

### 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)  
[page 17]

**Friday 3 July**  
Northern Regional  
Meeting, Leeds  
U. Haagerup  
N. Kalton  
[page 17]

**Friday 25 August**  
ICM, Madrid  
R. Bryant  
G. Toussaint  
(LMS-RSME Special  
Lectures)  
[page 20]

### SCHEME 2: VISITORS

There has been a fall in applications for Scheme 2 Visitors grants this year. Please tell us if you are having any difficulties using this scheme, and meanwhile Programme Committee would like to encourage applications. Contact the Programme Secretary, Stephen Huggett (tel: 01752 232710, email: s.huggett@plymouth.ac.uk) or Sylvia Daly (tel: 020 7291 9971 email: grants@lms.ac.uk), who will be pleased to discuss proposals informally with potential applicants and give advice on the submission of an application.

### VISIT OF PROFESSOR S. HERMILLER

Professor Susan Hermiller (University of Nebraska) will be visiting the Mathematics Departments at Leicester, Newcastle and Warwick during the period 7-20 May. Her visit is supported by an LMS Scheme 2 grant. She will give lectures at all three venues, the provisional dates being 8 May (Leicester), 12 May (Newcastle) and 18 May (Warwick). Her research area is geometric group theory. For further details, contact Rick Thomas (rmt@mcs.le.ac.uk), Sarah Rees (Sarah.Rees@newcastle.ac.uk) or Derek Holt (dfh@maths.warwick.ac.uk).

### VISIT OF PROFESSOR R.L. REBARBER

Professor Richard L. Rebarber (University of Nebraska, Lincoln) is visiting the UK from 30 March – 30 April, partially supported by an LMS Scheme 2 grant. Professor Rebarber is a specialist in mathematical control theory. During his visit he will give lectures at the following institutions:

- Imperial College, Thursday 30 March, contact G. Weiss (g.weiss@imperial.ac.uk)
- University of Exeter (at Tremough), Thursday 13 April, contact S. Townley (townley@maths.ex.ac.uk)
- University of Bath, Thursday 27 April, contact H. Logemann (hl@maths.bath.ac.uk)

For further details of this visit contact H. Logemann, University of Bath (hl@maths.bath.ac.uk).

### VISIT OF PROFESSOR J.M. MELENK

Professor Jens Melenk (Vienna University of Technology) has an outstanding international reputation for his research in computational mathematics, especially for his work on hp-finite element methods and for work on meshfree methods. He is visiting Reading, Oxford and Imperial College London, as follows:

- 19-21 April: short graduate course on *hp-finite element methods* at the University of Reading
- 20 April at 2.00 pm: seminar at Oxford
- 25 April at 3.00 pm: seminar at Imperial College

His visit is supported by an LMS Scheme 2 grant. For further details contact Beatrice Pelloni (b.pelloni@reading.ac.uk), Nick Trefethen (Int@comlab.ox.ac.uk) or J. Barrett (jwb@ic.ac.uk).

## VISIT OF PROFESSOR FENG-YU WANG

Professor Feng-Yu Wang (Beijing Normal University, China) will visit the UK from 24 April – 12 May. His visit is funded by an LMS Scheme 2 grant. His visit plan is as follows

- 24-29 April, University of Manchester
- 30 April – 5 May, University of Wales Swansea
- 6-12 May, University of Oxford

During his visit he will give seminars at the University of Manchester (contact T Zhang: tzhang@maths.man.ac.uk), East Midlands Stochastic Analysis Seminar at the University

of York (contact Z. Brzezniak: zb500@york.ac.uk), University of Wales Swansea (contact J-L Wu: J.L.Wu@swansea.ac.uk), University of Oxford (contact Z Qian: qianz@maths.ox.ac.uk). For further details contact Jiang-Lun Wu (J.L.Wu@swansea.ac.uk).

## ALL HANDS MEETING

The Fifth UK e-Science All Hands Meeting (AHM 2006) will be held from 18-21 September at the East Midlands Conference Centre in Nottingham. The aim of the meeting is to provide a forum in which e-Science projects from all disciplines can be discussed, and where the results from projects can be demonstrated. The conference will therefore feature presentations by groups from throughout the UK who are active in e-Science projects, in addition to poster sessions, mini-workshop sessions, project demonstrations, and birds-of-a-feather sessions. The schedule will also include a number of invited Keynote speakers involved in leading Grid and e-Science activities. Details will be available shortly at [www.allhands.org.uk](http://www.allhands.org.uk).

## LONDON MATHEMATICAL SOCIETY

### MIDLANDS REGIONAL MEETING

Lecture Theatre, Ken Edwards Building,  
University of Leicester

Monday 15 May 2006

- 10:30 Arrival; poster display
- 10:45 LMS business meeting
- 11:00 Martin Bridson (London)  
*Between Teichmüller space and outer space*
- 12:00 Hanspeter Kraft (Basel)  
*Compression of finite group actions and covariant dimension*
- 1:00 Lunch
- 2:30 Andrei Zelevinsky (Boston)  
*Laurent expansions in cluster algebras via quiver representation*
- 3:30 Tea and coffee break; poster display
- 4:30 Nigel Hitchin (Oxford)  
*Geometric structures and the Teichmüller component*
- 7:00 Dinner

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.

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](http://www.lms.ac.uk); email: [grants@lms.ac.uk](mailto:grants@lms.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/LMS06.html](http://www.math.le.ac.uk/LMS06.html) for further information.

For updated information, including abstracts about the Regional meeting and Workshop visit the website [www.math.le.ac.uk/LMS06.html](http://www.math.le.ac.uk/LMS06.html).

### LMS Newsletter

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## VISIT OF PROFESSOR G. JAEGER

Professor Gerhard Jaeger (University of Bern, Switzerland), a leading authority on Proof Theory and Logics for Computer Science, will visit the School of Mathematics, University of Leeds, throughout the month of April, partially supported by an LMS Scheme 2 grant. During his stay he will also make short visits to the School of Computer Science at the University of St Andrews and to the University of Manchester. The following lectures have been arranged:

- 11 April, at St. Andrews, (probably) 4 pm: *Common knowledge and its proof theory* (for further information contact Dr Roy Dyckhoff, rd@dcs.st-and.ac.uk).
- 26 April, Leeds Mathematical Logic Seminar, 4 pm: title to be announced (contact Professor Michael Rathjen rathjen@maths.leeds.ac.uk or Professor Stan Wainer s.s.wainer@leeds.ac.uk).

## COMBINATORICS AT READING IN MEMORIAM

There will be a two-day Combinatorics Colloquium at Reading University on 17-18 May to celebrate 50 years of Combinatorics at Reading.

The speakers will be predominantly people who have had a close connection with Reading of some kind or another - people who will have a sense of grief at the end of a small but famous group started by Richard Rado and continued until recently by Crispin Nash-Williams. Details of the colloquium and further information about the people who have been associated with Reading may be found on [www.reading.ac.uk/combinatorics](http://www.reading.ac.uk/combinatorics).

Speakers will include Ron Aharoni, Lars Andersen, Norman Biggs, Adrian Bondy, Peter Cameron, Roland Haggkvist, Bill Jackson, Pete Johnson, Donald Keedwell, Imre Leader, Curt Lindner, Dragan Marusic, George Purdy, Neil Robertson, Andrew Thomason.

The proceedings will start at 10.30 am on Wednesday 17 May. The lectures will be in Lecture Rooms G and Lecture Room 1 in the Chemistry Building (which is very close to the Mathematics Building). There will be a dinner that evening, and the last talk will end at 5.30 pm on Thursday 8 May. There will be an informal get-together on Thursday evening.

Details about the programme, transport and accommodation may be found on the website above. Some financial assistance may be available for students on application to me. Thanks are gratefully given to the British Combinatorial Committee and the London Mathematical Society for their generous financial assistance.

## ADAMS PRIZEWINNER 2005

The University of Cambridge has announced the winner of one of its oldest and most prestigious prizes.

The Adams Prize is awarded jointly each year by the Faculty of Mathematics and St John's College to a young (normally under 40 years of age) UK-based researcher doing first class international research in the Mathematical Sciences.

This year's topic is Mathematical Biology, and the Prize has been awarded to Professor Jonathan Sherratt of the Department of Mathematics, Heriot-Watt University, Edinburgh.

Professor John Coates, Chairman of the Adams Prize Adjudicators, said:

'Jonathan Sherratt has made major contributions to several areas of mathematical Biology. His work shows remarkable breadth, including both important theoretical work, as well as research closely connected to clinical studies on cancer modelling and wound healing.'

The Adams Prize is named after the mathematician John Couch Adams and was endowed by members of St John's College. It is currently worth £13,000. It commemorates Adams' discovery of the planet Neptune, through calculation of the discrepancies in the orbit of Uranus.

## OPEN CALL FOR TWO NEW ACME MEMBERS

The Advisory Committee on Mathematics Education (ACME) provides a two-way channel between the mathematics community and the Government and its agencies on mathematics education issues in English schools and colleges. Since its formation the Committee has worked both proactively and reactively, producing policy reports and responding to policy initiatives in key areas. For further information about ACME and its work please see [www.acme-uk.org](http://www.acme-uk.org).

ACME collectively aims to have expertise in mathematics and mathematics education at all levels from Early Years up to the start of Higher Education, including the mathematical needs of employment, and in the education of teachers of mathematics. Insofar as is feasible for a small group, it should seek to have a balanced representation across phase, region, gender and ethnicity.

ACME is now seeking two new members, one from the 11-19 sector (with experience of 14-19 teaching, especially GCSE and A-Level Mathematics) and one from a university mathematics department. Short-listed candidates for the positions are expected to have extensive experience of teaching. Recognising the need to accommodate any time-tabling arrangements, we will be flexible about start dates; the new members may start serving on ACME from the 1st of any month between September 2006 and January 2007 - applicants should indicate their preferred start date.

Members are currently expected to give 15% of their time to ACME work, and their employers will be reimbursed for the relevant proportion of their salary costs via the Royal Society. Travel and subsistence expenses incurred on ACME busi-

ness (including for its formal meetings, usually held monthly in London) are reimbursed directly to members. Members are selected partly by reference to the overall balance of the committee, and partly on the basis of criteria recommended by the mathematics community including: willingness to serve on ACME and ability to commit the necessary time to ACME work; broad expertise and recognised status; involvement in established networks (such as membership of professional bodies) to allow wide consultation and dissemination; track record in writing, leading projects, and communicating to diverse audiences; and open-mindedness and the ability to work as part of a co-operative team. The members of ACME will serve as individuals and not as representatives of any organisation or interest group. They will have sufficient stature within the community that their views carry weight.

Applicants should provide a 2-page CV and explain in no more than 500 words what they feel they will bring to ACME and how they will manage to give the time required for ACME work (currently a minimum of 37 days per year including 12 committee meetings, usually in London). They should provide a signed reference from their department head, principal or head teacher supporting their application to join ACME and confirming that they will be allowed to commit at least 15% of their time. The ACME Secretariat will be happy to discuss the importance and status of ACME membership with potential referees.

Applications must be received by **Wednesday 12 April**. Please send six copies of application papers to ACME, The Royal Society, 6-9 Carlton House Terrace, London SW1Y 5AG. Please state clearly which position you are applying for.

## CHANDRA SHEKHAR SHARMA

Chandra Sharma, a member of the LMS since 1969, died on 19 December 2005 aged 72. He was born in India. His aptitude for mathematics was recognised as a young child and his father, a Deputy Collector, depended on him to decode the secret wartime messages he was sent. But his father would not allow him to study mathematics, and he read chemistry instead at Patna University.

He became a chemistry lecturer there and supplemented his income by writing some of the first school science textbooks in Hindi. These were later translated into Urdu and Bengali and became best sellers throughout India. With the money he saved he was able to come to Oxford in 1960 to do a doctorate under C.A. Coulson. After completing his DPhil in just two years he decided not to return to Patna and instead accepted a lectureship in the Mathematics Department of Birkbeck College. There he was able to complete the transition from chemist to mathematician. He became a professor at Birkbeck in 1979 and remained at the college until his retirement in 1998.

His many published works included a radical simplification of the minimax theory which he showed followed easily from an almost self-evident, little Hilbert space lemma. Variational methods in quantum mechanics led him to develop a new calculus on complex Banach spaces in which linearity of the derivative is replaced by the weaker requirement of additivity. Later this calculus provided a satisfactory explanation of why use of  $\partial/\partial z$  and  $\partial/\partial \bar{z}$ , essential tools for relativity and complex manifold theory, actually works. He discovered that special relativity is a mathematical model based on the Hilbert space  $C^2$  and, once this structure had been found, all the properties of space-time and the Lorenz group follow easily. His more recent work on the mathematical foundations of quantum mechanics and relativity was published in the *Journal of Natural Geometry* which he had founded in 1992.

Anthea Sharma

## RICHARD PECKOVER

Dr Richard Peckover, who was elected a member of the London Mathematical Society on 14 June 1991, died on 15 August 2005, aged 63, after a long struggle with Motor Neurone Disease. He approached his illness with courage and characteristic good humour and he will be greatly missed by family, friends and colleagues.

Richard, a native of Norfolk, began his association with United Kingdom Atomic Energy Authority (UKAEA) in 1965 working as a Vacation Assistant at Culham. Richard started his permanent UKAEA career as a Senior Scientific Officer in 1971 at Culham. In 1974 he became Section Leader of the Reactor Safety Section of the Computational Physics group at Culham. Richard was identified early as possessing exceptional ability and was appointed to the senior staff of SRD Culcheth in 1982, as Head of Safety Assessment Services.

In 1987 Richard became Assistant Director at Winfrith, with specific responsibility for co-ordinating and leading the commercial impetus of the site. In 1990 he was appointed as Site Director. In this role he had the difficult task of managing the site post-SGHWR closure and overseeing the emergence of Winfrith Technology Centre. In 1992 Richard became UKAEA Corporate Safety Director as well as UKAEA Head of Site Winfrith from 1994. He worked as Chief Safety Advisor until his retirement in 2002. In August 1996 Richard married Lizzie Griffiths whom he met whilst working at Winfrith.

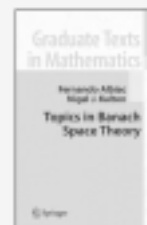
Richard Peckover was a well-rounded individual who relished intelligent and philosophical debate. He was a Fellow of the Institute of Mathematics and Its Applications, a Fellow of the Royal Meteorological Society and a Fellow of the Royal Astronomical Society. He is a fine example of a generation of exceptional scientists who won their spurs with the UKAEA.

From the UKAEA Winfrith Update Newsletter



springer.com

## New Textbooks from Springer



### Topics in Banach Space Theory

F. Albiac, N. J. Kalton, University of Missouri, Columbia, MO, USA

The geometry of Banach spaces is a rich, beautiful, and rewarding subject. In this book the authors emphasize the isomorphic theory of Banach spaces and techniques using the unifying viewpoint of basic sequences.

2006. XI, 373 p. [Graduate Texts in Mathematics, Vol. 230] Hardcover  
ISBN 0-387-28141-X ▶ € 56,95 | £44.00

### Graph Theory

R. Diestel, University of Hamburg, Germany

From the reviews of the first two editions (1997, 2000)  
▶ ... Ake fascinating to someone explore mathematics.  
▶ Bulletin of the AMS

3rd ed. 2006. XVI, 415 p. [Graduate Texts in Mathematics, Vol. 173] Softcover  
ISBN 3-540-26183-4 ▶ € 39,95 | £30.50



### Introduction to Stochastic Integration

H.-H. Rao, Louisiana State University, Baton Rouge, LA, USA

This textbook provides a concise introduction to the Itô calculus, and covers such topics as: Brownian motion; Stochastic integrals for Brownian motion and martingales; and applications to finance, filtering theory, and electric circuits. Chapter-ending exercises help the reader grasp the material.

2006. XII, 279 p. [Universitext] Softcover  
ISBN 0-387-28720-5 ▶ € 42,95 | £33.00

### Algebra

Volume I: Fields and Galois Theory

F. Lorenz, University of Münster, Germany

From Reviews of the German version ▶ This is a clear-  
writing textbook, introducing the reader to the classical parts  
of algebra. The exposition is admirably clear and lucidly written...  
▶ Stefan Porubsky, Mathematical Reviews

2006. VIII, 296 p. [Universitext] Softcover  
ISBN 0-387-28930-5 ▶ € 42,95 | £33.00



### Notes on Set Theory

Y. Moschovakis, University of California, Los Angeles, CA, USA

About the First Edition ▶ This is an  
excellent introduction to axiomatic set  
theory, viewed both as a foundation of  
mathematics and as a branch of math-  
ematics with its own subject matter,  
basic results, open problems.  
▶ Achille C. Varzi, History and Philo-  
sophy of Logic

2nd ed. 2006. XII, 276 p., 48 illus. [Undergraduate Texts in Mathematics] Hardcover  
ISBN 0-387-28722-1 ▶ € 66,95 | £51.50  
Softcover  
ISBN 0-387-28723-X ▶ € 42,95 | £29.95

### Galois Theory

S. H. Weintraub, Lehigh University, Bethlehem, PA, USA

Classical Galois theory is a subject generally acknowledged to be one of the most central and beautiful areas in pure mathematics. This text develops the subject systematically and from the beginning, requiring of the reader only basic facts about polynomials and a good knowledge of linear algebra.

2006. XIII, 190 p. [Universitext] Softcover  
ISBN 0-387-28725-6 ▶ € 42,95 | £ 33.00

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## NONSTANDARD METHODS AND APPLICATIONS IN MATHEMATICS

The *NonStandard Methods and Applications in Mathematics* Congress will be held in Pisa, Italy, from 25-31 May 2006. This Congress continues the tradition of biennial meetings focused on nonstandard methods. While the fields of application of nonstandard analysis are diverse, the common methodologies and ideas make it appropriate to consider nonstandard methods as a unified mathematical field of research. Invited speakers include:

- Sergio Albeverio\* (Bonn)
- Robert Anderson (Berkeley)
- John Bell (Western Ontario)
- Vieri Benci (Pisa)
- Imme van den Berg (Evora)
- Nigel Cutland (Swaziland and York, UK)
- Ali Enayat (American University, Washington)
- Marco Forti (Pisa)
- Yevgeniy Gordon (Eastern Illinois)
- Karel Hrbacek (CUNY, New York)
- Renling Jin (Charleston)
- H. Jerome Keisler (Wisconsin)
- Roman Kossak (CUNY, New York)
- Steven Leth (Northern Colorado)
- Tom Lindstrom (Oslo)
- Peter Loeb (Urbana)
- Wilhelmus A.J. Luxemburg\* (Caltech)
- Angus Macintyre (Queen Mary University of London)
- Toru Nakamura (Gakushuin University, Tokyo, Japan)
- Vitor Neves\* (Aveiro)
- David Ross (Hawaii)
- Tewfik Sari (Haute Alsace, France)
- Yeneng Sun (National University, Singapore)
- Kazuyuki Tanaka\* (Tohoku University, Japan)
- Manfred Wolff\* (Tübingen, Germany)
- Armen Zemanian (Stony Brook University, New York).

For further information email [nsm2006@dm.unipi.it](mailto:nsm2006@dm.unipi.it) or visit the website: [www.dm.unipi.it/~nsm2006](http://www.dm.unipi.it/~nsm2006).

\* denotes acceptance is provisional.

## RANDOMNESS AND COMPLEXITY

The Heilbronn Institute for Mathematical Research, Bristol is organising a workshop on *Randomness and Complexity* from 3-7 July. The scientific organisers are Dominic Welsh and Mark Jerrum. Amongst the confirmed participants are

- Magnus Bordewich (Durham)
- Graham Brightwell (LSE)
- Harry Buhrman (Amsterdam)
- Mary Cryan (Edinburgh)
- Irit Dinur (Hebrew University)
- Martin Dyer (Leeds)
- Alan Frieze (Carnegie Mellon)
- Lance Fortnow (Chicago)
- Leslie Ann Goldberg (Warwick)
- Oded Goldreich (Weizmann Institute)
- Colin McDiarmid (Oxford)
- Russell Martin (Liverpool)
- Steven Noble (Brunel)
- Mike Paterson (Warwick)
- Alistair Sinclair (Berkeley)
- Luca Trevisan (Berkeley)
- Vijay Vazirani (Georgia)

Further details about attendance can be obtained by contacting Cathy Badley ([Cathy.Badley@bristol.ac.uk](mailto:Cathy.Badley@bristol.ac.uk)).

## KNOWLEDGE MANAGEMENT

The 5th international conference on Mathematical Knowledge Management (MKM 2006) will be held at the St Anne's Manor in Wokingham, from 10-12 August. It will be an official satellite event of ICM. Plenary speakers are:

- Gregory J. Chaitin (IBM Research)
- Abdou Youssef (George Washington University)

For further information visit the website [www.rdg.ac.uk/MKM06/](http://www.rdg.ac.uk/MKM06/) or email [mkm2006@rdg.ac.uk](mailto:mkm2006@rdg.ac.uk). There is a related satellite meeting on *Communicating Mathematics in the Digital Era* (15-18 August in Aveiro, Portugal).

## WOMEN IN MATHEMATICS DAY

28 April 2006

To be held at De Morgan House (57-58 Russell Square, London, WC1B 4HS)

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

Limited funds are available to help with the travel costs of postgraduates attending the event. Further details are available from Isabelle Robinson (contact details above).

### Programme

**10.30-11.00 Registration and coffee**

**11.00-13.00 Morning Session**

Susan Pitts (Cambridge)

*Risk and ruin: approximations and refinements*

Elke Thonnes (Warwick)

*Random field model for human fingerprint*

Christina Cobbold (Glasgow)

*Synchronisation and timing in a dynamical systems model of insect development*

**13.00-14.00 Lunch**

**14.00-15.15 Postgraduate speakers (please note: order may change)**

Carole Becker (Sussex)

*title tbc*

Rosemary Dyson (Oxford)

*The stability of a multilayer film falling under gravity*

Olalla Castro Alvaredo (City)

*Correlation functions of quantum spin chains*

**15.15-15.30 Tea**

**15.30-16.45 Postgraduate speakers (please note: order may change)**

Apala Majumdar (Bristol)

*Liquid crystals and tangent unit-vector fields in polyhedral geometries*

Sara Maad (Surrey)

*Persistence of embedded eigenvalues*

Natatlia Kaur-Virdee (Plymouth)

*title tbc*

Followed by an early supper for those able to stay.

## GEOMETRY AND MECHANICS

The University of Surrey will be awarding an Honorary Doctorate to Professor J.E. Marsden (CalTech) in the June graduation ceremony this year which takes place on 16 June. In honour of this occasion a two-day conference with a theme of *geometry and mechanics* is planned for 14-15 June at the university. Principal invited speakers are

- J.M Ball FRS (Oxford) (to be confirmed)
- D. Holm (Imperial)
- F.C. Kirwan FRS (Oxford)
- R.S. MacKay FRS (Warwick)
- J.E. Marsden (Cal Tech)
- H.K. Moffatt FRS (Cambridge)
- M. Sweeting FRS (Surrey)

There will be two sessions of short talks by PhD students, and nominations for student speakers are welcome. The organising committee consists of T. Bridges (co-chair), G. Derks, P. Hydon, M. Roberts (co-chair), I. Roulstone and C. Wulff. Support for this event from the London Mathematical Society and the University of Surrey is gratefully acknowledged. Registration and other information is posted on the conference website [www.maths.surrey.ac.uk/events/conferences/gfn-2006/June.php](http://www.maths.surrey.ac.uk/events/conferences/gfn-2006/June.php).

## OPERATOR ALGEBRA WORKSHOP 2006

A two-day workshop dedicated to all aspects of operator algebras, both selfadjoint and non-selfadjoint, will be held in the Department of Pure Mathematics of Queen's University Belfast on Friday 5 and Saturday 6 May. The main speakers are:

- Soren Eilers (Copenhagen) *Classification of non-simple  $C^*$ -algebras (with applications)*
- Aristides Katavolos (Athens) *Morita-type equivalence for operator algebras*
- Jean Renault (Orleans) *Pseudogroups and masas in  $C^*$ -algebras*

- Laszlo Zsido (Rome) *Weyl-von Neumann type theorems for non sigma-unital  $C^*$ -algebras*

There will also be contributed talks by the participants. The workshop, which is organised by Drs Martin Mathieu and Ivan Todorov, is supported by the Irish Mathematical Society, the London Mathematical Society and the Nuffield Foundation. Graduate students enrolled at a university in the RoI and the UK can ask for support. Please direct all enquiries to [opaw2006@qub.ac.uk](mailto:opaw2006@qub.ac.uk). Full information is available at [www.qub.ac.uk/opaw2006](http://www.qub.ac.uk/opaw2006).

## REDUCTIVE GROUPS

A one-day meeting on Reductive Groups and their Representations will take place on Wednesday 5 April at the Mathematical Institute, University of Oxford. The speakers will be Steve Donkin (York), Jean-Baptiste Gramain (Aberdeen), Raphael Rouquier (Leeds), Dmitriy Rumynin (Warwick) and Rudolf Tange (Southampton).

The first talk will begin at 11.30am, with refreshments beforehand from 11.00am. Some financial support for graduate students is available – contact Simon Goodwin ([goodwins@maths.ox.ac.uk](mailto:goodwins@maths.ox.ac.uk)) for details. There will be a meal in the evening to which all participants are warmly invited. Further information can be found on the webpage [www.maths.ox.ac.uk/~goodwins/redgroups/](http://www.maths.ox.ac.uk/~goodwins/redgroups/).

## BRISTOL-LEICESTER- OXFORD COLLOQUIUM

The 34th Bristol-Leicester-Oxford Colloquium (BLOC) will be held in Oxford, on Friday 7 April, the speakers will be Steve Donkin (York) and Anthony Joseph (Weizmann Institute). For details see [www.math.le.ac.uk/people/nsnashall/BLOC/](http://www.math.le.ac.uk/people/nsnashall/BLOC/) or contact the local organizer ([erdmann@maths.ox.ac.uk](mailto:erdmann@maths.ox.ac.uk)). The meeting is supported by an LMS Scheme 3 grant.

## SURGERY THEORY PAST, PRESENT AND FUTURE

A meeting on surgery theory celebrating the 70th birthday of C.T.C. Wall will be held at ICMS, Edinburgh, from 3-5 July. The main speakers are:

- S. Cappell (NYU)
- D. Crowley (Heidelberg)
- T. Farrell (Binghamton)
- I. Hambleton (McMaster)
- M. Kreck (Heidelberg)
- W. Lück (Münster)
- E. Pedersen (Binghamton)
- F. Quinn (Virginia Tech)
- A. Ranicki (Edinburgh)
- S. Weinberger (Chicago)
- M. Weiss (Aberdeen)

The programme will start on the morning of Monday 3 July and finish on the afternoon of Wednesday 5 July. Further details will be posted on the conference website [www.maths.ed.ac.uk/~aar/wall70.htm](http://www.maths.ed.ac.uk/~aar/wall70.htm).

Attendance is by invitation only, as space is limited. Anyone interested in an invitation should contact the organizer Andrew Ranicki ([a.ranicki@ed.ac.uk](mailto:a.ranicki@ed.ac.uk)). Some financial support is available for certain categories of participant. The meeting is supported by the London Mathematical Society, the Edinburgh node of the EU RTN Network HPRN-CT-2002-00287, the Edinburgh Mathematical Society and the Glasgow Mathematical Journal Trust Fund.

## MATHEMATICS FOR INDUSTRY

The 14th European Conference on Mathematics for Industry (ECMI 2006) will take place from 10-14 July at the Leganés Campus of the Universidad Carlos III de Madrid, Spain. It will be devoted to mathematical modelling, analysis, simulation and validation of problems arising in a practical context of interest for European Industry and

commerce. The conference is intended for mathematicians, engineers and scientists, both from academia and industry, to meet and discuss current problems of mutual interest. It will also give advanced students and junior researchers the opportunity to present their work in an European forum, attain an overall impression of the uses of mathematics in industry and establish multidisciplinary contacts.

There will be invited lectures by distinguished researchers, focus sessions, minisymposia, contributed papers and posters. Plenary speakers include: A. Barrero, A. Bermúdez, V. Capasso, R. Caflisch, L.M.B.C. Campos, P. Degond, P. Deufilhard, S. Howison, F. Natterer, M. Ortiz, J. Stern.

For further information visit the conference website [www.uc3m.es/ecmi2006](http://www.uc3m.es/ecmi2006) or contact the ECMI 2006 Secretary's Office (CONGREGA, Fundación Universidad Carlos III, Avda. de la Universidad 30, Leganés 28911, Madrid, Spain, tel: +34 91 6249142, fax: +34 91 6249147, email: [ecmi2006@fund.uc3m.es](mailto:ecmi2006@fund.uc3m.es)).

## EUROPEAN STUDY GROUP

The University of Bath, in association with the Smith Institute, and with support from the LMS and the EPSRC, is pleased to be hosting the 56th European Study Group with Industry from 3-7 April 2006.

The Study Group will follow the usual format of presentations from industry introducing a problem on the first day, followed by intensive work on the problem by groups during the next three days and presentations by the academics on the final day. A report on each problem will be prepared after the meeting. This year the Study Group has ten problems ranging from landing gear simulation to agent based modelling and from oil reservoir modelling to optimal resource allocation. See [www.bath.ac.uk/math-sci/esgi/](http://www.bath.ac.uk/math-sci/esgi/) for more information.

## LMS COMMITTEES 2006

### COUNCIL COMMITTEES

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**Editorial Committee:** Publications Secretary (Chair), Joint Editors of the *Bulletin, Journal, Proceedings* and *JCM*, Book Reviews Editor, Publisher.

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**Diarist:** K.J. Falconer.

**Obituaries Editor:** N.H. Bingham.

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**Science Council (Education Policy Group):** Executive Secretary.

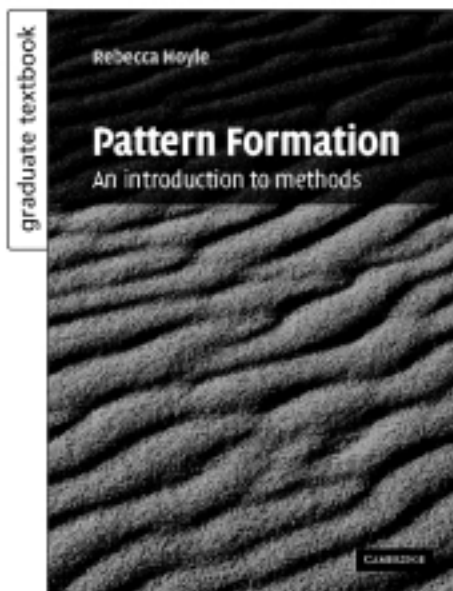
**Science Council (Education Network Group):** Executive Secretary.

**Science Council (Science in Health Group):** H. Byrne.

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CAMBRIDGE

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## LMS MEETING

University College London  
Friday 16 June 2006

**A.C. Rice**  
(Randolph-Macon College)  
*The Life and Legacy of Augustus  
De Morgan (1806-1871)*

**Y. Manin**  
(Northwestern University, Evanston)  
will give the Hardy Lecture on  
*Continued fractions,  
non-commutative boundaries  
and Einstein equations*

For further information contact  
Susan Oakes (oakes@lms.ac.uk).

## 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](http://www.maths.leeds.ac.uk/pure/analysis/lms).  
or contact H.G. Dales  
(garth@maths.leeds.ac.uk).

## LONDON MATHEMATICAL SOCIETY

### HARDY LECTURER 2006

The 2006 Hardy Lecturer is Professor Yu Manin (Northwestern University).  
During his visit to the UK in June he will give lectures at the following places:

- **Friday 16 June** – The Hardy Lecture, LMS Meeting, University College London  
*Continued fractions, non-commutative boundaries and Einstein equations*  
contact Susan Oakes (oakes@lms.ac.uk)
- **Monday 19 June** – Edinburgh University  
*Iterated integrals of modular forms and non-commutative modular symbols*  
contact Tom Lenagan (tom@maths.ed.ac.uk)
- **Tuesday 27 June** – Bristol University  
*Iterated integrals of modular forms and non-commutative modular symbols*  
contact S. Wiggins (S.Wiggins@bristol.ac.uk)

During Professor Manin's stay in the UK he will be based at Imperial College London.  
Contact Richard Thomas (richard.thomas@imperial.ac.uk) for further information.

The names given are the local organisers, from whom further information can be  
obtained. For general enquiries contact Stephen Huggett, LMS Programme Secretary.



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BIRMINGHAM

*School of Mathematics*

- (1) Chair of Applied Mathematics
- (2) Chair of Mathematical Optimisation

The University wishes to make two appointments to Chairs in the School of Mathematics. The successful Chair candidates will be of international mathematical distinction, able to offer leadership in research, teaching and academic policy making in the School.

- (1) Applicants for the Chair of Applied Mathematics are especially invited from outstanding researchers in theoretical or computational fluid mechanics, which may include people specialising in the modelling of flows arising in engineering, biology, chemistry, medicine or industry. Please quote reference **S38101** in application.
- (2) Applicants for the Chair of Mathematical Optimisation should have an outstanding research track record and international research profile in Mathematical Optimisation and proven ability to win peer-reviewed funding from multiple sources. We welcome applicants with research interests that might include discrete, non-linear optimisation and multicriteria optimisation, but successful applicants may work in any area of Mathematical Optimisation. Please quote reference **S38100** in application.

Each professorial post will be supported by a postdoctoral research fellow position.

Informal enquiries prior to formal application are strongly encouraged; they may be made to Professor J. R. Blake (Head of School, e-mail [J.R.Blake@bham.ac.uk](mailto:J.R.Blake@bham.ac.uk)). Information about the School and its research groups is available on <http://www.mat.bham.ac.uk/research/>

Further details and the procedure for applying for the professorial posts can be obtained from Jayne Dowden, Assistant Director of Personnel Services, University of Birmingham, Edgbaston, Birmingham, B15 2TT. Tel: +44(0)121 415 8816, Fax: +44(0)121 414 7043, e-mail: [J.A.Dowden@bham.ac.uk](mailto:J.A.Dowden@bham.ac.uk), and for the Lecturer/Senior Lecturer/Reader post from Deepa Patel, Personnel Services, Tel: +44(0)121 415 8114, e-mail: [D.Patel.1@bham.ac.uk](mailto:D.Patel.1@bham.ac.uk) Web: <http://www.punit.bham.ac.uk/vacancies>

The Closing date for applications is 14<sup>th</sup> April 2006

Working towards equal opportunities

## RECORDS OF PROCEEDINGS AT MEETINGS

### ORDINARY MEETING

held on *Friday 10 February 2006* at University College London. About 70 members and visitors were present for all or part of the meeting.

The meeting began at 4.15 pm, with Dr F.A. ROGERS, Vice-President, in the Chair. Six people were elected to Ordinary Membership: L. Boulton, G.D. Brown, D.E. Buck, S.L. Lelievre, K. Matthies, D.A. Tilley, and six people were elected to Associate Membership: Z. Choo, B. Fairbairn, M.D. Johnston, C.R. Llewellyn-Jones, E.J. Spoor, M. Wiedemann.

The Records of the Proceedings of the Society Meetings held on 5 September, 7 October and 18 November 2005 were signed as a correct record.

One member signed the book and was admitted to the Society.

Dr G.M. STALLARD introduced a lecture given by Professor Graeme Segal on *Locality in quantum field theory*.

After tea, Dr Rogers introduced the Mary Cartwright Lecture, given by Professor Ulrike Tillmann on *The topology of strings: Mumford's conjecture and beyond*.

After the meeting, a reception was held at De Morgan House, followed by a dinner at Il Fornello Restaurant.

### MARY CARTWRIGHT MEETING

The Mary Cartwright meeting was held at University College London on Friday 10 February. The occasion began with a very brief business meeting of the Society, chaired by Alice Rogers as Vice-President and former chair of the LMS Women in Mathematics (WiM) Committee. She then handed over to Gwyneth Stallard as current WiM chair to introduce the first lecture given by Graeme Segal on *Locality in Quantum Field Theory*.

Graeme Segal recalled with some awe attending Mary Cartwright's lectures on complex analysis at Cambridge (as did Alice Rogers). His own lecture began with an informal introduction to quantum field theories

and what one might hope to get from them. Given any space-time  $X$ , it should be possible to make local observations on  $X$ : a QFT should associate to every  $x \in X$  a (complex topological) vector space  $A_x$  of 'observables' at  $x$ , and whenever  $x_1, \dots, x_k$  are distinct points of  $X$  there should be given a multilinear 'correlation' function  $\theta : A_{x_1} \times \dots \times A_{x_k} \rightarrow \mathbb{C}$ . Thus a good model to have in mind would be given by a space  $\Phi_x$  of 'fields' on  $X$  (for example,  $\Phi_x$  might consist of smooth functions from  $X$  to the reals or to a fixed Riemannian manifold  $M$ , or bundles with connection on  $X$ ), with elements of  $A_x$  given by maps  $\phi : \Phi_x \rightarrow \mathbb{C}$  which are local at  $x$ , in the sense that the image  $\phi(f)$  of  $f \in \Phi_x$  depends only on the value of  $f$  and all its derivatives at  $x$ . In this situation,  $\theta(\phi_1, \dots, \phi_k)$  will be given by the inte-


gral or 'expectation value' of  $\phi_1(f) \dots \phi_k(f)$  over all  $f \in \Phi_x$  (with respect to some measure). There is no mathematically rigorous way to define such integrals, but nonetheless they provide almost all our intuition about QFTs. One goal is to formulate the concept sufficiently precisely to be able to construct 'moduli spaces' of  $d$ -dimensional field theories with appropriate properties: string theory interprets gravitation in terms of the geometry of the moduli space of certain two-dimensional theories. To achieve this goal, one needs to refine the definition of a  $d$ -dimensional field theory as a functor  $Y \mapsto H_Y$  (satisfying appropriate concatenation and tensoring axioms) from the category of  $(d-1)$ -dimensional compact oriented smooth manifolds and cobordisms to the category of complex topological vector spaces. One needs some additional prescription of locality, which, when  $Y$  is the union of manifolds-with-boundary  $Y_1$  and  $Y_2$ , meeting along a union of common boundary components  $Z$ , should allow us to reconstruct  $H_Y$  from  $H_{Y_1}$  and  $H_{Y_2}$  together with local data along  $Z$ . A possible formulation was sketched, though the optimal version of the theory is still far from clear, even when  $d=2$ .

After tea Ulrike Tillmann gave the 2006 Mary Cartwright lecture on *The topology of strings: Mumford's conjecture and beyond*. She first explained how moduli spaces of Riemann surfaces relate to many different areas of mathematics: complex analysis (via the mapping class group's action on Teichmüller space), algebra (especially the algebraic structure of the mapping class group, which is still rather mysterious), algebraic geometry (for example through Gromov-Witten theory), mathematical physics (closely related to the previous lecture) and finally differential geometry and topology, in particular homotopy theory, via the classifying spaces of the diffeomorphism groups of surfaces. She described Harer's work in the 1980s on the stability of the cohomology of the moduli spaces

as the genus of the surface becomes large, and then Mumford's conjecture concerning the stable cohomology, which was proved a few years ago by Madsen and Weiss, building on fundamental work of Tillmann and Madsen-Tillmann. The picture they provided has been hugely generalised very recently by Galatius, Madsen, Tillmann and Weiss to give a beautiful description of the 'string categories'  $C_d(M)$  of  $d$ -dimensional cobordisms over any background manifold  $M$ . Mumford's conjecture is a consequence of the special case of their theorem when  $M$  is a point and  $d=2$ . This gives us an exciting new understanding of manifolds of a given dimension. As a corollary they obtain a functor  $QF^d$  from spaces to graded abelian groups which is a generalised cohomology theory, and hence satisfies locality in the sense outlined in the first lecture.

After the meeting a reception was held at De Morgan House, followed by dinner at a nearby restaurant.

Frances Kirwan  
Oxford



**Professorship in Mathematical Finance**

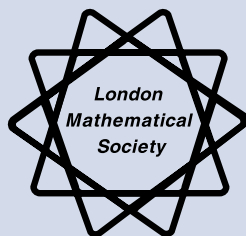
Applications are invited for the above post, tenable from 1st October 2006, or such later date as may be arranged. A non-stipendary fellowship at St Hugh's College is attached to the professorship.

The Professorship in Mathematical Finance is held in the Mathematical Institute, one of the leading mathematics departments in the world. The University seeks to appoint a world-class scientist with an outstanding research record of internationally recognised stature in mathematical finance, who will strengthen the Mathematical Finance Group and underpin its collaborative work both within and outside the University.

Further particulars, including details of how to apply, are available from <http://www.admin.ox.ac.uk/fp/> or from the Registrar, University Offices, Wellington Square, Oxford OX1 2JD, tel. (01865) 270200. The closing date for applications is 24th April 2006.

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## SPECIAL LECTURES

Two intriguing and brilliant lectures for a very wide mathematical audience.

**Friday 25 August 2006**

**International Congress of Mathematics 2006, Madrid**

18:00 – 18:15 LMS business

18:15 – 19:00 Robert Bryant (Duke University, USA)

19:15 – 18:00 Godfried Toussaint (McGill University, Canada)

This is part of the Program of Special Activities being held during the ICM 2006 in Madrid. An ordinary meeting of the LMS will be held just before these lectures, during which members will be able to sign the membership book.

As they become available more details can be found at  
[www.icm2006.org/scientificprogram/specialactivities/](http://www.icm2006.org/scientificprogram/specialactivities/)

## PROOF



*Proof* is a film about a 27 year old woman Catherine (played by Gwyneth Paltrow) and begins the day before the funeral of her father (played in a series of flash-backs by Anthony Hopkins). He was a mathematical genius who, after excellent work in his 20s, had gone mad and spent the last five years of his life being looked after by Catherine. She shares his love of mathematics but is haunted by the fear that she may also share his madness.

The film follows Catherine, her 'sensible' non-mathematician sister Claire and her father's former PhD student Hal through the funeral and beyond, and also gradually reveals more of Catherine's past: her relationship with her father and with mathematics. The relationships between the main characters are challenged after the discovery in Catherine's father's desk of a notebook containing a proof of an important new result.

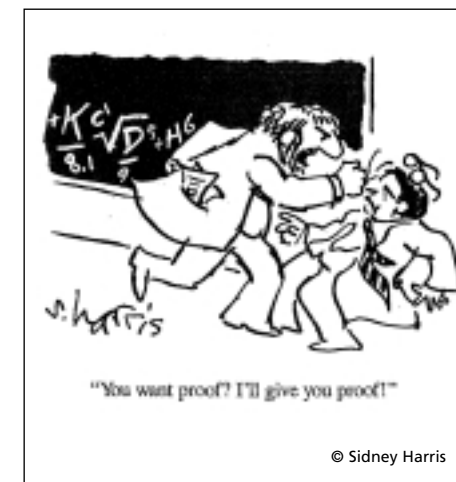
As a mathematician, there were many things that rang true – the obsessive working when you have a good idea, the flash of inspiration that can come as you open the fridge and the insistence on discussing things logically. The references to mathematics conferences centered on drugs left me bemused, though!

As a woman mathematician (called Gwyneth!) it was very satisfying to see that Catherine was clearly the brightest of all the young people in the film (although you'll have to watch the film to see whether she's a genius). She was, however, lacking in confidence (and support from some of those around her) and had given up her university mathematical studies because of family responsibilities – a depressingly familiar

scenario. The statistics show that large numbers of women mathematicians in their thirties are leaving academia. This film is a reminder that we need to do all we can to reverse this situation – who knows how many good proofs have been lost to mathematics?

From what I can gather, the film is not as good as the prize-winning play by David Auburn on which it is based. It is, however, fun to watch and is accessible to all as there is very little actual mathematics discussed. All we learn, for example, about the result proved in the notebook is that it is 'a mathematical theorem about prime numbers'. As a mathematician, this is sometimes a bit frustrating. You may also be frustrated by the typical portrayal of mathematicians as crazy people with no dress sense! If you want to see the film for yourself then you may need to catch it quickly – there were only eight others in the audience when we went. It was not the best film that I have ever seen but it deserved a bigger audience than that.

Gwyneth Stallard, Open University  
(Chair, LMS Women in Mathematics Committee)



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**EPSRC**

**Methods of Non-equilibrium  
Statistical Mechanics in Turbulence**

**LMS/EPSRC Short Course**

**University of Warwick, 10–14 July 2006**

**Organisers:** Dr S. Nazarenko and 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 own 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](http://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](mailto: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](http://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.

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**EPSRC**

**Stability, Coupling Methods  
and Rare Events**

**LMS/EPSRC Short Course**

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

**Organisers:** Professor Serguei Foss and 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](http://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](mailto: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](http://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  
**PAINLEVÉ EQUATIONS AND MONODROMY  
PROBLEMS: AN INTRODUCTION**

**11-15 September 2006**

in association with the Newton Institute programme entitled  
*The Painlevé Equations and Monodromy Problems (4-29 September 2006)*

Partially supported by: The European Community through the  
FP6 Marie Curie RTN ENIGMA (Contract number MRTN-CT-2004-5652)

**Workshop organisers:** Philip Boalch (ENS Paris), Peter Clarkson (Kent), Lionel Mason (Oxford) and Yousuke Ohyama (Osaka)

**Theme of workshop:** This workshop will give an introduction to Painlevé equations and monodromy problems suitable for postgraduate students and postdoctoral researchers. Topics to be covered include:

- History of the Painlevé equations
- Application of the Painlevé equations to Mathematical Physics
- Differential Galois theory and the Painlevé equations
- Discrete Painlevé equations
- Asymptotic expansions for the Painlevé equations
- Connection formulae and Riemann-Hilbert problems for Painlevé equations
- Algebraic and rational solutions of the Painlevé equations
- Random matrices and the Painlevé equations.

**Invited speakers (to be confirmed):** Philip Boalch (ENS Paris), Boris Dubrovin (SISSA, Trieste), Alexander Its (Purdue University, Indianapolis), Jon Keating (Bristol), Nalini Joshi (Sydney), Frank Nijhoff (Leeds), Kazuo Okamoto (Tokyo), Hiroshi Umemura (Nagoya).

**Location and cost:** The workshop will take place at the Newton Institute and accommodation for participants will be provided in single study bedrooms with shared bathroom at Selwyn College. The workshop package, costing £550, includes accommodation, breakfast and dinner on Sunday 10 September to breakfast on Saturday 16 September, and lunch and refreshments during the days that lectures take place. Participants who wish to attend but do not require the workshop 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/PEM/pemw01.html](http://www.newton.cam.ac.uk/programmes/PEM/pemw01.html). Completed application forms should be sent to Tracey Andrew, Programme and Conference Secretary, Isaac Newton Institute, 20 Clarkson Road, Cambridge CB3 0EH or via email ([t.andrew@newton.cam.ac.uk](mailto:t.andrew@newton.cam.ac.uk)).

Closing date for the receipt of applications is **28 April 2006**.

ISAAC NEWTON INSTITUTE FOR MATHEMATICAL SCIENCES

## PAINLEVÉ EQUATIONS AND MONODROMY PROBLEMS: RECENT DEVELOPMENTS

18-22 September 2006

in association with the Newton Institute programme entitled  
*The Painlevé Equations and Monodromy Problems* (4-29 September 2006)

Partially supported by: The European Community through the  
FP6 Marie Curie RTN ENIGMA (Contract number MRTN-CT-2004-5652)

**Workshop organisers:** Philip Boalch (ENS Paris), Peter Clarkson (Kent), Lionel Mason (Oxford) and Yousuke Ohyama (Osaka)

**Theme of workshop:** This workshop will give a survey of recent developments in Painlevé equations and monodromy problems. Topics to be covered include:

- Geometry and Painlevé equations
- Riemann-Hilbert problems and isomonodromic deformation equations
- Painlevé hierarchies
- Integrability for discrete equations
- Discrete Painlevé equations and applications to orthogonal polynomials
- Painlevé equations and random matrix models

**Invited speakers (to be confirmed):** Dmitro Arinkin (CalTech), Alexander Bobenko (Berlin), Benjamin Doyon (Oxford), Rod Halburd (Loughborough), John Harnad (Montreal), Nigel Hitchin (Oxford), Katsunori Iwasaki (Kyushu), Dimitri Korotkin (Concordia), Igor Krichever (Columbia), Arno Kuijlaars (Leuven), Ilpo Laine (Joensuu), Masatoshi Noumi (Kobe), Jean-Pierre Ramis (Toulouse), Shun Shimomura (Keio), Sasha Veselov (Loughborough), Walter Van Assche (Leuven), Pierre van Moerbeke (Louvain).

**Location and cost:** The workshop will take place at the Newton Institute and accommodation for participants will be provided in single study bedrooms with shared bathroom at Selwyn College. The workshop package, costing £550, includes accommodation, breakfast and dinner from dinner on Sunday 17 September to breakfast on Saturday 23 September, and lunch and refreshments during the days that lectures take place. Participants who wish to attend but do not require the workshop 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/PEM/pemw02.html](http://www.newton.cam.ac.uk/programmes/PEM/pemw02.html). Completed application forms should be sent to Tracey Andrew, Programme and Conference Secretary, Isaac Newton Institute, 20 Clarkson Road, Cambridge CB3 0EH or via email ([t.andrew@newton.cam.ac.uk](mailto:t.andrew@newton.cam.ac.uk)).

Closing date for the receipt of applications is **28 April 2006**.

## 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](http://www.lms.ac.uk/meetings/calendar.html)).

### APRIL 2006

- 3-7 Number Theory & Polynomials Workshop, Bristol (344)
- 3-7 Jordan Structures in Analysis & Geometry Conference, Taiwan (342)
- 3-7 European Study Group with Industry, Bath (347)
- 5 Reductive Groups and their Representations, Oxford (347)
- 7 Bristol-Leicester-Oxford Colloquium, Oxford (347)
- 7-11 Category Theory and its Applications, Chicago (346)
- 10-13 BMC, Newcastle (344)
- 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 (347)
- 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)
- 5-6 Operator Algebra Workshop, Belfast (347)

- 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 (347)
- 16-18 Teichmüller Theory and Cluster Algebra LMS Workshop, Leicester (347)
- 17-18 Combinatorics at Reading (347)
- 19-20 Groups in Galway, Galway (346)
- 25-31 Nonstandard Methods and Applications in Mathematics Congress, Pisa, Italy (347)
- 26 Edinburgh Mathematical Society Meeting, St Andrews (341)

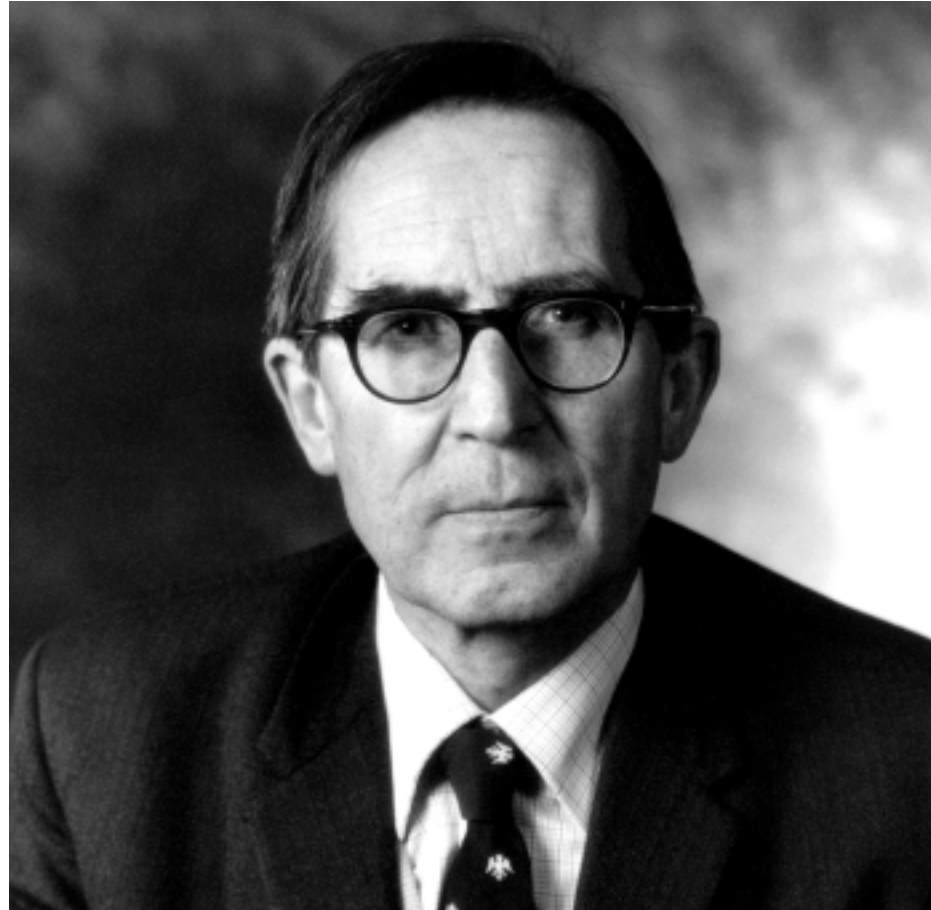
### JUNE 2006

- 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)
- 14-15 Geometry and Mechanics Conference, Surrey (347)
- 14-17 SING 2 & IMGTA, Foggia, Italy (342)
- 16 LMS Meeting, London (347)
- 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)
- 30-5 Jul Logical Approaches to Computational Barriers, Swansea (343)

### JULY 2006

- 3 LMS Northern Regional Meeting, Leeds (347)
- 3-5 Surgery, Theory Past, Present and Future Meeting, ICMS, Edinburgh (347)

DAVID GEORGE KENDALL  
DE MORGAN MEDALLIST  
1989



Based on the citation: Professor Kendall's major contributions to pure probability, applied probability, statistical theory and computational statistics are a splendid affirmation that mathematics has intrinsic beauty; that it is of great importance for the real world; that it can be applied to practical problems without any sacrifice of depth,

elegance or rigour; and that it is greatly enriched by such applications. Amongst the literature on queues, Kendall's contribution has been of enormous influence. Also it was he who convinced us that computers have totally changed statistics – via startling applications of multidimensional scaling and of techniques based on perturbation of data.