.lms.ac.uk/activities/prog_com/index.html). Queries regarding applications can be addressed to the Programme Secretary (tel: 01752 232710, e-mail: s.huggett@plymouth.ac.uk) or the Administrative Officer, Frances Spoor (tel: 020 7291 9979, email spoor@lms.ac.uk) who will be pleased to discuss proposals informally with potential applicants and give advice on the submission of an application.

The fund is administered by the Society's Programme Committee. Please remember that the funding for all these awards comes entirely from the LMS itself, and that much of the income to the Society arises from its investments. Members will not be surprised to learn, therefore, that the current state of the market is giving us cause for some concern that we may not be able to maintain our current level of expenditure on our grant schemes. In particular, it remains the case that the Society expects normally only to provide part funding for an activity.

Please note that grant applications will not be considered between mid-June and mid-September. The deadline for receipt of those applications to be considered at the June 2003 meeting is 31 May 2003 (except Scheme 5, for which see the note below). Any applications received after this deadline will not be considered until the September meeting, for which the deadline for receipt of applications is 31 August.

Scheme 5 applications (International short visits to or from disadvantaged countries) will now only be considered at the September and February meetings of Programme Committee: the deadlines are the 31 August and the 31 January. We are receiving a number which propose excellent visits but which do not adequately meet the condition 2f (benefit to the country concerned) on the application form: these are being redirected to Scheme 2.

S.A. Huggett
Programme Secretary

INTERNATIONAL MATHEMATICS COMPETITION FOR UNIVERSITY STUDENTS

The 10th International Mathematics Competition for University Students is being co-organized by University College London and Babes-Bolyai University, Cluj-Napoca, Romania (www.imc-math.org/). It will take place in Cluj-Napoca from 25-31 July 2003.

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

Babes-Bolyai University, which traces its roots back to 1565, has over 40,000 students in 19 Faculties. It is named after the physician and bacteriologist Victor Babes and the mathematician János Bolyai, one of the founders of non-Euclidian geometry, who was born in Cluj.

25 July	Arrival and Registration
26 July	Opening Ceremony, Additional Registration, Meeting of the Jury
27 July	First Exam Day

28 July Second Exam Day
29 July Meeting of the Jury
30 July Closing Ceremony, Final Dinner
31 July Departure

Groups Although this is an individual event, the Universities traditionally divide their participants into groups of four each. The number of students in the teams is, however, not fixed. The professor who accompanies the students is expected to be a member of the Jury. Over the previous nine competitions we have had participants from 82 universities in 30 countries.

Selection of the Problem The problems will be chosen at the Meeting of the Jury on 20 July from those received in advance by the President of the Jury, Professor John Jayne. The problems proposed should be precisely formulated and accompanied by a detailed solution. The problems should be in fields of Algebra, Analysis (Real and Complex) and Combinatorics. The problems given at the last nine Competitions can give a general idea of the level expected (see the IMC website www.imc-math.org/). Additional topics may be also included.

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

Necessary information Participants are invited to confirm their intention to participate, either by on-line registration or by email, by the end of May, providing the following information: University: City, Country: Leader of the team (name, email address): Students (number): Mailing address: Email address: Fax.

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

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

Send all confirmations of participation and arrival details to John Jayne at the email address below. If you would like a copy of the competition poster, please send your request with postal address to The IMC President, Professor John E. Jayne, Department of Mathematics, University College London, Gower Street, London WC1E 6BT (tel: 020 7679 7322; fax: 020 7419 2812; email: j.jayne@imc-math.org).

BOOK REVIEW

Four Colours Suffice: How the Map Problem was Solved by Robin Wilson, Allen Lane, London, 2002, pp.262, ISBN 0-713-99670-6, £12.99.

Like most of the great problems of mathematics, the Four-Colour Conjecture has a history of failed attempts, false trails, and sheer hard work. A couple of features distinguish it from the likes of Fermat's Last Theorem, however.

For the first half of its history, it wasn't clear what, if any, branch of mathematics it belonged to. Arthur Cayley published a paper on the problem in the *Proceedings of the Royal Geographical Society*. (Incidentally, the myth that geographers have always known that four colours suffice was debunked by Kenneth May, who examined a sample of atlases in the Library of Congress and found that map-makers show no tendency to minimise the number of

colours.) Later, it was regarded as part of the "analysis of position", or topology. It was not until well into the twentieth century that graph theory emerged as an independent mathematical discipline, and Martin Aigner has argued that the Four-Colour Problem was crucial to this emergence.

Even with its solution by Kenneth Appel and Wolfgang Haken in 1976, the problem remained controversial, chiefly because of the extensive use of the computer in the proof. Philosophers (notably Thomas Timoczko) argued that such an argument could not be regarded as a mathematical proof. Mathematicians, less dogmatic, were uneasy. This feature also meant that the flow of incorrect solutions was not stemmed; many people felt provoked by this "unsatisfactory" proof into trying to produce a better one. (Ironically, in the recent proof by Robertson, Sanders, Seymour and Thomas, hand argument has been replaced by computation wherever possible since this is more reliable!)

Robin Wilson's book commemorates the 150th anniversary of the problem and the 25th anniversary of its solution, by telling the whole story. (His title is taken from the University of Illinois math department's postal meter slogan.) It is a welcome addition to the popular literature on what mathematicians do, and is full of fascinating details. Much will be new even to those who know the story in outline. For example, the French symbolist poet Paul Valéry devoted considerable effort to the problem. Others who have walk-on parts include Lewis Carroll, the Bishop of London, and a Californian traffic cop.

Wilson relates how Appel and Haken won the race by only a very narrow margin. Frank Allaire was just months behind, but his paper was published in a conference proceedings; no refereed journal was interested in a second proof, even though it was obvious to all that independent verification of the first proof was vital.

The book presents in detail enough of the argument for non-mathematicians to get a feel for what is involved. Kempe's fallacious proof and its debunking by Heawood, Errera, and de la Vallée Poussin, the notions of unavoidable sets (and the discharging process used to establish them) and reducible configurations, including the proof of reducibility of Birkhoff's diamond, are included. After this point, Wilson simply tells the story, trusting that readers will have an appreciation of the difficulties to be faced.

Wilson does a good job of this, and explains why neither a proof by hand nor simply "putting it on the computer" without a lot of preparation can succeed. Someone trying to follow the argument carefully may have some difficulty early on, with the proof of Euler's polyhedron formula. The trouble arises because the notion of a map is not made sufficiently clear. "It almost goes without saying that every map we consider is in one piece", we are told, and this is indeed crucial to the proof; but then further reductions are made, which make the inductive proof invalid. Perhaps the work of Imre Lakatos should be compulsory reading for anyone presenting a proof of Euler's formula! Also, the mis-dating of the announcement of the Appel-Haken proof in *The Times* is a bit distracting, suggesting that the authors were much less cautious than was actually the case.

Mathematicians reading the book will have other questions. Wilson wisely does not follow developments which, while theoretically important, played no part in the final proof. Much of the work of Birkhoff, Whitney and Tutte falls into this category. But for this work, graph theory would be much more isolated mathematically than is the case. Also, we are told that there is much more to do, and that good progress is being made, with no more detail. Discussion of Hadwiger's conjecture, graph minors, the Colin de Verdière invariant, and Penrose polynomials would not be appropriate, but perhaps some pointers could have been given.

Peter Cameron

LONDON MATHEMATICAL SOCIETY

Notice of a General Meeting

A General Meeting of the Society will be held on 20 June 2003 at 5.00 pm in the Chemistry Lecture Theatre, University College London. The Council of the Society asks the meeting to appoint Scrutineers for the year 2003 elections to Council and to Nominating Committee.

Norman Biggs
General Secretary

LONDON MATHEMATICAL SOCIETY

Friday 20 June 2003

J.C. Rickard (Bristol University)
Senior Berwick Prizewinner 2002
will speak at 3.30 pm on
The stable module category of a finite group algebra

M.J. Taylor, FRS (UMIST)
will give the first Fröhlich Lecture
at 5.00 pm on
Die Fröhliche Wissenschaft

The meeting will be held at the Chemistry Lecture Theatre, Christopher Ingold Building, University College, 20 Gordon Street, London WC1. Tea will be served at 4.30 pm.

A reception and dinner will be held after the meeting. For details contact Susan Oakes, Administrator, London Mathematical Society (oakes@lms.ac.uk).

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).

NETCA Instructional Workshop on Computational Algebra

Second Announcement

The Centre for Interdisciplinary Research in Computational Algebra (CIRCA) at the University of St Andrews will be holding an instructional workshop in Computational Algebra from 1-5 September 2003.

Invited Speakers

Three speakers will give courses of three or four lectures each, supported by hands-on practical sessions:

- **George Havas (University of Queensland)**
  Some computations with finitely presented groups

- **Gerhard Hiss (RWTH Aachen)**
  Representation theory in and with GAP

- **Alice Niemeyer (University of Western Australia)**
  Aspects of algorithms for recognising symmetric and alternating groups

The workshop will feature short courses as above and individual lectures by other invited speakers, an introduction to GAP and plenty of opportunities to try it out in the labs, and opportunities to describe your own research interests and discuss them with others.

Meals and accommodation will be provided in student residences.

The workshop will be aimed primarily at UK graduate students and research staff, although all are welcome. Thanks to generous support from NETCA, the EPSRC funded Research Network in Computer Algebra, we expect to be able to offer support with travel and/or accommodation to any UK participants who need it.

Registration: will be available as soon as possible. The conference fee will be £20 per person until 1 June, £25 thereafter.

If you might be interested in taking part, and would like to receive further information about the workshop, send an email to: workshop2003@mcs.st-and.ac.uk, or write to:

NETCA Instructional Workshop on Computational Algebra
Centre for Interdisciplinary Research in Computational Algebra
Mathematical Institute
University of St Andrews
North Haugh
St Andrews KY16 9SS

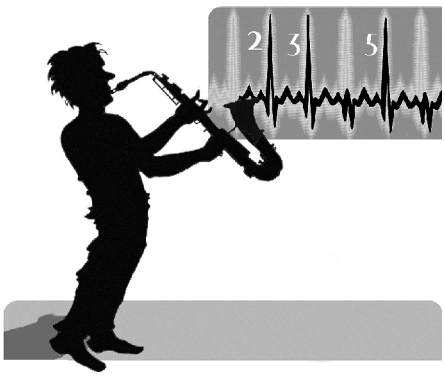
LONDON MATHEMATICAL SOCIETY

POPULAR LECTURES 2003

Institute of Education, London University
Tuesday 1 July

Dr David Acheson
Mathematics, Magic and the Electric Guitar

‘Maths is sometimes magical. But can it explain the legendary Indian Rope Trick? And what has it got to do with playing the guitar?’



Professor Marcus du Sautoy
The Music of the Primes

‘A million dollars awaits the person who can unravel the mystery of the hidden music that explains the cacophony of the prime numbers.’

Commences at 7.00 pm, refreshments at 8.00 pm, ends at 9.30 pm. Admission is free, with ticket. Apply by **26 June** to Miss L. Taylor, London Mathematical Society, De Morgan House, 57-58 Russell Square, London WC1B 4HS (email: taylor@lms.ac.uk). A stamped addressed envelope would be appreciated.

The Lectures are intended to be suitable for a general audience and no specific mathematical knowledge will be assumed. Although the talks are not primarily intended for professional mathematicians everyone is welcome and some members may wish to apply for tickets for friends and relatives.

BRITISH WOMEN IN MATHEMATICS DAY

Tuesday 6 May

The 2003 British Women in Mathematics Day will be held at the London Mathematical Society, De Morgan House, 57-58 Russell Square, London WC1B 4HS. Details of the programme are below. While this is an occasion particularly for women active in mathematics to get together, men are certainly not excluded.

One aim of the day is to encourage women approaching the various interfaces - undergraduate/postgraduate, PhD/Postdoc and so on - to stay in mathematics; we hope that an opportunity to see women who are active and successful in mathematics, and to meet with them informally over lunch, tea, etc will have a positive effect in this direction. British Women in Mathematics are very grateful for the support given to this event by the London Mathematical Society.

Programme

10.30	Registration and coffee
11.00 am	*Dimensions of Julia sets* Gwyneth Stallard, Open University
12.00 pm	*How I became a computer scientist* Ursula Martin, St Andrews
12.30 pm	TBA Claudia Yastremiz, Barclays Capital
1.00 pm	Lunch
2.00 pm	*The solution of simultaneous quadratic equations via lattice reduction* Rachel Long, Oxford Brookes University
2.25 pm	*Analytic description of finite-amplitude undular bores* Alexandra Tyurina, Coventry University
2.50 pm	*Lower 1-transitive linear orders* Katie Chicot, University of Leeds
3.15 pm	*Can beetles prove that God exists*? Alex James, Sheffield Hallam University
3.40 pm	*As shape for the Universe: three-dimensional geometrization* Vivien Easson, University of Oxford
4.05 pm	*Mathematical modelling of the secondary sonic boom* Katerina Kaouri, University of Oxford
4.30 pm	Tea

The meeting will be followed by an early supper at a nearby restaurant for those able to stay. To register please contact Isabelle Robinson, Secretary, at the address above (tel: 020 7927 0800, fax: 020 7323 3655, email: robinson@lms.ac.uk). The day is free for postgraduate students and £5 for all others – payable on the day.

LONDON MATHEMATICAL SOCIETY MIDLANDS REGIONAL MEETING AND WORKSHOP

Uncertainty Modelling

Meeting 14 May, Workshop 15-17 May 2003

Room AS130, Armstrong-Siddeley Building,
Priory Street, University of Coventry

The Midlands Regional Meeting of the London Mathematical Society will be held on the afternoon of Wednesday 14 May. There will be a reception afterwards and a dinner at 7.00 at the Lanchester Restaurant. The reception is free of charge but the dinner costs £20 (including wine). Numbers are limited, so people wishing to attend the dinner should inform Dr Helen Robinson (h.robinson@coventry.ac.uk) immediately.

3.30 – 4.30 **Olaf Wolkenhauer (UMIST)**
Mathematical Modelling of Cellular Dynamics

4.30 – 5.00 **Tea/coffee**

5.00 – 6.00 **Robert Babuska (Delft)**
Fuzzy Systems

This will be followed by a Workshop on 'Uncertainty Modelling' from 15-17 May inclusive. It is intended that there will be two strands to the workshop, one oriented to control engineering/systems theory and one towards applications in the biological domain. Both events should be of interest to mathematicians working in the field of fuzzy logic. Invited speakers who have accepted include:

R. Babuska (Delft) **D. Pearson (St. Etienne)**
M. French (Southampton) **S. Townley (Exeter)**
E. Ryan (Bath) **A. Zinober (Sheffield)**

For further details, including opportunities to contribute to the workshop, please contact the organiser, Dr Helen Robinson (tel: 024 7688 8586, email: h.robinson@coventry.ac.uk). Coventry University is about 10 minutes' walk from the station.

Both of the above events are supported by the London Mathematical Society.

There are limited funds available to contribute in part to the expenses of members of the Society or research students to attend the Society Meeting on 14 May. Requests for support, including an estimate of expenses, may be addressed to the LMS Programme Secretary (web: www.lms.ac.uk; email: grants@lms.ac.uk).

For further information visit the website
www.mis.coventry.ac.uk/fuzzy-workshop.html

LMS INVITED LECTURE SERIES

DIRICHLET FORMS AND RELATED STOCHASTIC ANALYSIS

Professor M. Fukushima (Kansai University)

24 - 30 August 2003

The 2003 LMS Invited Lectures will be given at the Department of Mathematics, University of Wales, Swansea. This series is held annually: a single speaker gives a course of 10 expository lectures, examining an important topic in depth, over a five-day period. In the 2003 programme in Swansea there will be two lectures by Professor Fukushima every morning. The following intimately related questions will be discussed:

- **Dirichlet Forms and Function Spaces**
- **Trace Dirichlet Forms and Capacitary Inequalities**
- **Ultracontractivity of Time-changed Processes**
- **A Stochastic Approach to the Douglas Integral**

The associated afternoon sessions will consist of an invited lecture from Professor Bogdan to complement the course.

All mathematicians interested in the topic are welcome to attend the lectures, although the total number of participants may be limited. There is a registration fee of £30, payable on arrival. The registration fee will be waived for research students. Limited funds are available to support participants. Priority will be given to research students and mathematicians who would benefit from attending the lectures, but who would otherwise be prevented from attending by financial constraints.

Accommodation will be in the University of Swansea. A number of single, standard bedrooms have been reserved. The costs are: bed and breakfast: £24.30 + VAT per night; bed and breakfast en-suite £33.00 + VAT per night. For further details, contact the organiser Niels Jacob (N.Jacob@swansea.ac.uk), or visit the website (www-maths.swan.ac.uk/), which also contains a registration form.

LONDON MATHEMATICAL SOCIETY

in association with the Isaac Newton Institute

Spitalfields Day

Tuesday 13 May 2003

Partial Differential Equations and Computational Material Science

Organisers: C.M. Elliott (Sussex) and M. Luskin (Minneapolis)

10:30 – 11:00 **Coffee**

11:00 – 12:00 **M Luskin (Minneapolis)**
Metastability and microstructure in structural phase transformations

12:30 – 13:30 **Lunch**

14:00 – 15:00 **C Le Bris (CERMICS, Ecole Nationale des Ponts et Chaussées, Champs-sur-Marne)**
Inserting the atomic scale in computational materials science: state of the art and challenges

15:00 – 15:30 **Tea**

15:30 – 16:30 **H Garcke (Regensburg)**
Phase field models for diffusional phase transformations in multi-component alloys

17:00 – 18:00 **Wine Reception**

These lectures are linked to the Isaac Newton Institute programme on
Computational Challenges in Partial Differential Equations
(20 January - 4 July 2003)

Anyone interested is welcome to attend. Please let Tracey Andrew at the Institute know immediately if you intend to come, to help us plan for lunch (tel 01223 335984; fax: 01223 330508; email: t.andrew@newton.cam.ac.uk).

There are limited funds available to assist research students to attend; please apply immediately to Tracey Andrew at the Institute. Scientific enquiries may be addressed to Professor C.M. Elliott (email: c.m.elliott@sussex.ac.uk).

ANALYSIS AND PROBABILITY ON FRACTALS

LMS/EPSRC Short Course

University of St Andrews, 30 June - 5 July 2003

Organisers: K J Falconer, L Olsen and B Stratmann

There has been a tremendous interest in fractals since the early 1980s. Much has been done of a geometric measure theoretic nature, with fractals studied as geometric entities in their own right, or used as geometrical descriptions of phenomena in the sciences. In the last few years, there has been a change in direction, with an increasing emphasis on the interaction of fractals with mathematical analysis and probability. For example, there are now several approaches to defining differential operators such as the Laplacian on fractal domains, leading to theories of linear and non-linear PDEs on fractals. Again, the interaction between fractals and conformal geometry has lead to the recent dramatic proof that the exterior boundary of Brownian motion in the plane has Hausdorff dimension 4/3. A wide range of new techniques is being introduced to enable traditional analytic problems to be addressed in the context of highly irregular sets, and these are likely to provide significant tools in future research.

This course will aim to present three contemporary areas at the interface of analysis and probability and fractal geometry, at a level that can be appreciated by research students. The topics to be covered will be of particular interest to those working in mathematical analysis, differential equations, probability and in some areas of applied mathematics or theoretical physics. The course will take place in the atmosphere of a traditional 'St Andrews Colloquium' in an environment in which mathematics and relaxation both flourish.

There will be three courses of lectures:

- **Diffusions and Heat Equations on Fractals:** Professor Martin Barlow (University of British Columbia)
- **Random Fractals:** Professor Yuval Peres (Jerusalem and Berkeley)
- **Random Planar Curves:** Professor Wendelin Werner (Paris-Sud)

There will be other related talks and tutorial back-up to the courses. Further details of the programme may be found on the website (www.mcs.st-and.ac.uk/~colloq/).

The registration fee is £100, which for all UK-based research students includes the cost of course accommodation and meals. Participants must pay their own travel costs. EPSRC-supported students can expect that their registration fees and travel costs will be met by their department's EPSRC Doctoral Training Account.

Application forms may be obtained from Isabelle Robinson, London Mathematical Society, De Morgan House, 57-58 Russell Square, London WC1B 4HS (robinson@lms.ac.uk) or from the LMS website (www.lms.ac.uk/activities/research_meet_com/short_course/15_form.html).

Numbers will be limited and those interested are advised to make an early application. The closing date for applications is **Friday 9 May 2003**.

TOPICS IN ALGEBRAIC GEOMETRY

LMS/EPSRC Short Course

University of Bath, 15-19 September 2003
Organiser: G.K. Sankaran

Algebraic geometry occupies a central place in modern pure mathematics, with connections to number theory, theoretical physics and differential geometry in particular. For example, elliptic curves and modular curves play vital roles in arithmetic; startling advances in the theory of higher-dimensional varieties and moduli spaces have emerged from, and contributed to, physics; and the theory of real 4-manifolds has similarly interacted with complex algebraic surfaces. One of the most influential problems for computer algebra has been to carry out explicit calculations in algebraic geometry.

Within algebraic geometry, there has been great progress over the last few years. The study of algebraic varieties of dimension three and more, initiated by Mori and others in the 1970s, has reached an advanced stage. Major results have been proved in enumerative geometry, especially on moduli spaces. The geometric meanings contained in resolutions of ideals (syzygies) have been much better explained and can be applied very directly, often with computer assistance.

In part because of its many connections, algebraic geometry is often seen as being hard to learn, and is left in the hands of specialists. This course will try to broaden the appeal of the subject by presenting three different topics at a level suitable to graduate students in algebraic geometry but in a style accessible to those working in related fields.

The course will take place at the University of Bath, within easy reach of the city of Bath.

There will be three courses of lectures:

- **Vector bundles:** Dr Peter Newstead (Liverpool)
- **Abelian varieties:** Dr Gregory Sankaran (Bath)
- **Higher-dimensional geometry:** Dr Alessio Corti (Cambridge)

There will be tutorial support for the courses, and workshops on other related topics. Further details of the programme may be found on the web (www.bath.ac.uk/~masgks/ShortCourse).

The registration fee is £100, which for all UK-based research students includes the cost of course accommodation and meals. Participants must pay their own travel costs. EPSRC-supported students can expect that their registration fees and travel costs will be met by their department's EPSRC Doctoral Training Account.

Application forms may be obtained from Isabelle Robinson, London Mathematical Society, De Morgan House, 57-58 Russell Square, London WC1B 4HS (robinson@lms.ac.uk) or from the LMS website (www.lms.ac.uk/activities/research_meet_com/short_course/16_form.html)

Numbers will be limited and those interested are advised to make an early application. The closing date for applications is **Monday 8 July 2003**

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United Kingdom Mathematics Trust (UKMT) and the University of Leeds

DIRECTOR (Part time)

The UKMT is a registered charity and was incorporated as a company limited by guarantee in 1996 "to advance the education of children and young people in mathematics and in particular by organizing and running mathematics competitions". Currently over half a million secondary pupils and most secondary schools in the UK participate in the Trust's range of competitions and related activities. This is made possible through significant voluntary contributions from school and university mathematicians together with a small staff providing administrative and marketing expertise and support.

The Trust now seeks to appoint a Director to lead it forward, building upon its successes as well as maintaining the highest standards for its existing core activities. The person appointed will take on many of the responsibilities of its current Chairman, Dr Peter Neumann, in acting as ambassador to schools, universities, government, potential sponsors and other outside bodies, and will direct the Trust on a day-to-day basis from its office in the University of Leeds.

The prime qualification for the role is unbounded enthusiasm for the Trust's objectives. The UKMT Council will look to the Director to promote a vigorous and creative approach throughout the organization. It is expected that the person appointed will enjoy professional standing in and broad knowledge of the field of mathematics at school and higher level, coupled with the commercial awareness to ensure UKMT's success as a viable business.

The UKMT is prepared to be flexible in order to attract the right candidate. It is hoped that the person appointed will take up post by 1 January 2004 at the latest. The initial appointment is expected to be for three years at 0.6 f.t.e. Salary is negotiable (*pro rata*) within the professorial equivalent range. The Director will be employed jointly between UKMT and the University of Leeds.

Further particulars and details of the application procedures are available from Miss Ann Milner, Administrative Officer, The University of Leeds, Leeds LS2 9JT, email: a.e.milner@leeds.ac.uk or tel: 0113 343 5775.

Job reference: 051-096-008-041 **Closing date: 13 June 2003**

SAMUEL ROBERTS
DE MORGAN MEDALLIST 1896

Samuel Roberts received the De Morgan Medal on 12 November 1896. Extract from his Obituary Notice: "Mr Roberts's contributions to mathematics were numerous and valuable, and they covered a wide range. Among the subjects to which his principal papers related were plane and solid Geometry, Theory of Numbers, and link motion. He also wrote on the Calculus of operations and interpolation. His writings on Geometry included several important papers on Parallel Curves and Surfaces. In Theory of Numbers he was interested in the Pellian equation and similar problems. He was strictly an amateur - that is to say, he never held any office, directly or indirectly, connected with mathematics or other branch of science."

DIARY

MAY 2003
14 Reading One-Day Combinatorics Colloquium, Reading University (315)
19 Differential Geometry Day, Hull University (315)
26-27 North British Functional Analysis Seminar, Edinburgh University (315)

JUNE 2003
2-6 Determinism and Randomness, Hayashibara Forum 2003, Oxford & Cambridge (315)
16 Group Theory and Combinatorics Meeting, East Anglia University (315)

20 LMS Meeting, Fröhlich Lecture, University College, London (315)
(nb delete previous entry for this date)

27 Attractors and Coupled Systems, DynaBUGS Workshop, Exeter University (315)

JULY 2003
25-31 International Mathematics Competition for University Students, Cluj-Napoca, Romania (315)

AUGUST 2003
25-29 Diophantine Analysis, Uniform Distribution and Applications Conference, Minsk, Belarus (315)

SEPTEMBER 2003
1-5 Computational Algebra, NETCA Instructional Workshop, St Andrews University (315)
17-19 Computational Modelling in Medicine, ICMS, Edinburgh (315)

JUNE 2004
27 – 2 Jul Fourth European Congress of Mathematics, Stockholm (315

Change of Newsletter number to 315:

MAY 2003
6 British Women in Mathematics Day, De Morgan House, London (315)
9-10 Stochastic Analysis Seminar, Hull University (315)
13 Partial Differential Equations and Computational Material Science, LMS Spitalfields Day, INI, Cambridge (315)

14-17 LMS Midlands Regional Meeting & Workshop, Uncertainty Modelling, Coventry University (315)

JUNE 2003

30 – 5 July Analysis and Probability on Fractals, LMS/EPSRC Short Course, St Andrews University (315)

JULY 2003

1 LMS Popular Lectures – D. Acheson & M. du Sautoy, Institute of Education, London (315)

AUGUST 2003

24-30 Dirichlet Forms and Related Stochastic Analysis, M. Fukushima: LMS Invited Lectures, University of Wales, Swansea (315)

SEPTEMBER 2003

15-19 Topics in Algebraic Geometry, LMS/EPSRC Short Course**,** Bath University (315)