THE LONDON MATHEMATICAL SOCIETY

NEWSLETTER No. 346 March 2006

Forthcoming Society Meetings

2006

Monday 15 May
Midlands Regional Meeting, Leicester
M. Bridson
N. Hitchin
H. Kraft
A. Zelevinsky
[*page 3*]

Friday 16 June
London
A. Rice
Yu Manin
(Hardy Lecture)

Friday 3 July
Northern Regional Meeting, Leeds
U. Haagerup
N. Kalton
[*page 25*]

Monday 11 September
South West and South Wales Regional Meeting, Bath
P-L. Lions
T. Seppalainen

Friday 17 November
London
Annual General Meeting
Geometric Analysis

COUNCIL DIARY

20 January 2006

John Toland began his first Council meeting as President by welcoming the other new Council members: Charles Goldie, Iain Gordon and Elizabeth Winstanley. He highlighted that LMS Administrator, Susan Oakes, had completed 25 years working for the Society, and Council recorded its congratulations and thanks for all she had done.

As has become customary at the first meeting of the year, the General Secretary reminded Councillors of their collective and individual responsibilities as Trustees of a charitable body. Charities are becoming increasingly regulated to ensure that they are properly managed and that their work is for the public good: this was brought home by a visit during the day from representatives of our auditors to check the credentials of the new members of Council.

Council were glad to be meeting once again in the Hardy Room, recently enlarged as part of the lower ground floor refurbishment of De Morgan House. With its associated facilities, the room is now ideal for meetings of up to about 70 participants. A Conference and Buildings Officer is being appointed to ensure that good use will be made of the rooms, as a facility for the mathematics community and as a useful income stream.

Several items on the agenda related to the EPSRC. For the past six years LMS/EPSRC Instructional Short Courses aimed at postgraduate students have run very successfully on a partnership basis. As a result of policy changes, the EPSRC has had to put the contract for such courses out to tender. Council discussed this change and authorised a small group to decide on our response, if any, taking due regard of the new commercial basis of the activity. Council also approved a response to the EPSRC consultation report 'Postgraduate Training Strategy'. This expressed the view that, although the report was positive in many ways, there was concern that it did not address the particular needs of mathematics in important respects, above all the funding gap in postgraduate provision. Internationally-competitive training in mathematics typically requires eight years from undergraduate-entry to PhD and this must be achieved without reduction in postgrad-

uate numbers. On a related issue, concerns were also raised about the scale and limitations of the proposal to establish taught-course centres for PhD students in the mathematical sciences.

The Education Secretary reported the responses from heads of departments to a survey on the training provided by their institutions for new lecturers. There was strong dissatisfaction with the widespread reliance on generic methods and learning theory that is often inappropriate to mathematics. Use of blackboards is generally discouraged, and one generic course even suggested that lecturers should avoid mathematics in their presentations! The two-day September MSOR workshop for new mathematics lecturers run by the Higher Education Academy (HEA) subject centre was viewed much more positively. Council approved a letter to the HEA, to be copied to departments, elaborating on these views.

The Education Committee had received summary sheets from the workshops held across England as part of the project 'Increasing the Supply of Mathematics Graduates'. The LMS is a sponsor of this ongoing project that is aimed at increasing the numbers of students entering mathematics-related degrees. Council agreed to set up a small group to review the report that was being prepared for HEFCE. Further information on the project is available on the website: www.insums.ac.uk.

Members will be aware that they are entitled to use the LMS Library, much of which is housed at University College London. The Society Librarian reported on usage of the library and the increasing access to electronic journals and catalogues. Many of the library journals are obtained from exchange with the Society's own journals. Council agreed that exchange arrangements are appropriate in two situations: when the exchanged journal is of comparable quality and value, but also when the exchange will benefit a definable community of mathematicians, for example a society in a developing country.

The meeting finished a little earlier than usual, allowing Council members a break before the start of the Retreat, which is reported on elsewhere in this *Newsletter*.

Kenneth Falconer

LMS Newsletter

General Editor: Dr D.R.J. Chillingworth (D.R.J.Chillingworth@maths.soton.ac.uk)
Reports Editor: Dr S.A. Huggett (s.huggett@plymouth.ac.uk)
Reviews Editor: Professor M.P.F. du Sautoy (dusautoy@maths.ox.ac.uk)
Administrative Editor: Miss S.M. Oakes (oakes@lms.ac.uk)
Editorial office address: London Mathematical Society, De Morgan House,
57-58 Russell Square, London WC1B 4HS (tel: 020 7637 3686; fax: 020 7323 3655;
email: oakes@lms.ac.uk, web: www.lms.ac.uk)
Designed by CHP Design (tel: 020 7240 0466, email: info@chpdesign.com, web:www.chpdesign.com)
Publication dates and deadlines: published monthly, except August.
Items and advertisements by first day of the month prior to publication.

Charity registration number: 252660.

LONDON MATHEMATICAL SOCIETY

MIDLANDS REGIONAL MEETING

Department of Mathematics, University of Leicester
Monday 15 May 2006

Martin Bridson (Imperial College, London)

Nigel Hitchin (University of Oxford)

Hanspeter Kraft (University of Basel)

Andrei Zelevinsky (Northeastern University, Boston)

PhD students are invited to make poster demonstrations of their work for display at the meeting. Springer will donate a prize of the value of £100.00 in books for the best poster. Let the organisers Frank Neumann (fn8@mcs.le.ac.uk) or Joshua Scott (js262@mcs.le.ac.uk) know if you would like to submit a poster. For further details or to reserve a place at the dinner, contact the organisers or visit the website www.math.le.ac.uk.

The meeting will be followed by a workshop from 16-18 May on *Teichmüller Theory and Cluster Algebras* exploring connections recently emerging between cluster algebras and the theory of decorated Teichmüller spaces and related moduli spaces. Visit www.math.le.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 Society meeting on Monday 15 May. Requests for support, including an estimate of expenses, may be addressed to the Programme Secretary at the Society (web: www.lms.ac.uk; email: grants@lms.ac.uk).

COUNCIL RETREAT

20-21 January 2006

This is a condensed and selective summary of the retreat which, to quote the President, was held to identify the soul of the LMS in order that it be prepared for possible developments over the next 5-10 years, while retaining what members value, and having regard to the increasing pressures on the Society's officers, all of whom are volunteers.

Framework Studies Initiative

The first session, on the specific issue of possible unification of the LMS and the IMA, was held to help inform an advisory group that is preparing a report for March Council. Their report will further evaluate the 'H' and 'inverted Y' frameworks described in the FSI consultation document*. In the light of that report Council will choose one of these two processes for detailed development so that it can be used as a basis of a later decision on an actual merger. In due course, the Councils and memberships of the two societies will make any final decision according to their charters when the question of merger will be put to a vote. The Executive Secretary outlined the legal position of the societies, as charities governed by Royal charters.

Many members had provided helpful views and suggestions during last year's consultation. The retreat received a paper summarising the concerns expressed, including the possibility that a combined society might not in practice provide a unified voice for mathematics, that support for research might be reduced, that the journals might lose their high reputation, and the difficulty of finding a suitable name for a combined society. The concerns were not felt insuperable, but considerable care would be needed to ensure that a combined society would indeed be 'more than the sum of the parts'.

* see www.lms.ac.uk/fsi.html

The LMS and support of research

Traditionally, promoting, facilitating and disseminating mathematical research has been the Society's core activity, and a lively discussion ensued as to what extent this is still true. Two aspects in particular emerged: what the Society can do directly, for example by its own grants schemes and journals, and what it can do to influence outside bodies, such as the EPSRC, the Department of Trade and Industry and the Treasury, in their support of mathematics research. The Society needs to maintain effective partnerships without duplicating the efforts of others, perhaps providing expertise and leadership but with resources coming from elsewhere.

Publishing is a major Society activity, but there is a tension between the desire to disseminate high quality research widely and the reality that the publishing profits fund the Society's other activities. (Is the LMS just a highly specialised publishing business that devotes its profits to supporting mathematics?) With academic journal publishing likely to be less lucrative in the future, the Society may need to consider other ventures.

There was a strong feeling that the current research grant schemes were extremely useful, but care was needed to use the Society's limited resources to complement public funding rather than as a substitute for it, and to enable activities that would otherwise not take place.

The LMS and the wider world

Mathematical research cannot flourish in isolation: research might be the peak of the pyramid of mathematical activity, but it needs to be underpinned by a healthy state of UK mathematics in the widest sense. It is important that the public and government appreciate the ubiquity of mathematics in modern life with new challenges requiring new fundamental research as well as application of existing methods. Thus the LMS has become increasingly involved in mathematical education, public policy and public awareness. In 2004 the Society set up its Mathematics Promotion Unit (MPU) which has already done a considerable amount to raise awareness. Nevertheless, resources are limited and the Society needs to identify and focus on areas where it can be effective and where its views have legitimacy and authority.

Effective relationships with other bodies with overlapping interests are crucial to maximise effectiveness and avoid duplication. Traditionally, the 'wider world' of the Society meant the UK, but delineation is now more complex: the Society has many links with European and worldwide organisations, devolution has meant that some issues differ between England, Wales, Scotland and Northern Ireland, and the diversity of bodies such as CMS (Council for Mathematical Sciences), ACME (Advisory Committee on Mathematics Education), HoDoMS (Heads of Departments of Mathematical Sciences), etc. leads to a network of relationships that is confusing both to members and externally.

The Education Committee awards a few small grants for the promotion of mathematics, but much of the Society's effectiveness stems from the efforts a small number of extremely energetic individuals who perhaps deserve greater recognition.

It was suggested that the MPU might set up a statistical database on mathematical activity to be readily available to underpin representations to government and other bodies.

The LMS and its members

Given the 'silent majority' (less than 15% vote in Council elections and the percentage responding to the FSI consultation was small), it is not easy to determine what members want from their Society. However, there is no doubt that the Society journals and grant schemes are valued highly, and that most members favour the award of prizes and the support provided for postgraduate students. Members seem more sceptical about external efforts: most are happy for the Society to try to raise the profile of mathematics, but not at the expense of core research activities. It was noted that members receive indirect benefits, such as reduced price LMS journals and books and eligibility for reciprocal membership of other national societies.

Society meetings generally present high quality but accessible lectures, but more members should be encouraged to attend. Developing the web site could improve communication with the membership. Members might also be canvassed to see what they might be willing to contribute (in the broadest sense) to the Society.

Strategic balance and delivery structures

The final session considered the structure of governance and management best able to deliver the desired activities. Since the move to De Morgan House, there has been a rapid expansion in staff, with a much higher proportion of expenditure used for running the Society and its activities than previously. This move was aimed at reducing pressure on volunteers. In particular the management, recording, accepting and editing of papers submitted to the Society's journals is now done centrally, and there is far more correspondence with government and other agencies than before. But Society officers are still heavily burdened, albeit with different loads. Further financial pressures are likely to come from a future reduction in publishing profits and the increasing pressures from universities who are no longer willing to make allowances for the contribution their staff members make to the Society.

A strategic planning cycle is being introduced, with discussions early each year to consider ongoing and new priorities, leading to a final plan and budget each autumn, for one year ahead in detail and three years in outline. Council's primary function is to decide general policy and set objectives and priorities, and it should be concerned more

cont'd

with overall strategy and looking to the future and less with delivery and management. Several felt that Council was getting too involved in detail, and more might be left to subcommittees. As trustees, Council must take ultimate responsibility for the Society, and is required to take appropriate advice for the financial running of the Society. There are already outside investment advisors, but it was suggested that external expert advice is also needed on publishing activities, given their scope. Several present thought the committee structure should be reviewed, although enhanced forward planning was probably the first priority.

The President closed the retreat by asking officers to prepare papers for the next stages of planning, incorporating views expressed during the discussions. He reiterated a theme that had pervaded the entire retreat: the core values of the Society are paramount and any future direction and structure must be sensitive to members' views.

Kenneth Falconer

NEW EDITOR-IN-CHIEF FOR THE *LMS JCM*

Professor John Cremona (The University of Nottingham) has been appointed as the new Editor-in-Chief of the *LMS Journal of Computation and Mathematics*, as from 1 January 2006. He succeeds the founding EiC, Professor James Davenport (University of Bath).

The all-electronic LMS JCM has now been running for over eight years; open access to the papers is freely available to all at www.lms.ac.uk/jcm/ – subscriber registration is no longer required. The electronic format allows the publication of 'add-ons' such as databases or graphics, as well as 'live' links and updates. Papers published in Volume 8 (2005) were:

- W. Bley and M. Endres *Picard groups and refined discrete logarithms*
- E.B. Davies *Spectral bounds using higher-order numerical ranges*
- D.F. Holt and C.M. Roney-Dougal *Constructing maximal subgroups of classical groups*
- G. Malle and D.P. Roberts *Number fields with discriminant* $\pm 2^a 3^b$ *and Galois group* A_n *or* S_n
- J. Gutierrez and T. Shaska *Hyperelliptic curves with extra involutions*
- I. Chen *A diophantine equation associated to* $X_0(5)$
- C. Jansen *The minimal degrees of faithful representations of the sporadic simple groups and their covering groups*
- J. Howse, G. Stapleton and J. Taylor *Spider diagrams*
- D. Charles and K. Lauter *Computing modular polynomials*
- R.W. Barraclough and R.A. Wilson *Conjugacy class representatives in the Monster group*
- S. Ambrose, M. Neunhöffer, C.E. Praeger and C. Schneider *Generalised sifting in black-box groups*
- R.C. Rodrigues, F. Silva Leite and J. Jakubiak *A new geometric algorithm to generate smooth interpolating curves on Riemannian manifolds*
- M. Girard and L. Kulesz *Computation of sets of rational points of genus-3 curves via the Dem'janenko–Manin method*
- L.C.O. Almeida and S.C. Coutinho *On homogenous minimal involutive varieties*

Three papers have so far been published in Volume 9 (2006).

- L.A. Goldberg, M. Jalsenius, R. Martin and M. Paterson *Improved mixing bounds for the anti-ferromagnetic Potts model on* Z^2
- R. Sinclair and M. Tanaka *A bound on the number of endpoints of the cut locus*
- M. Batty, A.J. Duncan and S.L. Braunstein *Extending the promise of the Deutsch–Jozsa–Høyer algorithm for finite groups*

LMS INVITED LECTURES SERIES

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

Recent lecturers in the series have been:

- F.J. Almgren (1996)
- J. Alperin (1997)
- D. Zagier (1998)
- A. Mielke (1999)
- B. Dubrovin (2000)
- T. Goodwillie (2001)
- P. van Moerbeke (2002)
- M. Fukushima (2003)
- M.W. Davis (2004)
- M.F. Singer (2006)

For the 2007 meeting, proposals are now invited from any member who, in addition to suggesting a topic and lecturer, would be prepared to organize the meeting at the member's own institution or a suitable conference centre. A grant is given to the host department to support attendance at the lectures. Enquiries about this series should be directed to the Programme Secretary at the Society (grants@lms.ac.uk). The deadline for the submission of a proposal is **Wednesday 31 May**. Programme Committee hopes to make a decision on 16 June.

PROOF

Director: John Madden, Stars: Gwyneth Paltrow, Anthony Hopkins, Jake Gyllenhaal Certificate: 12A Runtime: 100 minutes.

Proof is the compelling story of an enigmatic young woman haunted by her father's past and the shadow of her own future, exploring the links between genius and madness, the tender relationships between fathers and daughters and the nature of truth and family. On the eve of her twenty-seventh birthday, Catherine, a young woman who has spent years caring for her brilliant but unstable father, a mathematical genius named Robert, must deal not only with the arrival of her estranged sister, Claire, but also with the attentions of Hal, a former student of her father who hopes to find valuable work in Robert's 103 notebooks.

As Catherine confronts Hal's affections and Claire's overbearing plans for her life, she struggles to solve the most perplexing problem of all: How much of her father's madness – or genius – will she inherit?

The screenplay is an adaptation of David Auburn's beautifully elegant play. The intimate portrayals by this accomplished cast are delivered with emotional accuracy to capture the realities of relationships and the tests of faith.

Buena Vista International press release

NEWSLETTER COLOUR

The *Newsletter* tries to add some colour to the traditional diet of notices of meetings, reports, policy statements, obituaries and so on by including reviews of books, exhibitions or other cultural events that may interest LMS members. Reviews, however, require reviewers, and these are not always easy to find.

When you come across books or events of general mathematical appeal that interest you, let us know, as we may be able to obtain review copies or tickets. You may think there is no point in reviewing 'obvious' items since many others will be doing the same ... we won't go here into the ramifications of that argument.

Contributions should be sent to the LMS Administrator (address on page 2) or to Marcus du Sautoy, to arrive early in month n for publication in month n+1. It is helpful for us to know in advance when a review is pending, so that we can plan the next *Newsletter* layout – or at least let you know about the other 573 contributors ahead of you in the queue. Reviews are on average in the region of 500-800 words.

We look forward to hearing from you.

David Chillingworth

FACES COMPETITION RESULT

Congratulations to the winners of our Publications Catalogue Faces competition: the Heilbronn Institute! As the newest research group on the British mathematical scene, they may have a lot of empty shelves and we hope the ten books kindly donated by CUP will come in handy. We have been assured that no spy-glasses were used in the detection and identification of the 167 faces. Thanks also to the other entrants – there were several very good attempts from LMS members and as far afield as the US and Germany. If you would like to know who we think the faces are, visit www.lms.ac.uk/publications/facescomp.html for an almost-complete list.

WOMEN IN MATHEMATICS DAY 2006

The next Women in Mathematics Day will be held on **28 April** at De Morgan House. Talks will begin at 11 am, after half an hour for coffee, and the day will end at 4.30 pm, followed by a meal at a nearby restaurant. While this is an occasion particularly for women active in mathematics to get together, men are certainly not excluded. Sessions will include talks by practising women mathematicians in a variety of appointments and at different career stages.

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 them informally over lunch, tea etc will have a positive effect on this problem. Feedback from previous meetings has shown that this is one of the aspects of the Women in Mathematics Days that participants say has made a difference to them.

The organisers would be very grateful if all members could encourage women mathematicians, particularly students (including final year undergraduates) and those at an early stage in their career, to attend this meeting. Anyone interested in giving a postgraduate talk should contact Malwina Luczak (m.j.luczak@lse.ac.uk).

Programme

10.30-11.00 **Registration and coffee**

11.00-12.45 **Morning Session**
Speaking order and titles to be confirmed
Dr Christina Cobbold (Glasgow)
Dr Susan Pitts (Cambridge)
Dr Elke Thonnes (Warwick)

12.45-13.45 **Lunch**

13.45-16.00 **Afternoon Session**
Postgraduate speakers
Carole Becker (Sussex)
Rosemary Dyson (Oxford)
Other speakers and titles to be confirmed

16.00-16.30 **Tea**

Followed by an early supper for those able to stay.

Limited funds are available to help with the travel costs of students attending the event. Further details are available from Isabelle Robinson at the Society (contact details below).

To register please contact Isabelle Robinson, Administrative Officer, (tel: 020 7291 9979, fax: 020 7291 9978, email: robinson@lms.ac.uk). The day is free for students and £5 for all others – payable on the day.

L'OREAL UK/ UKRC BURSARIES

UK Resource Centre for Women in Science, Engineering and Technology (UKRC) is pleased to announce that applications are now invited for the new L'Oreal UK/UKRC bursaries for British women returning to scientific research careers, each worth £10,000. There is no age limit for applications. Candidates must be female research scientists who have obtained a PhD and who have taken a career break of at least 12 months and are now returning to their field of study. All applications must be submitted with the required documentation on the prescribed forms by **24 March**. For more information contact Rebecca Marmot (tel: 020 8762 4637, email: fwisbursaries@uk.loreal.com) or visit the UKRC website www.setwomenresource.org.uk.

WOMEN IN MATHEMATICS COMMITTEE

Grants and Fellowships

The Women in Mathematics Committee is responsible for a number of grants and fellowships which are described in more detail below. Please draw these to the attention of anyone you know who might benefit. Both men and women are eligible to apply for both the Child-care Grants and the Grace Chisholm Young Fellowships.

Child-care Grants

The Society recognises that parents are sometimes prevented from attending conferences and meetings or making research visits because, although their own travel and living expenses are funded, there is no provision for the extra costs incurred in looking after children – either at home or (when necessary) at the place visited.

It is the LMS view that institutions should make provision for childcare costs but, since this is not largely the case, the Society is willing to make a supplementary grant as a contribution to the costs. Before applying for the LMS grant, candidates should first approach the institution/conference organisers to see if any arrangements are in place.

Each case will be considered on its individual merits. The normal limit for a grant will be £150 and only one application per person can be made in a year.

Any mathematician working in the UK is eligible to apply for a grant, but if the applicant is not a member then the application must be countersigned by an LMS member. Confirmation of participation and the extra childcare costs that will be incurred is required before payment of the grant can be made.

An application form may be obtained from Isabelle Robinson (details below) or can be downloaded from the LMS website (www.lms.ac.uk/grants/index.html). Completed forms and further enquires should be directed to Isabelle Robinson, Administrative Officer at the Society (robinson@lms.ac.uk). Applications can be made at any time.

Grace Chisholm Young Fellowships

These Fellowships aim to provide some support when a mathematical career is interrupted by family responsibilities, relocation of partner, or other similar circumstance, making possible some continuous mathematical activity and so enabling the Fellow to be in a position to apply for posts when circumstances allow. The Fellowship will give an endorsement of the holder's status as a mathematician, so that the break in formal employment should not prevent them from resuming a career as a mathematician at a later stage.

Each holder would be based in a specific UK Mathematics Department or Research Institute, with the usual duration of the Fellowship being one year. The host institute would receive a contribution of £500 from the LMS or other sponsor, and the holder would receive a personal research support of £500, on condition that this sum would not be topsliced by the host institution. The host insti-

tute would be expected to provide an email address and use of library and IT facilities.

Further details and an application form may be obtained from Isabelle Robinson (contact details below) or can be downloaded from the LMS website (www.lms.ac.uk/grants/index.html). Completed forms and further enquires should be directed to Isabelle Robinson, Administrative Officer at the Society (robinson@lms.ac.uk).

Applications are considered at meetings of the Women in Mathematics Committee in February and October. Deadlines for receipt of applications for these meetings are **31 December** and **15 July**. Decisions will be communicated shortly after these meetings.

Daphne Jackson Research Fellowships

The London Mathematical Society sponsors a half-time Daphne Jackson Trust Research Fellowship. The Daphne Jackson Trust helps talented women scientists, engineers and technology specialists to return to work after a career break by offering half-time, sponsored Fellowships in research laboratories throughout the UK. Since its inception, the Trust has appointed over 100 Fellows, most of whom have resumed a promising career in their chosen field.

Each Fellowship aims to provide advanced research and training opportunities for a well-qualified woman (research scientist, engineer or technology specialist) with a good PhD or honours degree, seeking to resume her career after a minimum three-year break to meet family commitments.

The Fellowship is tenable in a science, engineering or technology department, or related institution at a university of the applicant's choice. Applicants must prepare a proposal for a research project in conjunction with an accredited supervisor. The successful applicants will be elected to a Research Fellowship at their chosen institution for the tenure of their appointment.

The appointment will be for two years, half time. (The stipend will be *pro rata* on the research staff scale.) There is a facility for additional support from a special discretionary fund administered by the Daphne Jackson Trust.

For more information contact: The Fellowship Administrator, The Daphne Jackson Trust, Department of Physics, University of Surrey, Guildford, Surrey GU2 5XH (tel: 01483 689166, email: djmft@surrey.ac.uk) or see the website at: www.daphnejackson.org.

THE RAMANUJAN PRIZE

The Abdus Salam International Centre for Theoretical Physics (ICTP) who is pleased to invite nominations for the 2006 Ramanujan Prize for young mathematicians from developing countries. The Prize is funded by the Niels Henrik Abel Memorial Fund. The Prize carries a $10,000 cash award and an allowance to visit ICTP for a meeting where the Prize winner will be required to deliver a lecture.

The Prize will be awarded annually to a researcher from a developing country who is less than 45 years of age on 31 December of the year of the award, who has conducted outstanding research in a developing country. Researchers working in any branch of the mathematical sciences are eligible. The Prize will be awarded usually to one person, but may be shared equally among recipients who have contributed to the same body of work.

The Prize winner will be selected by ICTP through a committee of five eminent mathematicians appointed in conjunction with the International Mathematical Union (IMU). The deadline for receipt of nominations is **31 July 2006**. The first winner of the Prize for 2005 is Professor Marcelo A. Viana from IMPA, Brazil. Please send nominations to director@ictp.trieste.it describing the work of the nominee in adequate detail. Two supporting letters should also be arranged.

The above item is taken from the 15th issue of the IMU electronic newsletter IMU-Net (see www.mathunion.org/Publications/Newsletter).

THE LEVERHULME TRUST

2006 Philip Leverhulme Prizes

The Leverhulme Trustees are offering up to 25 Philip Leverhulme Prizes for 2006. The prizes are for outstanding young scholars who have made a substantial and recognised contribution to their particular field of study and whose future contributions are held to be of correspondingly high promise. Prizes are available in the following disciplines:

- Earth, Ocean and Atmospheric Sciences
- History of Art
- Medieval, Early Modern and Modern History
- Mathematics and Statistics
- Zoology

The value of each Prize will be £70,000, to be spent within two years. Awards will be made in recognition of the past research achievement of nominees but with the clear recognition that the achievement reflects outstanding promise for future work. Prizes can be used for any purpose to advance the prize holder's research, with the following exceptions: augmentation of the prize holder's salary, capital items and equipment, and institutional overheads.

Prize winners should be under age 36 on Monday 15 May 2006 and should hold a post (irrespective of the source of funding) in a UK institution of higher education or research. Nominations are also accepted for those aged 36 to 39 inclusive if they have had a distinct career change or break. The disciplines selected are intentionally broad, and nominations will be considered regardless of the nominee's departmental affiliation.

A nomination for a Philip Leverhulme Prize must be endorsed by the head of the nominee's institution and must reach the Trust by 4.00 pm on **Monday 15 May 2006**. Decisions will be made by the end of November 2006, and the prizes may be taken up at any time before the end of November 2007.

For nomination materials consult the Trust's website: www.leverhulme.ac.uk to download full nomination details or send an A4-size self-addressed envelope to the Leverhulme Trust, 1 Pemberton Row, London EC4A 3BG, quoting reference PLP by 8 May 2006.

DICK DALITZ

R.H. Dalitz, FRS, Royal Society Research Professor and Fellow of All Souls College, Oxford, died on 13 January 2006. He was famous for (among other things) the Dalitz plot well known to experimental particle physicists, and he also played a major role in organising the Dirac plaque in Westminster Abbey. A former student and LMS member writes with affection about his modesty and the lessons learnt from him about intellectual honesty and respect for the personal value of challenging research.

NEWS FROM THE IMU

ICM2006

The Spanish mathematical community is very pleased to host the ICM2006 in Madrid from 22-30 August. This is the most important mathematical event ever celebrated in Spain, and is a natural continuation of the ICME 1996 in Sevilla and the Third European Congress of Mathematics 2000 in Barcelona.

The ICM2006 is a very special occasion for us. The last 20 years have seen a spectacular progress in Spanish mathematics; both production and quality have increased, opening up new horizons on the international mathematical scene. We are now in a position to meet new challenges by concentrating research on more ambitious goals, with the aim of arriving at the forefront of research on an international level and of participating more actively in the organizational side of mathematics. To this end, in August 2006, the Spanish mathematical community would like to extend the warmest welcome to our colleagues from all over the world, with the intention of strengthening our mutual bonds and encouraging them to visit us more assiduously in the future.

For decades, Spain has been a well known tourist destination, and in recent years has become a country that has opened its doors to immigrants from the Mediterranean area and Latin America. Spain is a thriving young democracy, a country with the desire to grow in a spirit of peace and freedom with all other countries. This is also the aim of the Spanish mathematical community. Though we are also young, we do not lack scope, and the ICM2006 represents our official début on the world scene.

We look forward to receiving our colleagues in Madrid and to extending to them our hospitality. It will provide them with the opportunity of getting to know this vibrant, changing, progressive city, as well as our mathematical community, which is also undergoing great changes. The ICM2006 is a turning point, the driving force for projects that only a few years ago would have been unimaginable. Spanish mathematicians have been greatly favoured by the celebration of the ICM2006, and it is our hope to give much back in return to all our friends in the world of mathematics who choose to visit us there. Registration is now open (www.icm2006.org).

Once again, we extend the most cordial welcome to all in Madrid in August!

Manuel de León
Chair ICM 2006

Special activities

- **Special Lecture**
  John Morgan (Columbia University, New York) *Poincaré Conjecture*
- **Emmy Noether Lecture**
  Yvonne Choquet-Bruhat *Mathematical problems in general relativity*
- **e-Learning Mathematics** a panel discussion organised by the Executive Committee of the Spanish Conference of Deans of Mathematics
  Moderator: Sebastian Xambó Descamps
  Panelists: Hyman Bass, Hilda Bolaños Evia, Ruedi Seiler, Mika Seppälä
- **ICM 2006 closing round table**
  Are pure and applied mathematics drifting apart?
  Moderator: John Ball, IMU President
  Panelists: Lennart Carleson, Ronald Coifman, Yuri Manin, Peter Sarnak

New satellite conferences

- *Automated deduction in geometry workshop*, Pontevedra, 31 Aug - 2 Sept
- *Stochastic analysis in mathematical physics*, Lisboa (Portugal), 4-8 Sep
- *CIMPA-School: New trends in singularities*, Madrid, 14-21 August
- *Monte Carlo and Quasi-Monte Carlo methods in scientific computing conference*, Ulm (Germany), 14-18 Aug
- *Operator algebras, operator theory and applications international summer school and workshop*, ITS-Lisboa (Portugal), 1-5 Sept
- *From Lie algebras to quantum groups workshop*, Coimbra (Portugal), 28 May – 3 Jun
- *Geometric and asymptotic group theory with applications*, UPC Manresa (Barcelona), 1-5 Sept
- *K-theory and non-commutative geometry international congress*, (VASBI) Valladolid, 31 Aug-6 Sept
- *CR geometry and PDEs*, CIRM-Trento (Italy), 3-8 Sept
- *II Euro-Japanese workshop on blow-up*, El Escorial (Madrid), 4-8 Sept
- *Global differential geometry conference*, Münster (Germany), 13-19 Aug
- *Mathematical software international congress*, Castro Urdiales (Cantabria), 1-3 Sept
- *Imprecise probabilities summer school*, URJC-I (Madrid), 24-28 July
- *Complex analysis and potential theory conference*, Gebze Institute of Technology Istanbul (Turkey), 8-14 Sept
- *Geometric aspects of integrable systems*, University of Coimbra (Portugal), 17-19 July
- *Logic of soft computing conference*, Málaga, 13-15 Sept
- *Mathematical techniques and problems in telecommunications workshop*, Leiria (Portugal), 4-8 Sept
- *Statistical tools in knowledge building summer school*, CIM (Coimbra, Portugal), 23-29 July
- *Geometric measure theory*, Napoles (Italy), 1-5 Sept
- *Integrable systems in applied mathematics*, Colmenarejo (Madrid), 7-12 Sept
- *Advances in PDEs geometry*, Madrid, 31 Aug – 3 Sept
- *Communicating mathematics in the digital era*, Aveiro (Portugal), 15-18 Aug
- *Differential geometric methods in theoretical mechanics workshop*, Madrid, 31 Aug – 7 Sept
- *Spatio-temporal modelling international workshop*, Pamplona, 27-29 Sept
- *Algebraic geometry and geometric modeling*, IMUB, Barcelona, 4-8 Sept
- *Mathematical knowledge management conference*, tba (UK), 10-12 Aug
- *New trends in viscosity solutions and nonlinear PDE*, Lisboa (Portugal), 24-28 July
- *Modern mathematical physics summer school*, Zlatibor (Serbia and Montenegro), 3-14 Sept
- *Geometry, topology and physics meeting*, Oporto (Portugal), 20-23 July
- *Analytic aspects of low dimensional geometry workshop*, Warwick (UK), 4-9 Sept
- *Triangulated categories workshop*, Leeds (UK), 13-19 Aug
- *Computational structures technology conference*, Las Palmas de GC, 13-15 Sept
- *Engineering computational technology conference*, Las Palmas de GC, 13-15 Sept

The above item is taken from the 15th issue of the IMU electronic newsletter IMU-Net (see www.mathunion.org/Publications/Newsletter).

GRANTS FOR ATTENDING ICM2006

Council of the London Mathematical Society has set aside a sum of money to help UK mathematicians to attend the International Congress of Mathematicians in Madrid. Full details appeared on the front page of the February *Newsletter*. Applications should be sent to The Administrator at the LMS to arrive by **31 March**. They will be considered by a Council Subcommittee and results should be known by 5 May.

VISITS

DR A.E. MIRONOV

Dr Andrey Mironov (Sobolev Institute of Mathematics of Siberian Branch of the Russian Academy of Sciences, Novosibirsk) will be visiting Loughborough University from 13-31 March within the new LMS Young British and Russian Mathematicians scheme.

Dr Mironov will give a series of survey lectures at Loughborough University on the applications of algebraic geometry and integrable systems to some classical problems in differential geometry and theory of differential operators. The topics will include:

- *Commutative rings of differential operators and algebraic varieties*
- *Minimal Lagrangian submanifolds in complex projective spaces and Novikov-Veselov hierarchy*
- *Orthogonal curvilinear coordinate systems and singular algebraic curves*

For more information contact the host Professor Veselov (A.P.Veselov@lboro.ac.uk).

PROFESSOR D. BAKRY

Professor D. Bakry (Université Paul Sabatier, Toulouse, France) is visiting the UK from 27 February – 18 March. He will give the following seminars:

- London Analysis Seminar, Thursday 2 March
- Working group Imperial College (talk to postgraduates), Friday 3 March
- Oxford, Monday 6 March
- Warwick, Wednesday 15 March
- Swansea, Thursday 16 March

For more detailed local information contact B. Zegarlinski (b.zegarlinski@imperial.ac.uk), T. Lyons (tlyons@maths.ox.ac.uk), N. Jacob (N.Jacob@swansea.ac.uk), M. Hairer (hairer@maths.warwick.ac.uk). The hosting institutions acknowledge the support of London Mathematical Society which makes this visit possible.

PROFESSOR M. JIMBO

Professor Michio Jimbo (Tokyo University, Japan) will be a guest at the Centre for Mathematical Science, City University London from 10-31 March. Professor Jimbo is a renowned expert in the field of integrable systems and representation theory. He has contributed through numerous significant publications to the progress and development of these research topics, most famously through his works on quantum groups. During his stay Professor Jimbo will give a series of three one-hour lectures on his latest articles on correlation functions in integrable spin-chains on:

- Wednesday 15 March
- Monday 20 March
- Wednesday 22 March

These lectures are open to all interested researchers. For details contact Christian Korff (c.korff@city.ac.uk) or visit the www.city.ac.uk/sems/mathematics/seminars.html seminar website. Professor Jimbo's stay is supported the EPSRC Mathematical Sciences Small Grant Scheme.

DR R. SHTERENBERG

Dr Roman Shterenberg (University of Wisconsin, Madison) is visiting University College London from 26 February – 12 March, partially supported by an LMS Scheme 2 grant. Dr Shterenberg is a specialist in periodic differential operators. During his visit he will give the following lectures:

- 3 March, Birmingham University (contact A.Sobolev, A.Sobolev@bham.ac.uk)
- 9 March, London Analysis Seminar (contacts L.Parnovski, leonid@math.ucl.ac.uk and M. Ruzhansky, ruzh@ic.ac.uk)

For further details of this visit contact Leonid Parnovski.

SET THEORY AND ANALYSIS

There will be a one-day meeting on *Set Theory and Analysis* on Wednesday 15 March at the Department of Mathematics, University College, Gordon Street, London WC1, as part of the series *Set theory and its neighbours* and partially supported by 'Cameleon'.

The first talk will be at 11 am. (This is half an hour earlier than previous STN meetings. Please also note the new venue.) The speakers will include:

- Taras Banakh (Lviv/Kielce)
- Mirna Džamonja (UEA, Norwich)
- Peter Komjáth (Eötvös, Budapest)
- Piotr Koszmider (USP, São Paulo)
- Matteo Viale (Paris)

Further information is available via the webpage: www.ucl.ac.uk/~ucahcjm/stn.html, or from Charles Morgan (charles.morgan@ucl.ac.uk). We hope to keep the meetings fairly relaxed, allowing plenty of opportunity for informal discussion. We welcome and encourage anyone to participate. There may be some financial support for graduate students – contact Charles Morgan for details. We are very grateful to UCL Mathematics Department for allowing us to host the meeting there, and to the LMS for financial support.

Charles Morgan & Mirna Džamonja

OWL MEETING

The joint Oxford-Warwick-London (OWL) seminar on Combinatorics and Statistical Physics will meet at the University of Warwick on Wednesday 3 May. The speakers will be Martin Dyer (Leeds), Fabio Martinelli (Rome) and Boguslaw Zegarlinski (Imperial). All are welcome, and we can provide some financial support for students to attend.

This event is part of an Oxford-Warwick-London Series supported by the London Mathematical Society and the British Combinatorial Committee. The first meeting of the series was at QMUL on Friday 12 November, and the second was in Oxford on 7 February. For more information, contact Leslie Goldberg (leslie.goldberg@dcs.warwick.ac.uk) or see the webpage (www.dcs.warwick.ac.uk/people/academic/Leslie.Goldberg/owl.html).

LMS PROGRAMME AND CONFERENCE FUND

Programme Committee has awarded grants to support the following conferences and meetings. These are open to all members. If you wish to attend, or would like more information, please contact the organiser.

Date/Venue	Title	Organiser/email
15 March 2006 Oxford	One-Day Meeting in Combinatorics	A. Scott scott@maths.ox.ac.uk
5-6 May 2006 Queens University Belfast	Operator Algebra Workshop 2006	M. Mathieu, I. Todorov m.m@qub.ac.uk i.todorov@qub.ac.uk
17-18 May 2006 Reading	Reading 2-day Combinatorics Colloquium (to celebrate 50 years of Combinatorics at Reading)	A.J.W. Hilton a.j.w.hilton@reading.ac.uk
26-29 August 2006 Oxford	Workshop on Stochastic Analysis and Applications	Z. Qian qianz@maths.ox.ac.uk

SPECTRAL THEORY AND HARMONIC ANALYSIS

A workshop on *Spectral Theory and Harmonic Analysis* will take place on 16 March at the School of Mathematics, University of Birmingham. This one-day event is funded in part by the LMS Scheme 3 grant *The UK Harmonic Analysis and PDEs Research Network*. The speakers are:

- Lyonell Boulton (Heriot Watt)
- Brian Davies (King's College London)
- Misha Rudnev (University of Bristol)
- Jim Wright (University of Edinburgh)

The first lecture will begin at 10am. It is suggested that where possible participants arrive in the early evening of the 15th (Wednesday) in time for dinner at about 7.30pm. Limited financial support is available for PhD students, and postdoctoral researchers. For further details contact Jonathan Bennett (J.Bennett@bham.ac.uk) or visit the website http://web.mat.bham.ac.uk/analysisworkshop.

ISAAC NEWTON INSITUTE

Noncommutative Geometry

24 July – 22 December 2006: organisers: A. Connes (IHES), S. Majid, (Queen Mary), A. Schwarz (UC Davis)

Workshops

- *Noncommutative Geometry and Cyclic Cohomology*, 31 July – 4 August
- *Noncommutative Geometry and Fundamental Physics*, 4-8 September
- *Trends in Noncommutative Geometry*, 18-22 December

Please refer to the website www.newton.cam.ac.uk/programmes/NCG/ for full details on how to apply for these workshops.

COMBINATORICS AT OXFORD

A one-day meeting in Combinatorics will be held in Oxford on Wednesday 15 March. The meeting will take place in the Mathematical Institute, with talks starting at 11.00 am and coffee available beforehand from 10.30am. This year's speakers will be Peter Cameron (QMUL), Alan Frieze (Carnegie Mellon), Bert Gerards (CWI Amsterdam), Marc Noy (Univ. Politécnica de Catalunya) and Angelika Steger (ETH Zürich).

Anyone interested is welcome to attend. Some funds may be available to contribute to the expenses of research students who wish to attend the meeting. Further details can be obtained from Alex Scott (scott@maths.ox.ac.uk) or from the web page at www.maths.ox.ac.uk/combinatorics. Support for this event from the London Mathematical Society and the British Combinatorial Committee is gratefully acknowledged.

CATEGORY THEORY AND ITS APPLICATIONS

A Conference in Memory of Saunders MacLane

A conference in memory of Saunders MacLane will be held at the University of Chicago from 7-11 April. A number of MacLane's students, colleagues, collaborators, and friends will speak during the conference. Its primary mathematical focus will be recent applications of category theory. As MacLane's book *Categories for the working mathematician* emphasized, he was interested both in the internal development of category theory and in its development with a view towards applications in other areas of mathematics. The conference will highlight recent work that introduces new category theory aimed directly at applications in differential geometry (and hence to mathematical physics) and in algebraic topology. As Saunders would very much have liked, most of the speakers will be young mathematicians actively engaged in just such research.

- Steven Awodey (Carnegie Mellon University)
- Julie Bergner (Kansas State University)
- Eugenia Cheng (University of Chicago)
- Alissa Crans (Ohio State University)
- Zbigniew Fiedorowicz (Ohio State University)
- Thomas Fiore (University of Chicago)
- Peter Freyd (University of Pennsylvania)
- Nick Gurski (University of Chicago)
- Peter Johnstone (Cambridge University)
- Andre Joyal (University of Quebec)
- William Lawvere (SUNY at Buffalo)
- Peter May (University of Chicago)
- Ieke Moerdijk (University of Utrecht)
- Michael Shulman (University of Chicago)
- Danny Stevenson (University of Adelaide)

For further details about the conference visit the website www.math.uchicago.edu/~may/MACLANE. The conference organizers are Peter May and Eugenia Cheng. For information about lodging, travel, and registration see www.math.uchicago.edu/~eugenia/maclane.

GROUPS IN GALWAY

The annual conference Groups in Galway will be held at National University of Ireland, Galway, 19-20 May. The scope of the conference covers all areas of group theory, applications, and related fields. The following is a provisional list of speakers:

- Cédric Bonnafé (Université de Franche-Comté, France)
- Peter Cameron (Queen Mary, University of London, UK)
- Rod Gow (UC Dublin, Ireland)
- John Murray (NUI, Maynooth, Ireland)
- Shane O'Rourke (Cork Institute of Technology, Ireland)
- Gretchen Ostheimer (Hofstra University, USA)
- Götz Pfeiffer (NUI, Galway, Ireland)
- Martyn Quick (St Andrews, UK)
- Sarah Rees (University of Newcastle, UK)
- Chiara Tamburini (Università Cattolica del Sacro Cuore, Italy)

All who are interested are invited to attend. Details of the talks and their scheduling will be posted at www.maths.nuigalway.ie/gig06.html closer to the event. This year the conference will feature a poster session. Postgraduate students who attend are invited to submit posters for inclusion in the session.

For further information, please contact one of the conference organizers, Rachel Quinlan (rachel.quinlan@nuigalway.ie) or Dane Flannery (dane.flannery@nuigalway.ie).

INVERSE PROBLEMS WORKSHOP

An Inverse Problems Workshop will be held in the Department of Mathematical Sciences at the University of Liverpool on Monday 20 March. The programme is as follows:

- Marco Marletta (University of Cardiff) *Weak stability for inverse Sturm-Liouville problems with finite data*
- Daniel Lesnic (University of Leeds) *Inverse source problems for the heat equation*
- Roy Pike (Kings College London) *Can you hear the shape of the vocal tract?*
- Brian Sleeman (University of Leeds) *Weyl asymptotics and acoustic scattering by irregular obstacles*

For further details contact Ke Chen, Dept of Mathematical Sciences, The University of Liverpool, Liverpool L69 7ZL (tel: 0151 794 4741, email: k.chen@liverpool.ac.uk). The meeting is jointly supported by the LMS and the Department of Mathematical Sciences, University of Liverpool.

NONLINEAR PARTIAL DIFFERENTIAL EQUATIONS AND APPLICATIONS

A conference on Recent Advances in Nonlinear Partial Differential Equations and Applications will be held on 7-11 June in Toledo, Spain. This event, organized with the cooperation of the Society for Industrial and Applied Mathematics (SIAM) and the American Mathematical Society (AMS), is held in honour of Peter D. Lax and Louis Nirenberg, on the occasion of their 80th birthdays.

The conference focuses on the modern theory of nonlinear partial differential equations and their applications. Topics such as conservation laws, transonic flows, relativistic flows, formation of singularities, turbulence, dispersive waves, the ocean-atmosphere system and climate modes, combustion, materials science, brain spatiotemporal dynamics and others, as well as the functional analytic approach to nonlinear PDE stand in the foreground and offer important challenges to be addressed at this conference. Confirmed speakers are:

- L.L. Bonilla (Universidad Carlos III)
- H. Brezis (Université Paris VI)
- A.J. Chorin (UC Berkeley)
- D. Christodoulou (ETH Zurich)
- C. Dafermos (Brown University)
- A.S. Fokas (University of Cambridge)
- F. Golse (Université Paris VII)
- A. Grunbaum (UC Berkeley)
- J. Jimenez (Universidad Politecnica de Madrid)
- B. Keyfitz (Fields Institute, Toronto and University of Houston)
- S. Klainerman (Princeton University)
- C.D. Levermore (University of Maryland)
- Y.Y. Li (Rutgers University)
- A. Linan (Universidad Politecnica de Madrid)
- A.J. Majda (Courant Institute, NYU)
- D.W. McLaughlin (Courant Institute, NYU)
- C.S. Morawetz (Courant Institute, NYU)
- P. Sarnak (Princeton University)
- S. Venakides (Duke University)

Information on how to participate, register and more, is available at www.mat.ucm.es/~ln06. Deadline for early registration is **31 March**. For more information email ln06@mat.ucm.es.

CONFERENCE IN HONOUR OF J.C. MCCONNELL AND J.C. ROBSON

There will be a meeting at the Mathematics Department of the University of Leeds from 5-6 May to mark the retirals of John McConnell and Chris Robson. The invited speakers and the titles of their talks are as follows:

- I.G. Gordon (Glasgow) *Representations of rational Cherednik algebras*
- L. Levy (Wisconsin) *Modules over HNP rings*
- R. Rouquier (Leeds) *Calabi-Yau algebras*
- L.W. Small (San Diego) *Noetherian rings: Before and after McConnell and Robson*
- S.P. Smith (Seattle) *Stacks and noncommutative algebraic geometry*
- A. Smoktunowicz (Edinburgh) *Some results on rings with Gelfand-Kirillov dimension less than three*
- J.T. Stafford (Michigan) *Noncommutative surfaces*

The conference will start at 2.00 on Friday 5 May and end at 12.30 on 6 May, with a conference dinner on the Friday evening. Further details may be obtained from the web page www.maths.leeds.ac.uk/~pmtwc/ringtheory/ or from the organisers, who are Ken Brown (kab@maths.gla.ac.uk), Bill Crawley-Boevey (w.crawley-boevey@leeds.ac.uk), Tom Lenagan (tom@maths.ed.ac.uk) and Toby Stafford (jts@umich.edu).

Financial support has been provided by the Edinburgh and London Mathematical Societies, the Glasgow Mathematical Journal Research Support Fund and the University of Leeds.

LMS NORTHERN REGIONAL MEETING

University of Leeds
Friday 3 July 2006

U. Haagerup
(University of Southern Denmark, Odense)
Random matrices and operator algebras

N.J. Kalton
(University of Missouri, USA)
An application of classical Banach space theory to partial differential equations

For further details, see the website www.maths.leeds.ac.uk/pure/analysis/lms or contact H.G. Dales (garth@maths.leeds.ac.uk).

EQUATIONS: THE GOOD, THE BAD AND THE UGLY

Equations seem to be quite the rage at the moment. Science departments across the country, desperate for media coverage, have mercilessly exploited the power of an equation to make the news. However silly the research, if it can be captured by an equation, it's sure to grab the headlines. We've had a formula for parallel parking; a formula to predict the future of a marriage; even a formula to help British people understand their fear of eating with chopsticks. In fact one British newspaper now has a policy of binning any press release announcing the discovery of a new equation to solve the world's problems.

Even the number 149 bus in my neighbourhood in London has for some months been sporting an equation down its length. A complicated string of cosines and Greek letters = headache it reads. That's probably most people's impressions of the language of mathematics. And yet Smirnoff Ice thought it an intriguing enough device to attract young drinkers to its product.

Each time I looked at the Smirnoff equation I became more and more frustrated. I couldn't understand what it was trying to describe. Eventually I phoned the advertising agent to ask what the equation meant, and someone admitted that he'd just spliced together bits of formulas that intrigued him graphically to make a meaningless equation.

The graphical content of equations was also at the heart of an exhibition that was making the news last month. Justin Mullins's *Mathematical Photography: an exhibition of the world's most beautiful equations* was on show for two weeks at the beginning of February in Lauderdale House in Highgate, London. It attracted the attention of *The Guardian*, the *BBC World Service* and the *New Scientist* together with a huge number of other visitors intrigued by the mysterious equations that covered the walls.

The pieces are quite simple. Black typography on white background in 1 metre by 70 cm frames. The pictures are reminiscent of certain pieces of pop art from the 1970s which explored typography as Art. But for most viewers to the exhibition the message contained in each picture was far from simple. However, unlike the Smirnoff formula, these equations were full of meaning. Alongside each equation is the title of the piece and, in the majority of cases, a description of the mathematical content of the equation. It is interesting to hear what Mullins, who is not a mathematician, says about the importance of these texts because they are an integral part of the viewer's experience.

'The most common request I receive is to explain my work and I am partially sympathetic. On the one hand, I want my pictures to be judged in their own right and for

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people to come to their own conclusions about their value. It cannot be right for me to tell people what to feel about a picture. But on the other hand, I recognise that mathematics is an alien world, in which many people rapidly become lost. The text is intended as signposts to help people on their way.'

As a didactic tool they are quite effective because many viewers seemed sufficiently intrigued by the secret message bound up in the picture that they spent most of the time reading the accompanying text rather than looking at the equation. The equations range not only over mathematics but also physics, chemistry and biology. Mullins has had a lot of fun matching equations to the titles of his pieces. *Beauty* is paired with Euler's equation connecting the five great constants of mathematics: e, i, π, 1 and 0. *Ugliness* on the other hand is represented by the 1,936 graphs that computers checked to complete the Four Colour Map Theorem. Curiously, this is one of the more visually interesting pictures in the exhibition. *Surrealism* is expressed by the equation '1+1=3 for very large values of 1'.

This is not of course the first exhibition to exploit mathematics as art. French artist Bernar Venet mounted an exhibition in Brazil and Europe of huge wall paintings depicting amongst other things complex homological diagrams. The exhibition was reviewed in the June/July 2002 edition of the *Notices* of the AMS www.ams.org/notices/200206/200206-body-pdf.html and elicited a hostile response from some in the mathematical community.

Mullins quotes Bertrand Russell at one point during the exhibition: 'Mathematics rightly viewed possesses not only truth but supreme beauty… a beauty cold and austere like that of a sculpture'. Russell was not of course referring to the beauty of the typography but rather the inner beauty contained in the story behind the equation. And that is in my mind why ultimately graphical art seems the wrong medium to express this beauty. The previous show at Lauderdale House had been an exhibition of the Poetry on the Tube posters. For the uninitiated, these mathematical equations must have felt a little like visiting a gallery of Japanese Haiku in the original Japanese script but with little translation. The graphics are striking but the beauty is ultimately in the meaning.

'Mathematicians are explorers', Mullins writes and 'my role is that of a photographer who retraces their steps.' Judging by the amount of time people spent reading the texts accompanying the pictures, I wonder whether visitors found the explorer's log a better vantage point to view the beauty Russell was talking about. But Mullins deserves credit that it was his 'photographs' that drew crowds to Highgate to find out more about the beauty bound up in these equations.

[*Many of the equations and accompanying texts can be viewed online at www.justinmullins.com. The Newsletter would be interested to hear readers' responses to the exhibition.*]

Marcus du Sautoy
Oxford

THE FIELDS INSTITUTE

Geometric Applications of Homotopy Theory

1 January – 30 June 2007: organisers: Rick Jardine (Western Ontario), Gunnar Carlsson (Stanford), Dan Christensen (Western Ontario).

Workshops:

- *Higher categories and their applications*
  9-13 January 2007
- *Homotopy theory of schemes*
  26– 30 March 2007
- *Stacks in geometry and topology*
  14-18 May 2007

Visit www.fields.utoronto.ca for details and application procedures.

58TH BRITISH MATHEMATICAL COLLOQUIUM

Second Announcement

The 58th British Mathematical Colloquium will be held at the University of Newcastle, from 1pm on Monday 10 April till 1pm on Thursday 13 April 2006.

Plenary speakers:

- Nigel Higson (Penn State, USA)
- Victor Kac (MIT, USA)
- Alexander Kirillov (Pennsylvania, USA)
- Preda Mihailescu (Göttingen, Germany)

Morning speakers include:

- Roger Bielawski (Edinburgh)
- Gordon Blower (Lancaster)
- Mihalis Dafermos (Cambridge)
- Michael Farber (Durham)
- Jim Howie (Heriot-Watt)
- Graham Niblo (Southampton)
- Charles Read (Leeds)
- Manfred Schocker (Swansea)
- Anthony Scholl (Cambridge)
- Eugene Shargorodsky (King's College London)
- Nicole Snashall (Leicester)

Analysis and Geometry on Groups special session

- Paul Baum (Penn State, USA)
- Alain Valette (Neuchatel, Switzerland)
- Andrzej Zuk (CNRS, Paris, France)

Operator Theory special session

- Wolfgang Arendt (Ulm)
- Miroslav Englis (Czech Academy of Sciences)
- Joel Shapiro (Michigan State University, USA)

Public Lecture
David Acheson (Oxford)

In addition, there are splinter groups being organised allowing for contributed talks in the following areas:

- Algebraic topology
- Arithmetic algebraic geometry
- Differential equations
- Geometry and topology
- Group theory and its applications
- History of Mathematics – Cayley and Slyvester and their legacy
- Hyberbolic geometry
- Logic
- Operator algebras
- Operator theory
- Random matrices and operators
- Semigroups and monoids

Suggestions for further splinter groups are welcome (email bmc06@ncl.ac.uk).

To register, book accommodation, apply to give a splinter group talk, an email address must be entered on www.ncl.ac.uk/bmc06. University accommodation can be booked if it is available. Limited funds are available to support attendance of PhD students at the BMC.

The conference gratefully acknowledges the support of the London Mathematical Society, the Edinburgh Mathematical Society, the Engineering and Physical Sciences Research Council, the SAgE Faculty Research Committee of Newcastle University, Newcastle City Council, Cambridge University Press and Springer Verlag.

EPSRC

Methods of non-equilibrium Statistical Mechanics in Turbulence

LMS/EPSRC Short Course

London Mathematical Society

University of Warwick, 10–14 July 2006
Organisers: Dr S. Nazarenko & Dr O. Zaboronski

Methods of non-equilibrium statistical mechanics play an increasingly important role in modern turbulence research. Unfortunately, the range of relevant tools and methods of non-equilibrium statistical mechanics is so wide and they are developing so fast that there is not a single text book covering the subject. The goal of this Short Course is to rectify the situation by giving an introduction to modern methods of statistical mechanics in turbulence. The Course will be given in parallel with an international workshop devoted to the same subject, and will aim to prepare graduate students and young researchers for this workshop. Three world class experts in statistical physics and turbulence have kindly agreed to teach at the School and will give the following lectures:

- Professor John Cardy (Oxford University)
  Field theory and non-equilibrium statistical mechanics
- Professor Gregory Falkovich (Weizmann Institute, Israel)
  Turbulence theory as part of statistical physics
- Professor Krzysztof Gawedzki (ENS Lyon)
  Soluble models of turbulent transport

Lectures will be accompanied by daily example classes led by specialists in the field. To help participants to prepare for the Course, each lecturer is compiling a reading list for his course. As soon as the lists are ready, they will be available on the course website at: www.maths.warwick.ac.uk/%7esnazar/turb_symp/WTS.html.

The registration fee to attend is £100. The accommodation costs for all UK-based research students are covered by EPSRC. Participants must pay their own travel costs. EPSRC-supported students can expect that their registration fees and travel costs will be met by their departments from the EPSRC Doctoral Training Account. Postdocs and non-UK students will be required to pay their own subsistence costs and the registration fee (£388 in total).

Application forms may be obtained from Isabelle Robinson, Administrative Officer, London Mathematical Society (email: robinson@lms.ac.uk, tel: 020 7291 9979, fax: 020 7291 9978) or an on-line form is available on the LMS website: www.lms.ac.uk/activities/research_meet_com/short_course/30_poster.html.

Numbers will be limited and those interested are advised to make an early application. The closing date for applications is **Friday 26 May 2006**. All applicants will be contacted by the London Mathematical Society approximately one week after this deadline; we will not be able to give information about individual applications before then. Please do not send any money until we ask.

EPSRC

Stability, Coupling Methods and Rare Events

LMS/EPSRC Short Course

London Mathematical Society

Heriot-Watt University, Edinburgh, 4–9 September 2006

Organisers: Professor Serguei Foss & Dr Takis Konstantopoulos

This course provides an overview on three important topics in modern probability theory. The lectures will be supported by tutorial classes. The course lecturers are:

- S. Foss and T. Konstantopoulos (Heriot-Watt University)
  Elements of stochastic stability
- A. Puhalskii (University of Colorado at Denver) and S. Foss (Heriot-Watt University)
  Large deviations and rare events
- H. Thorisson (University of Iceland)
  Coupling methods

Two guest lectures will be given by:

- S. Asmussen (University of Aarhus)
  Tail asymptotics for sums of dependent heavy-tailed random variables
- I. Kontoyiannis (Athens University of Economics)
  Information-theoretic ideas in Poisson approximation and concentration

The course is aimed at mathematics and statistics postgraduate students and students from closely related fields (theoretical computer science, physics, etc), who are interested in any area that requires a knowledge of asymptotic and coupling methods of probability theory. Postdocs and young researchers are also welcome to attend.

It assumes familiarity with elements of probability theory, including basic limit theorems, Markov chains and elements of stochastic processes. For further information, see: www.ma.hw.ac.uk/~takis/probcourse06.

The registration fee to attend is £100. The accommodation costs for all UK-based research students are covered by EPSRC. Participants must pay their own travel costs. EPSRC-supported students can expect that their registration fees and travel costs will be met by their departments from the EPSRC Doctoral Training Account. Postdocs and non-UK students will be required to pay their own subsistence costs and the registration fee (£400 in total).

Application forms may be obtained from Isabelle Robinson, Administrative Officer, London Mathematical Society (email: robinson@lms.ac.uk, tel: 020 7291 9979, fax: 020 7291 9978) or an on-line form is available on the LMS website: www.lms.ac.uk/activities/research_meet_com/short_course/32_poster.html.

Numbers will be limited and those interested are advised to make an early application. The closing date for applications is **Friday 7 July 2006**. All applicants will be contacted by the London Mathematical Society approximately one week after this deadline; we will not be able to give information about individual applications before then. Please do not send any money until we ask.

ISAAC NEWTON INSTITUTE FOR MATHEMATICAL SCIENCES

NONCOMMUTATIVE GEOMETRY AND CYCLIC COHOMOLOGY

31 July – 4 August 2006

in association with the Newton Institute programme entitled *Noncommutative Geometry* (24 July to 22 December 2006)

Organisers: Alain Connes, Shahn Majid and Albert Schwarz.

Theme of conference: This first workshop will focus on the mathematics of noncommutative differential geometry, centered on cyclic cohomology. Current trends to be covered include:

- Strong progress in noncommutative Chern-Weil theory and the cyclic cohomology of Hopf algebras, sparked by work on the transverse index theory of foliations
- The growing deep connection between noncommutative geometry and number theory, in particular the relation between the theory of motives in the sense of Grothendieck and noncommutative geometry
- Related developments in algebraic K-theory, triangulated categories, quantum group methods

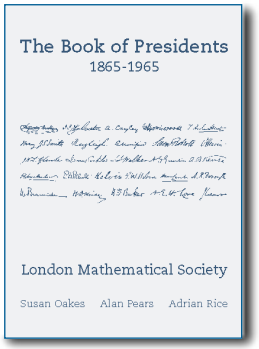
Invited speakers: (to be confirmed): P. Baum, A. Connes, C. Consani, N. Higson, M. Karoubi, M. Khalkhali, M. Kontsevich, G. Landi, M. Marcolli, H. Moscovici, R. Nest, R. Plymen, J. Roe, G. Segal, B. Tsygan, M. Wodzicki, G. Yu.

Location and cost: The conference will take place at the Newton Institute and accommodation for participants will be provided in single study bedrooms with shared bathroom at Wolfson Court. The conference package, costing £480, includes accommodation, breakfast and dinner from dinner on Sunday 30 July 2006 to breakfast on Saturday 5 August 2006, and lunch and refreshments during the days that lectures take place. Participants who wish to attend but do not require the Conference Package will be charged a registration fee of £40. Self-supporting participants are very welcome to apply.

Further information and application forms are available from the web at: www.newton.cam.ac.uk/programmes/NCG/ncgw01.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 **28 April 2006**.

The Book of Presidents
1865-1965



The London Mathematical Society was established during the energetic and confident heyday of Victorian Britain. Although several learned societies pre-date it, the LMS can claim to have led the way in a number of respects: firstly, in the rigorous reviewing standards it set from the outset, with two independent reviewers being appointed for each paper submitted to the Proceedings; and secondly, in its acceptance of women as full members, which was progressive for its day.

This volume, which contains over eighty photographs, concentrates on the first 100 years of the Society's existence and traces its evolution through its Presidents and De Morgan Medallists, each of whom was a pre-eminent mathematician of his or her day. Through them we learn which branches of the discipline were in vogue at any particular time, and come to appreciate the Society's rich history.

The Book of Presidents 1865-1965 is available from the London Mathematical Society. Email lms@lms.ac.uk to place your order. The LMS members price is £15, the full price is £19.

CALENDAR OF EVENTS

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

MARCH 2006

3-4 Conference in Honour of J.A. Green, Oxford (345)
13-17 3-manifolds after Perelman, ICMS Workshop, Edinburgh (342)
15 Combinatorics Meeting, Oxford (346)
15 Set Theory and Analysis, University College London (346)
16 Spectral Theory and Harmonic Analysis, Birmingham (346)
17 Edinburgh Mathematical Society Meeting, Dundee (341)
20 Inverse Problems Workshop, Liverpool (346)
22 Postgraduate Open Day, Loughborough (345)
27-31 Mathematical Population Genetics ICMS Workshop, Edinburgh (342)
27-7 Apr Non Equilibrium Dynamics of Interacting Particle Systems School, INI, Cambridge (341)

APRIL 2006

3-7 Number Theory & Polynomials Workshop, Bristol (344)
3-7 Jordan Structures in Analysis & Geometry Conference, Taiwan (342)
7-11 Category Theory and its Applications, Chicago (346)
10-13 BMC, Newcastle (346)
10-13 New Directions in Proof Complexity Workshop, INI, Cambridge (343)
11-13 Mathematical Education of Engineers IMA Conference, Loughborough (342)
19-21 Postgraduate Group Theory Conference, Southampton (345)
24-27 BAMC, Keele (345)
28 Women in Mathematics Day, De Morgan House, London (346)
28 Edinburgh Mathematical Society Meeting, Aberdeen (341)

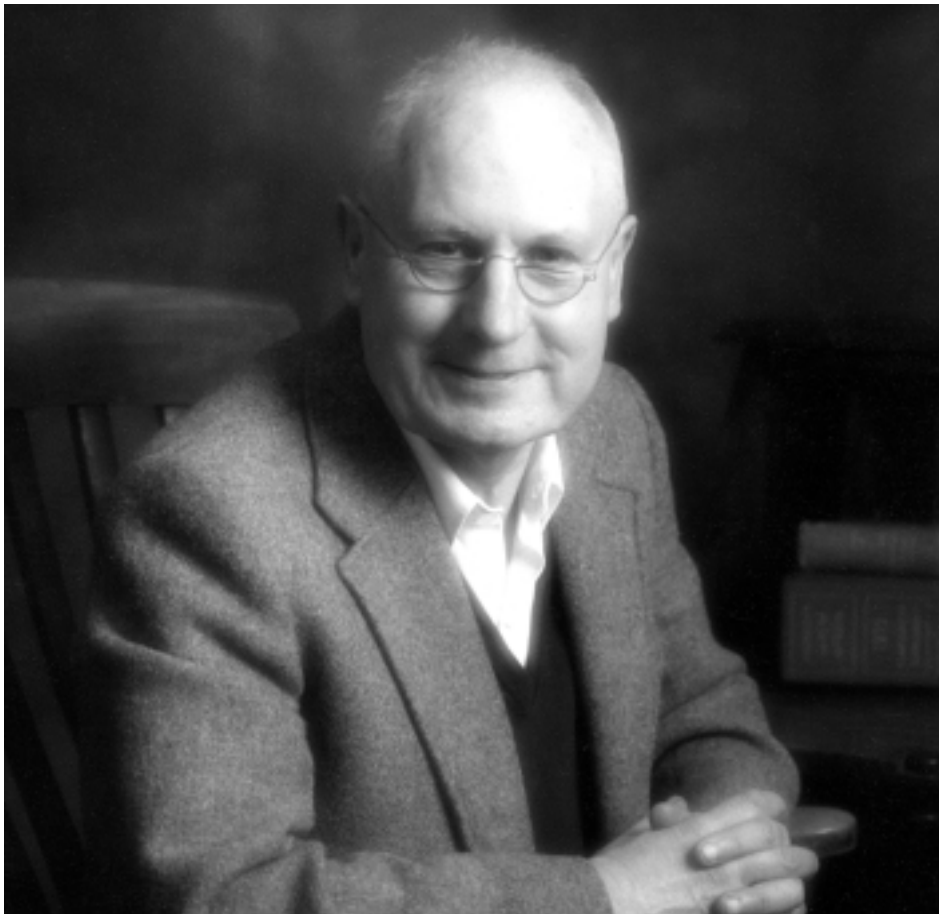
MAY 2006

1-30 Jun Random Graphs and Large Scale Real World Networks, Singapore (343)
2 Gresham College Geometry Lecture, City of London School, London (343)
3 OWL Meeting, Warwick (346)
5-6 McConnell and Robson Retirals Conference, Leeds (346)
8-12 Constraints and Verification Conference, INI, Cambridge (345)
8-19 Combinatorics, Automata & Number Theory Conference, Liège, Belgium (339)
15 LMS Midlands Regional Meeting, Leicester (346)
19-20 Groups in Galway, Galway (346)
26 Edinburgh Mathematical Society Meeting, St Andrews (341)

JUNE 2006

1-30 Jul Algorithmic Biology, Singapore (344)
6-30 First Passage & Extreme Value Problems in Random Processes Conference, INI, Cambridge (340)
7-11 Nonlinear PDEs and Applications Conference, Toledo, Spain (346)
13-16 Mathematics of Finite Elements & Applications Conference, Brunel (336)
14-17 SING 2 & IMGTA, Foggia, Italy (342)
16 LMS Meeting, London
19-23 Quantile Regression, ICMS Workshop, Edinburgh (342)
19-30 Combinatorial Optimization SMS NATO Summer School, Canada (343)
25-2 Jul Junior Mathematical Congress 2006, Romania (340)
26-30 Applied Asymptotics & Modelling ICMS Workshop, Edinburgh (342)

JOHN WILLIAM SCOTT CASSELS
DE MORGAN MEDALLIST
1986



Citation: Ian Cassels has made many distinguished contributions to the theory of numbers; possibly his most important work is on the arithmetic of elliptic curves, published in a series of papers between 1959 and 1964. These papers remain fundamental to our understanding of the problems involved and have provided the foundation for much subsequent work. Ian Cassels has contributed to almost all branches of number theory. His work includes numerous papers on Diophantine Approximation and the Geometry of Numbers, and seminal contributions to the theory of quadratic forms and sums of squares. He has written excellent books on Diophantine Approximation, Geometry of Numbers, Algebraic Number Theory and Rational Quadratic Forms.