

# THE LONDON MATHEMATICAL SOCIETY



## NEWSLETTER

No. 384 September 2009

### Society Meetings and Events

#### 2009

**Tuesday 15 September**  
Popular Lectures  
Birmingham [page 31]

**Wednesday  
16 September**  
Midlands Regional  
Meeting, Leicester  
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**Friday 20 November**  
AGM  
Presidential Address  
London

**4–6 December**  
Joint meeting  
with the Belgian  
Mathematical Society,  
Leuven

### COUNCIL DIARY

#### 3 July 2009

The Council meeting in July marked the beginning of a period of reflection. The main business was to start thinking about the way forward, following the resignations of the President and Treasurer (as reported in July's *Newsletter*), and the subsequent rejection by members of the proposal for a new mathematical society with the IMA. Council was delighted that Sir John Ball FRS has taken on the role of Interim President until the Council elections in November.

Over the next nine months, Council will be reviewing all the activities of the Society and determining its strategic priorities for the coming years. We need to think about how the Society sees its future and the role it will play in promoting and advancing mathematics. How we develop our collaboration with the IMA and other bodies is an important part of this, and Council will also focus on wider issues of working for the benefit of mathematics, including mathematical research and mathematics education. It is anticipated that Council will hold a Retreat at the beginning of next year to consider this in depth.

Budgetary considerations will also feed into the above strategic discussions. The economic downturn continues to hit not only the Society's investments, but also other sources of income, such as that from room hire, and the long-term future of publications income remains uncertain. At the same time, our expenditure is ever-increasing owing to inflation and the wide range of activities undertaken by the Society.

Members have an important role to play as the Society maps out its plans. A consultation (whose precise form has yet to be decided) is planned, and views on the direction the Society should be taking will be welcome. Council is also keen to increase the membership of the Society, and members' thoughts on how we can achieve this would be helpful.

Council also heard about recent meetings of the Council for the Mathematical Sciences and a very successful gathering of Presidents of Mathematical Societies under the auspices of the European Mathematical Society. A common theme in these meetings was the need to champion the cause of 'blue skies' research, developing a vision for the future of mathematics and promoting this to politicians, policy makers and the public.

Elizabeth Winstanley

## FUTURE COLLABORATION BETWEEN THE SOCIETY AND THE IMA

The Council of the London Mathematical Society (LMS) met on 3 July 2009 after the Special General Meetings on 21 April and 29 May which led to the rejection of the motion to create a new unified mathematical society with the Institute of Mathematics and its Applications (IMA).

Council confirmed that it would continue to develop its fruitful and positive collaboration with the IMA. The Council will seek to strengthen those links and its cooperation with other bodies in mathematical sciences, as part of the Council for the Mathematical Sciences and as a member of the Science Council. It will endeavour to ensure that the views and interests of mathematics in its widest form are voiced and reflected in matters of policy for mathematics, mathematics research and mathematics education.

## HONORARY MEMBERS

The London Mathematical Society has elected Professor Charles Fefferman of Princeton University, USA, and Professor László Lovász of Eötvös Loránd University, Hungary, to Honorary Membership of the Society.

Professor Charles Fefferman's contributions and ideas have had impact on the development of modern analysis, differential equations, mathematical physics and geometry, with his most recent work including his sharp (computable) solution of the Whitney extension problem.

Professor László Lovász has helped to develop the areas of graph theory, combinatorics and theoretical computer science. Lovász has also contributed to the mathematical community in other ways, for example, by serving as President of the International Mathematical Union.

Full citations for Professor Fefferman and Professor Lovász will appear in the *LMS Bulletin*.

## LMS PRIZES 2009

The winners of the LMS prizes for 2009 were announced at the Society Meeting on 3 July. The Society extends its congratulations to the winners, and its thanks to all nominators, referees and members of the Prizes Committee for their contributions to the Committee's work this year.

PROFESSOR ROGER HEATH-BROWN, FRS, of the University of Oxford, is awarded the **Pólya Prize** for his many contributions within analytic number theory, and his dynamic application of analytic methods in wide-ranging investigations of problems spanning number theory and arithmetic geometry.

PROFESSOR VLADIMIR MAZ'YA, FRSE, of the University of Liverpool, is awarded the **Senior Whitehead Prize** in recognition of his contributions to the theory of differential equations.

PROFESSOR PHILIP MAINI, of the University of Oxford, is awarded the **Naylor Prize and Lectureship in Applied Mathematics** in recognition of his contributions to, and influence on, the field of mathematical biology.

DR MIHALIS DAFERMOS, of the University of Cambridge, is awarded a **Whitehead Prize** for his work on the rigorous analysis of hyperbolic partial differential equations in general relativity.

DR CORNELIA DRUȚU, of the University of Oxford, is awarded a **Whitehead Prize** for her work in geometric group theory.

PROFESSOR ROBERT MARSH, of the University of Leeds, is awarded a **Whitehead Prize** for his work on representation theory and especially for his research on cluster categories and cluster algebras.

DR MARKUS OWEN, of the University of Nottingham, is awarded a **Whitehead Prize** for his contributions to the development of multi-scale modelling approaches in systems medicine and biology.

## APPOINTMENT OF INTERIM PRESIDENT AND TREASURER

Council is pleased to announce that Sir John Ball, FRS, Sedleian Professor of Natural Philosophy, University of Oxford, will take on the role of President in place of Professor Brian Davies, FRS, who resigned in May on the grounds of ill-health. Sir John will serve as President until the Society's Annual General Meeting on 20 November 2009.

Dr Brian Stewart, of Exeter College, Oxford, and the Mathematical Institute, University of Oxford, will take on the role of Treasurer, in place of Professor Nick Woodhouse, also serving to 20 November 2009.

## QUEEN'S BIRTHDAY HONOURS LIST

We extend congratulations to Elmer Rees, FRSE, Visiting Professor of Mathematics at the University of Bristol, and Emeritus Professor, University of Edinburgh, on the award of a CBE. Professor Rees served as LMS Vice-President for the period 1994–96, was the Forder Lecturer for 1995 and a member of LMS Council 1987–90 and 1996–99; he chaired the LMS Research Meetings Committee 1998–2002 and served on the Nominating Committee 2002–06. He has served since 2005 as Director of the Heilbronn Institute for Mathematical Research, University of Bristol, and is the first holder of that post.

Professor Richard Donovan Kenway, FRSE, Vice-Principal, High Performance Computing and e-Science and Tait Professor of Mathematical Physics, University of Edinburgh, was awarded an OBE for his services to Science.

### LMS Newsletter

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Typeset by the London Mathematical Society at De Morgan House; printed by Holbrooks Printers Ltd.

Publication dates and deadlines: published monthly, except August. Items and advertisements by the first day of the month prior to publication, or the closest preceding working day.

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Charity registration number: 252660.

## HARDY LECTURERS 2010 AND 2012

The 2010 Hardy Lecturer will be Professor Hiraku Nakajima of the Research Institute for Mathematical Sciences, Kyoto University, Japan. He will be lecturing in Edinburgh, Leeds, Oxford and London – the programme is being finalised and will be advertised in the *Newsletter* in due course.

### Nominations are now sought for a Hardy Lecturer in 2012

The Hardy Lecturer visits the UK for a period of about two weeks, and gives the Hardy Lecture at a Society meeting, normally held in London in July. The Lecturer will also give at least two other lectures, on different topics, at other venues in the UK. The schedule is decided by the Programme Secretary in consultation with the President and the Lecturer, and will be designed to allow as many UK mathematicians as possible to benefit from the Lecturer's presence in the UK.

The Lecturer shall be a mathematician who has not been normally resident in the United Kingdom of Great Britain and Northern Ireland for a period of at least five years, at the time of the award. Grounds for the award of the Lectureship include:

- the achievements of the Lecturer, including work in, influence on, and general service to mathematics; lecturing gifts; and breadth of mathematical interests;
- the overall benefit the UK mathematical community might derive from the visit;
- the possibility of bringing to the UK a mathematician who might otherwise visit rarely or never.

The Lectureship is not restricted to mathematicians working in any specific area of mathematics. No person shall be awarded the Lectureship more than once.

The LMS will pay travel expenses for the Hardy Lecturer, together with initial and final travel expenses for a spouse or established partner. The host department(s) will be expected to provide

office accommodation and the academic support normally offered to a distinguished visitor.

Nominations must have the support of the host department(s), and should be sent by the head of department to the Society's Executive Secretary, at the London Mathematical Society, De Morgan House, 57–58 Russell Square, London WC1B 4HS. In order to give time for a proper consideration of nominees, proposals should arrive by **31 January 2010**. The nominations will be considered by the Programme Committee, which will bring a recommendation to Council in March 2010.

## LMS GRANT SCHEMES

Readers are reminded of the Society's Schemes to provide conference grants (Scheme 1), grants to visitors to the UK (Scheme 2), grants to support joint research groups (Scheme 3), collaborative small grants (Scheme 4), international short visits (Scheme 5), and grants for post-graduate research conferences (Scheme 8).

For full details of these Schemes please see the Society's website ([www.lms.ac.uk/grants](http://www.lms.ac.uk/grants)). Queries regarding applications can be addressed to the Programme Secretary, Stephen Huggett (tel: 01752 586869, email: [s.huggett@plymouth.ac.uk](mailto:s.huggett@plymouth.ac.uk)) or the Grants Administrator, Sylvia Daly (tel: 020 7291 9971, email: [sylvia.daly@lms.ac.uk](mailto:sylvia.daly@lms.ac.uk), Wednesday–Friday) who will be pleased to discuss proposals informally with potential applicants and give advice on the submission of an application.

The next deadline for receipt of applications is **15 September 2009**, and these will be considered at a meeting on 8 October 2009. Applications should be submitted well in advance of the date of the event for which funding is requested. Normally grants are not made for events which have already happened or where insufficient time has been allowed for processing of the application.

Information on other grant schemes operated by the Society, for education, the mathematics/computer-science interface, and childcare, is also available at [www.lms.ac.uk/grants](http://www.lms.ac.uk/grants).



springer.com

## Highlights in Springer's eBook Collection



The book serves as a first introduction to computer programming of scientific applications, using the high-level Python language.

2009. Approx. 720 p. (Texts in Computational Science and Engineering, Volume 6) Hardcover  
ISBN 978-3-642-02474-0 ► € 44,95 | £40.99



The MDPs in this volume include most of the cases that arise in applications.

2009. Approx. 300 p. (Stochastic Modelling and Applied Probability, Volume 62) Hardcover  
ISBN 978-3-642-02546-4 ► € 79,95 | £72.00

### For access check with your librarian

#### The Arithmetic of Elliptic Curves

J. H. Silverman

This book treats the arithmetic theory of elliptic curves in its modern formulation, through the use of basic algebraic number theory and algebraic geometry.

2nd ed. 2009. XX, 514 p. 14 illus. (Graduate Texts in Mathematics, Volume 106) Hardcover  
ISBN 978-0-387-09493-9 ► € 49,95 | £44.99

#### Number Theory

An Introduction to Mathematics

W. Coppel

This introduction to number theory is divided into two parts. Part A covers key concepts and could serve as a first course. Part B delves into more advanced topics and an exploration of related mathematics.

2nd ed. 2009. XIV, 610 p. 17 illus. (Universitext) Softcover  
ISBN 978-0-387-89485-0 ► € 64,95 | £58.99

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## MATHEMATIKA

I have great pleasure in announcing that, beginning in 2010, the LMS will be publishing the journal *Mathematika* on behalf of its owner, University College London.

*Mathematika* publishes both pure and applied mathematical articles and has done so continuously since its founding by Harold Davenport in the 1950s. So far, it has not been published online, but from next year all articles, including the full archive dating back to 1954, will be available electronically via Cambridge Journals Online.

Readers are invited to submit papers to *Mathematika* via the LMS submissions web page at [www.lms.ac.uk/publications/submission.html](http://www.lms.ac.uk/publications/submission.html). The traditional emphasis has been towards the purer side of mathematics, but applied mathematics and articles addressing both aspects are equally welcome.

The *Mathematika* Editorial Board is: Keith Ball, Imre Bárány, Marianna Csörnyei, Timothy Gowers, Francis Johnson, Minhyong Kim, Yaroslav Kurylev, Imre Leader, Peter McMullen, David Preiss, Frank Smith, Alex Sobolev, Jean-Marc Vanden-Broeck and Robert Vaughan.

Kenneth Falconer  
Publications Secretary

## STAFFING STRUCTURE OF THE SOCIETY

Earlier this year a reorganisation of the Society's staff took place. The primary need was to reallocate duties previously done by Susan Oakes, who retired at the New Year (but continues to deal with the Society's *Newsletter*, working from home), but the opportunity was taken also to address the previously 'flat' nature of the staff structure, to create opportunity for progression, and to relieve the areas particularly under pressure. The resulting structure allows areas of work to be covered by small groups of staff, providing cover for sickness and holidays.

The full structure, together with the staff in each area and a brief overview of the activities covered, is as follows:

**Executive Secretary's office:** Peter Cooper (Executive Secretary), Leanne Marshall (PA). Oversight of the administration, strategy and financial planning, personnel.

**Publishing:** Susan Hezlet (Publisher), Ola Törnkvist (Managing Editor), Ben Holmes (Assistant Editor), Phyllis Acheampong (Administrative Assistant). *Bulletin*, *Journal*, *Proceedings*, *Journal of Topology*, *LMS JCM*, *Compositio Mathematica* and *Mathematika*; Publications Committee, Editorial Advisors' Group, negotiations with publishing partners, *Newsletter* production.

**Society and Grants Group:** Isabelle Robinson (Group Head), Sylvia Daly (Grants Administrator), Lorraine Rowley (Secretary), Riaz Ahmad (Short-course Facilitator). Membership, Society meetings, Programme Committee and its grant schemes, Research Meetings Committee and EPSRC-LMS short courses, Durham Symposia, DMH IT and website.

**Council and Committees Group:** Martin Smith (Group Head), Caroline Davis (Mathematics Policy and Promotion Officer), Antony Bastiani (Administrative Officer). Council, Finance & General Purposes Committee, Nominating Committee, Research Policy Committee and LMS policy submissions, International Affairs Committee, Women in Mathematics Committee, Computer Science Committee, Education Committee, Popular Lectures, Prizes Committee (including joint awards), Library Committee, Mathematics Policy Unit, CMS Secretariat.

**Conferences and Building Group:** Dominic Clark (Group Head), Lee-Anne Parker (Receptionist & Facilities Coordinator), Angela Waidson (Facilities Administrator). DMH Conference Facilities, office services, reception and switchboard, building services, Health and Safety, liaison with tenants.

**Accounts Officer:** Ephrem Belay.

## EDITORIAL

Careful watchers of the *Newsletter* will note that we are now starting our seventh year of colour. Inspiration from the fruit bowl at De Morgan House has long expired (fortunately the fruits themselves are occasionally refreshed), and readers may like to conjecture the current governing principle. However, all this could change: the Editorial Board is pleased to announce that from the January issue the General Editor will be Tony Mann. Readers will know that up to now Tony has been doing splendid work as Reviews Editor, and we are delighted that he has agreed to take on the central role, launching the *Newsletter* into the next decade. We congratulate him on this appointment and wish him well in the new position.

After the move, the *Newsletter* will have a vacancy for Reviews Editor. This will be somebody with a range of interests and contacts in areas of interaction of mathematics with other disciplines: history, art, theatre, film and so on, as it is books (exhibitions, plays, films, etc.) of this kind that the *Newsletter* mainly reviews, leaving mainstream mathematics texts to the *Bulletin*. If you would like to suggest a possible candidate, not excluding yourself, please get in touch.

Turning to current matters, this month we carry a response from David Steinsaltz to the piece in the June *Newsletter* by David Hand about responsibility for the use or misuse of mathematical models. This exchange raises interesting and important questions for applications of mathematics: should theorems come with a risk assessment and instructions for use? If you have views on this issue do let us know.

David Chillingworth  
General Editor

## LMS JOURNAL OF COMPUTATION AND MATHEMATICS

The *LMS Journal of Computation and Mathematics (JCM)*, the LMS all-electronic open-access journal, will be hosted by Cambridge University Press from 2010. The archive dating back to 1998 as well as new articles will be available free of charge to all via the CUP website.

The *JCM* publishes high-quality research and expository articles in all areas where mathematics and computation meet. The journal supports electronic add-ons (such as program code, graphics and databases). Papers are subjected to a peer-review process to the same high standards as

other LMS journals. The copyright to all material remains vested in the authors.

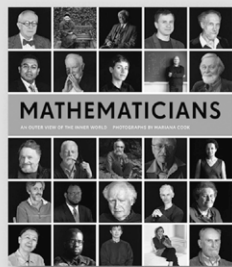
Readers are invited to submit papers to the *LMS JCM* via its homepage [www.lms.ac.uk/jcm](http://www.lms.ac.uk/jcm).

Kenneth Falconer  
Publications Secretary

## BRITISH ACADEMY

Amongst those elected to Fellowship at the British Academy's 2009 AGM was Professor Wilfrid Hodges, formerly Professor of Mathematics, Queen Mary, University of London. The prime criterion for election to the Fellowship of the Academy is academic distinction as reflected in scholarly research activity and publication.





## Mathematicians

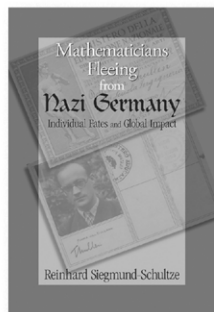
An Outer View of the Inner World

Mariana Cook

With an introduction by R. C. Gunning

*Mathematicians* is a remarkable collection of ninety-two photographic portraits, featuring some of the most amazing mathematicians of our time. Acclaimed photographer Mariana Cook captures the exuberant and colorful personalities of these brilliant thinkers and the superb images are accompanied by brief autobiographical texts written by each mathematician.

Cloth \$35.00 978-0-691-13951-7



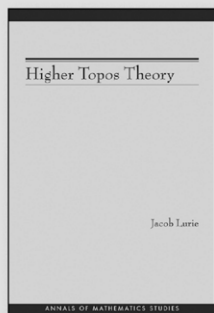
## Mathematicians Fleeing from Nazi Germany

Individual Fates and Global Impact

Reinhard Siegmund-Schultze

The emigration of mathematicians from Europe during the Nazi era signaled an irrevocable and important historical shift for the international mathematics world. *Mathematicians Fleeing from Nazi Germany* is the first thoroughly documented account of this exodus.

Paper \$49.50 978-0-691-14041-4 Cloth \$90.00 978-0-691-12593-0



## Higher Topos Theory

Jacob Lurie

Higher category theory is generally regarded as technical and forbidding, but part of it is considerably more tractable: the theory of infinity-categories, higher categories in which all higher morphisms are assumed to be invertible. In *Higher Topos Theory*, Jacob Lurie presents the foundations of this theory, using the theory of weak Kan complexes, and shows how existing theorems in algebraic topology can be reformulated and generalized in the theory's new language.

Paper \$55.00 978-0-691-14049-0 Cloth \$95.00 978-0-691-14048-3

## FELLOWS OF THE ROYAL SOCIETY

Amongst those elected to Fellowship of The Royal Society in 2009 were:

- Jonathan Peter Keating, Professor of Mathematical Physics and EPSRC Senior Research Fellow, Department of Mathematics, University of Bristol;
- Burt James Totaro, Lowndean Professor of Astronomy and Geometry, Department of Pure Mathematics and Mathematical Statistics, University of Cambridge.

Professor Yakov Sinai (Department of Mathematics, Princeton University, and Senior Researcher, Landau Institute of Theoretical Physics, Academy of Sciences of Russia) was elected a Foreign Member.

## CELEBRATION OF THE LIFE OF WALTER LEDERMANN

A celebration of the life of Walter Ledermann, FRSE, will be held in the Meeting House Chapel at the University of Sussex on 8 October 2009 at 2.30 pm, followed by tea. All are welcome. For further details see [www.maths.sussex.ac.uk/ledermann](http://www.maths.sussex.ac.uk/ledermann) or contact Charles Goldie (C.M.Goldie@sussex.ac.uk, 01273 678311).

## KATHLEEN COLLARD

Dr Kathleen Collard, who was elected a member of the London Mathematical Society on 25 January 1945, died on 2 June 2009, aged 93.

*Dave Johnson and Bob Lockhart write:* After attending Birkenhead Council Secondary School for 10 years, Kathleen won a State Scholarship and Founder's Entrance scholarship to Royal Holloway College, London, in 1934. Having achieved distinction in both BSc and MSc, she proceeded on a postgraduate studentship to work with Max Born at the University of Edinburgh,

where she submitted her PhD thesis 'On the extra spots on the Laue photograph' in June 1941. During the war she was partially deafened as a result of a bomb explosion, a disability that seemed to have virtually no effect on her. She moved to Oxford in 1942 as Lecturer in Mathematics at Somerville College, where she was elected a Fellow in 1947 and served as Dean for eight years. She married her first husband, Dr Basil Geoghegan, just before his death in January 1954, an experience which prompted her to seek experiences beyond those of British Academe.

In 1955, she became Professor of Mathematics at Ibadan, Nigeria, where she married Dr Patrick John Collard and had two children, Ann and James. She returned to the UK in 1965, taking up an appointment in the Mathematics Department at the University of Nottingham as well as the Wardenship of Cavendish Hall. During her time as a warden she was awarded the OBE for her work in improving access to university education to the disabled. She went from there to Unitech in Lae, Papua New Guinea, where she occupied a Chair 1980–87, one of the happiest times of her life. She was a very active and popular professor of mathematics, particularly encouraging mathematical work that related directly to the country, such as Glen Lean's encyclopaedic survey of Melanesian counting systems.

On her return to the UK, she lived near her family in Ilkeston, travelling widely in Europe, China and South Africa. Kathleen had a distinguished academic career and will be remembered by those who knew her for her adventurous spirit and warm and generous personality. She will be sorely missed by her family, friends and colleagues.

[We are grateful to Pauline Adams of Somerville and Vicky Holmes of Royal Holloway, and especially James Collard, for providing much valuable information.]

## KLAUS BIERSTEDT

Professor Klaus Bierstedt, who was elected a member of the London Mathematical Society on 21 May 1976, died on 23 May 2009, aged 64.

*Reinhold Meise writes:* Klaus Bierstedt was born and grew up in Mainz. There he studied mathematics and physics at the Johannes Gutenberg University, where he wrote his diploma and doctoral theses under the direction of B. Gramsch. In the early 1970s he held positions as assistant and as associate professor at the universities of Kaiserslautern and Mainz. He became a full professor at the University of Paderborn in 1974.

Klaus published 57 articles in various areas of functional analysis and organized or initiated many international conferences. He acted as a referee for many mathematical journals and was a member of the editorial committee of *Mathematische Nachrichten* and the *Arab Journal of Mathematical Sciences*. For eight years Klaus was a member of the council of the German Mathematical Society (DMV) and for many years a member of the coordinating committee of *Zbl. Math.* and vice-chair of the FIZ Karlsruhe. Since 1988 he was a corresponding member of the Société Royale des Sciences de Liège, Belgium, and since 1999 of the Real Academia de Ciencias in Madrid, Spain.

Klaus held visiting positions at universities in the United States, Brazil and Spain. He liked soccer, musicals and travelling a lot. The mathematical community has lost a great colleague.

## MARIJKE VAN GANS

Dr Marijke van Gans, who was elected a member of the London Mathematical Society on 18 February 2003, died on 21 April 2009, aged 53.

*Robert Curtis writes:* Marijke was a highly original and exceptionally talented scholar and mathematician, who had become known

internationally as a solver of demanding mathematical problems on the internet. She was a brilliant computer programmer and an inspirational mathematical expositor, as is witnessed by the many accolades to her on the web from people who have been enlightened by her insight.

She was born at Harns or Harlingen in the Netherlands but studied at the University of London from 1987–90, and later lived in Ireland, England and Scotland. Indeed, at one point she was one third of the winning CompuServe SCIMATH Forum Team whilst living on the Isle of Bute. One imagines her in a croft with a state-of-the-art laptop computer, but few other creature comforts! The other two members of her team lived in Wigan and in Memphis, Tennessee, and no two of the trio had ever met face to face.

Encouraged and commended by the many people she had impressed through her problem-solving online, she came to the University of Birmingham in 2004 to research into combinatorics under the supervision of Robert Curtis. Her thesis was entitled *Topics in trivalent graphs* and she was awarded the PhD degree in 2007.

She fell ill earlier this year and, sadly, the seriousness of her condition was not immediately recognised. The disease proved particularly virulent and she died rapidly; thus a unique mathematical talent is lost to us.

## COLLINGWOOD MEMORIAL PRIZE

The 2009 Collingwood Memorial Prize has been awarded to Andrew F. Strangeway, St Cuthbert's Society, University of Durham. The Collingwood Memorial Prize, established in memory of Sir Edward Collingwood, FRS, President of the Society 1969–70, is awarded to a final-year mathematics student at the University of Durham who intends to continue to a higher degree in mathematics at Durham or any other university.

## LONDON MATHEMATICAL SOCIETY

### MIDLANDS REGIONAL MEETING

Wednesday 16 September 2009

Lecture Room 3, Ken Edwards Building, University of Leicester

2.00 LMS Meeting opens

Jean-Louis Loday (Strasbourg)  
*Koszul duality*

3.15 Idun Reiten (Trondheim)

*Coxeter groups and associated rings and categories*

4.15 Tea and poster session

5.00 Ulrike Tillmann (Oxford University)  
*From configuration to moduli spaces*

7.00 Conference meal

The meeting will be followed by a workshop on *Derived Categories in Algebra, Topology and Geometry* from 17 to 19 September 2009.

There are funds available to support graduate students attending the meeting and/or workshop, and for LMS members attending the meeting. All requests for support should be sent to the organisers (details below).

PhD students can bring a poster on their research to be displayed during the afternoon tea break. Springer has donated a prize for the best poster.

For information on scientific questions or for information on organisational matters contact the organisers Teimuraz Pirashvili (tp59@mcs.le.ac.uk) or Nicole Snashall (njs5@mcs.le.ac.uk).

If you wish to attend the conference meal (which will be held at the local Kerala restaurant) then please let the organisers know, preferably by 1 September. The cost will be £18 (excluding drinks).



## Quantitative Arithmetic of Projective Varieties

**Browning, T.D.**  
Bristol University, UK

This monograph is concerned with counting rational points of bounded height on projective algebraic varieties. This is a relatively young topic, whose exploration has already uncovered a rich seam of mathematics situated at the interface of analytic number theory and Diophantine geometry. The goal of the book is to give a systematic account of the field with an

emphasis on the role played by analytic number theory in its development. Among the themes discussed in detail are \* the Manin conjecture for del Pezzo surfaces; \* Heath-Brown's dimension growth conjecture; and \* the Hardy-Littlewood circle method.

Readers of this monograph will be rapidly brought into contact with a spectrum of problems and conjectures that are central to this fertile subject area.

2010. Approx. 170 p. Hardcover  
EUR 44.95 / GBP 40.99 / CHF 69.90  
ISBN 978-3-0346-0128-3  
PM — Progress in Mathematics, Vol. 277

Due in September 2009

BIRKHAUSER

## Elliptic Equations: An Introductory Course

**Chipot, M.**  
University of Zurich, Switzerland

The aim of this book is to introduce the reader to different topics of the theory of elliptic partial differential equations by avoiding technicalities and refinements. Apart from the basic theory of equations in divergence form it includes subjects such as singular perturbation problems, homogenization, computations, asymptotic behaviour of problems in cylinders, elliptic systems, nonlinear problems, regularity theory, Navier-Stokes

system, p-Laplace equation. Just a minimum on Sobolev spaces has been introduced, and work or integration on the boundary has been carefully avoided to keep the reader's attention on the beauty and variety of these issues. The chapters are relatively independent of each other and can be read or taught separately. Numerous results presented here are original and have not been published elsewhere.

The book will be of interest to graduate students and faculty members specializing in partial differential equations.

2009. VIII, 288 p. Hardcover  
EUR 49.90 / GBP 44.99 / CHF 89.90  
ISBN-13: 978-3-7643-9981-8  
BAT — Birkhäuser Advanced Texts

All prices are net prices subject to local VAT, recommended and subject to change without notice.

[www.birkhauser.ch](http://www.birkhauser.ch)

## ANNUAL LMS SUBSCRIPTION 2009–10

Members are reminded that their annual subscription, including payment for publications, for the period November 2009 – October 2010 is due on **1 November 2009**. The renewal form is included with this edition of the *Newsletter* and should be completed and returned with remittance in the enclosed envelope.

### Rates

The annual subscription to the London Mathematical Society for 2009–10 is:

- Ordinary membership £49.00
- Concessionary rates on Ordinary membership
  - Reciprocity agreement with another mathematical society £24.50
  - Career break or part-time working £12.50
- Associate membership £12.50

The member prices of the Society's periodicals for 2010 are:

	Print	Online*	Print+Online*
<i>Bulletin</i>	£51.00	£41.00	£61.00
<i>Journal</i>	£97.00	£78.00	£116.00
<i>Proceedings</i>	£97.00	£78.00	£116.00
<i>JCM</i> (electronic)	—	free	—
<i>Nonlinearity</i> (except N. America)	£69.00	—	£89.00

(\*inclusive of VAT)

Members now have the choice of taking an electronic subscription to the *Bulletin*, *Journal* or *Proceedings* of the LMS at a discount of 20% on the standard price for a print subscription. Alternatively, members may receive both the print and electronic versions for an additional 20% above the price of the print subscription. Once an order for an electronic version has been processed by the LMS, your email address will be passed to Oxford University Press who will contact you with details on how to access the journals.

### Payment

No action is required if you are already paying by direct debit, and do not wish to change your

choice of publications. Fully complete and return the subscription form if you are paying by direct debit but wish to change your choice of publications or add/delete a subscription to the European Mathematical Society. Bank accounts of members paying by direct debit will be debited with the appropriate amount on 15 January 2010. If a member with a UK bank account wishes to start paying by direct debit, a mandate can be requested by email ([membership@lms.ac.uk](mailto:membership@lms.ac.uk)) or downloaded from the LMS website at [www.lms.ac.uk/contact/DDform.pdf](http://www.lms.ac.uk/contact/DDform.pdf). Other members should either enclose a cheque (£ Sterling or US\$) or provide credit card details.

Isabelle Robinson  
Group Head (Society & Grants)

## EUROPEAN MATHEMATICAL SOCIETY

The European Mathematical Society (EMS) was founded in 1990. The purpose of the Society is to further the development of all aspects of mathematics in the countries of Europe. In particular, the Society aims to promote research in mathematics and its applications. It will assist and advise on problems of mathematical education. It concerns itself with the broader relation of mathematics to society. In short, it seeks to establish a sense of identity amongst European mathematicians.

The Society has 2,000 individual members who subscribe through national societies. There are 52 European mathematical societies that are corporate members of the EMS. Subscription as an individual EMS member is normally done through an EMS corporate member society. Just pay the extra amount of £22 for EMS membership when paying your LMS membership subscription. Individual membership comes with free access to *Zentralblatt* ([www.zentralblatt-math.org/zmath/en](http://www.zentralblatt-math.org/zmath/en)) as well as the *EMS Newsletter* ([www.ems-ph.org](http://www.ems-ph.org)) which appears four times a year. It contains information about the Society, announcements of conferences, book reviews and articles of general interest. For further information about the EMS, visit the website at [www.euro-math-soc.eu](http://www.euro-math-soc.eu).

## MATHEMATICS POLICY ROUND-UP

### A-level targets increased

The increases in the number of students choosing mathematics A-level have been so great that the government has raised its target for entries. In 2006 the government set a target of 56,000 entries to the mathematics A-level by 2014 in its *Science and innovation investment framework 2004–2014: next steps* document. In 2006 there had been about 46,000 English entries for mathematics A-level. By 2008, the target had already been reached, prompting the government to announce in June this year that it would be raising the mathematics target to 80,000 entries by 2014. Professor Celia Hoyles, Director of the National Centre for Excellence in the Teaching of Mathematics, said: "The fact that the current target has been met early is testament to the great work that teachers of mathematics have been doing to encourage pupils to stay on and do mathematics A-Level."

### MPs' science scrutiny committee rescued

Fears that the Parliamentary scrutiny of science and technology would be diminished in the recent shake-up of government departments have been quelled, following the creation of a new *Science and Technology Commons* Select Committee. In June, prime minister Gordon Brown merged the former Department for Innovation, Universities and Skills with the former Department for Business, Enterprise and Regulatory Reform to create the Department for Business, Innovation and Skills. MPs argued that a separate Science and Technology Select Committee was vital for cross-departmental scrutiny to ensure that policy decisions are based on good scientific and engineering advice. Usually, select committees are linked directly to a government department. Membership of the former *Innovation, Universities, Science and Skills* (IUSS) Select Committee will transfer directly to the new committee, chaired by Phil Willis, MP. The new committee will be created on 1 October 2009.

### Putting Science and Engineering at the Heart of Government Policy

In a report published in July entitled *Putting Science and Engineering at the Heart of Government Policy*, MPs said the failure to find a stable home for the Government Office for Science has reduced science and engineering advice to, at best, a peripheral policy concern, and, at worst, a political bargaining chip. The *Innovation, Universities, Science and Skills* (IUSS) Select Committee directly appealed to the Prime Minister to bring GO-Science (the Government Office for Science) into the Cabinet Office and it urges the creation of a Government Chief Engineer and a Government Chief Scientist. Other key points included:

- If the Government is to return to 'picking winners' it must have clear priorities and come clean about which areas of research will get less money
- The 2009 Budget Research Council savings are in reality an attempt to influence research funding streams and the Government should not label them as something they are not
- The Haldane Principle should be replaced with a principle which accommodates a much wider range of factors, for example regional science policy.

Welcoming the report, Sir David Wallace, chair of the Council for the Mathematical Sciences, added, "The committee recommended that increased focus in applied research and industrial follow-through should not be at the expense of blue-skies research, which is one of the UK's greatest strengths. This is particularly true in the mathematical sciences, where the timescale between fundamental research and its application can be many years, decades or even centuries."

To read the report visit <http://is.gd/1OCTf>.

### Extra undergraduate places for mathematical sciences

Business Secretary Lord Mandelson announced that there would be 10,000 extra new places created at English universities for students who

want to study mathematics, science, technology and engineering. The places would be allocated by the Higher Education Funding Council for England (HEFCE), following a squeeze on places due to a massive increase in applications. However, confusion ensued as it emerged that universities would receive the students' tuition fees and that the students would be offered the usual financial support packages such as loans and grants, but that that universities would be expected to meet teaching costs from existing budgets. The problem was further compounded just a couple of days later when HEFCE announced it would be cutting its English universities' teaching budget by 1.36% next year to save £65 million. At the time of writing, it was not clear to which institutions the extra places would be allocated.

### Ensuring new financial regulations are based on sound mathematics

In June, the Council for the Mathematical Sciences wrote to Lord Turner, chairman of the Financial Services Authority, requesting a meeting to discuss how the mathematical sciences should contribute towards the new framework being created to regulate the City. Urging him to ensure new plans are as robust as possible, Sir David Wallace, CMS chairman, wrote, "Mathematics is surely the only medium capable of describing quantitatively the complex nature of the products that traders, risk managers, etc are handling, and the economic environment which they are operating in and influencing." The letter attracted interest from the *Financial Times*, which reported on it on 10 June, and Lord Turner has since contacted the CMS to discuss future involvement with the financial mathematics community.

### Use of Mathematics A-level

As the Qualifications and Curriculum Authority consultation on proposed changes to mathematics at A-level closed, a controversy over the planned *Use of Mathematics* A-level spilled into the media. The course is designed for students who need to be able to apply mathematical methods rather than focus on theory. Right-of-centre think-tank

Reform published a report, backed by 64 UK academics, criticising the A-level on several counts. It said the *Use of Mathematics* A-level would not provide sufficiently challenging or broad content to be adequate preparation for higher education; would dilute A-level Mathematics teaching quality; would cannibalise A-level Mathematics as students are encouraged to do the 'easier' qualification and would disadvantage students in the poorest schools as universities continue to insist on A-level Mathematics. The LMS and IMA issued a press statement saying that the qualification was not intended for those planning further study in a mathematically-rich subject and should be clearly labelled as such. The societies believed that the A-level, rather than diluting current Mathematics A-level, would strengthen it and in fact enable more students to carry on studying mathematics beyond A-level. LMS vice-president Professor Alice Rogers said, "While we currently have allegedly equal A-levels in a vast range of subjects I think the proposal represents the best way forward."

To see the Reform report and the LMS response visit <http://is.gd/1OCvd>.

### The Maths Inside

For the third year, the LMS-IMA Mathematics Promotion Unit worked with scientists who are showcasing their work at the Royal Society Summer Science Exhibition. The *Maths Inside* project aims to draw out some of the mathematics used in the research both to highlight how fundamental mathematics is to science, but also to entertain and inform visitors. This year, *Maths Inside* created factsheets to accompany the stands of: a team of palaeo-detectives who use ratios of isotopes to analyse what had been cooked in excavated shards of cooking pots; researchers looking at the surfaces of leaves and what makes them waterproof; and a third team which looked at the symmetries of normal and mutant snapdragon flowers. The factsheets are available on the Mathematics Promotion Unit website at [www.mathspromotion.org.uk](http://www.mathspromotion.org.uk).

Caroline Davis  
Mathematics Policy and Promotion Officer



**CMS DIARY****Summer 2009**

This diary entry draws together some of the key areas of interest from the Council for the Mathematical Sciences' (CMS) work in recent months, and reports on a number of recent meetings which relate to them. Policy submissions referred to below are available on the CMS website at [www.cms.ac.uk](http://www.cms.ac.uk).

**Research Excellence Framework**

The CMS meeting on 29 May was supplemented by a lunchtime discussion session on the development of the Research Excellence Framework (REF). David Sweeney (Director of Research, Innovation and Skills, HEFCE) and Malcolm MacCallum (Member, REF Expert Advisory Group) joined the usual CMS attendees for a stimulating debate on some of the particular features of mathematical sciences research that HEFCE should be aware of as it develops the detail of the assessment system to replace the Research Assessment Exercise.

One area of discussion was the number and makeup of assessment panels; we were told that there was likely to be a move towards smaller numbers of panels in the REF in order to demonstrate to the Treasury that there has been a reduction in the burden of the process. With this in mind, it was the general consensus that a combined mathematical-sciences panel covering pure mathematics, applied mathematics, statistics and operational research would make sense. In particular, it was felt that it would make much more sense than combining mathematics with engineering, for instance, given the imbalances between the disciplines in grant income and the number of doctoral students.

Those who have been following the development of the REF on HEFCE's website and in the media will be aware that there is now much less emphasis on bibliometrics,

with peer review panels informed by such data as appropriate for their disciplines. Citation data are particularly difficult to interpret in mathematical sciences research, with long lead times before research has an impact, which often manifests itself in an unexpected way. 'Impact' is a big theme in research funding at the moment – in both Research Councils and Funding Councils – but the CMS suggested caution in HEFCE assigning too much weight to the assessment of impact in the REF, given the difficulty in measuring this in mathematical sciences over any short timescale. We also encouraged 'impact' to be viewed in the broadest terms by both researchers and funders – economic, social, cultural and academic impact are all valid measures of the significance of research and justification for public investment.

**Support for 'blue skies' research**

In a similar vein, the CMS has been working on producing a paper that makes the case for supporting 'blue skies' research in mathematical sciences, giving concrete examples of curiosity-driven research that has had a substantial impact in a surprising way many years after first being published. Examples in our current draft include brain imaging, face recognition and digital communications technologies, all of which rely on 'blue-skies'-generated mathematics and statistics. We are very grateful to Nigel Peake (IMA) and David Hand (RSS) for their work on this document. Reflections from readers on fundamental mathematical sciences research that has had a big pay-off further downstream are very welcome – the more examples we can quote in our meetings the better.

**Support for masters courses and liaison with EPSRC**

The CMS-EPSRC Liaison Group has been working with EPSRC's Mathematical Sciences

Programme on support for masters training in mathematical sciences, following the replacement of 'Collaborative Training Accounts' with 'Knowledge Transfer Accounts' as a possible funding mechanism. Unfortunately experience on the ground suggests that, in practice, very few masters courses will be funded in this way and the difficult decision of either funding a course through a department's Doctoral Training Allocation (and therefore at the expense of the number of PhD students) or cutting the course entirely is being made already.

The Liaison Group has been working with the Programme team to see what support can be provided for masters training in mathematical sciences within the scope of EPSRC's overarching policy of funding only via either KTAs or the DTA. As a result David Harman (Programme Manager) was able to secure a total of £500k for one-off, one-year 'parachute funding' to support courses that would have suffered from the timing of the announcement of the KTA allocation process. This breathing space has been gratefully received by a number of departments and will help keep these courses alive while further consideration of what support can be provided – and at what cost – takes place.

We've also been lobbying the *Innovation, Universities, Science and Skills* Select Committee to investigate the wider issue of responsibility for funding masters courses, and remain active in raising awareness of this issue. The creation of the Department for Innovation, Universities and Skills two years ago brought both sides of the Dual Support System under one roof under the auspices of Adrian Smith and represented a great opportunity for 'joined-up thinking' on this issue. The merging of DIUS into the Department for Business, Innovation and Skills (BIS) this summer preserves this, and we hope that the opportunity for

a coherent approach will be exploited before a reshuffle separates them again!

**Mathematical Sciences and Multidisciplinary Research 'Themes'**

The CMS held a one-day event in March to encourage mathematical sciences researchers to explore opportunities to fund their research through the multidisciplinary research 'themes' identified in EPSRC's strategic plan. The workshop focused on mathematical sciences in the *Energy* and *Digital Economy* themes, with EPSRC Theme Leaders in attendance to engage in discussion. The event included presentations from researchers who are already funding their research in this way, and break-out groups explored opportunities in more detail.

The CMS-EPSRC Liaison Group has been giving some thought to how to promote and support opportunities in these areas further, and plans for a similar event looking at some of the other themes listed by RCUK. Other themes include *Healthcare*, *Nanoscience* and *Security* – full details are available from the RCUK website.

If you are running or are thinking of running an event associated with these themes, why not get in touch – we would be pleased to hear more about mathematical sciences research in these areas.

A full report of the Energy and Digital Economy workshop and slides from the presentations are available to download from the CMS website.

**Other meetings**

Under the banner of ongoing engagement the CMS has met with Adrian Smith (DIUS) and John Beddington (Government Chief Scientific Advisor), and plans to meet Sir Alan Langlands, the new Chief Executive of HEFCE, over the summer.

Martin Smith  
CMS Secretariat  
[cms@lms.ac.uk](mailto:cms@lms.ac.uk)

## COMPOSITIO PRIZE

### Shortlist

The shortlist for the 2009 Compositio Prize for the best paper in *Compositio Mathematica* is:

- P. Berthelot, S. Bloch and H. Esnault, 'On Witt vector cohomology for singular varieties', *Compositio Mathematica* **143** (2007) no. 2, 363–392.
- M. Aguiar, N. Bergeron and F. Sottile, 'Combinatorial Hopf algebras and generalized Dehn–Sommerville relations', *Compositio Mathematica* **142** (2006) no. 1, 1–30.
- D. Maulik, N. Nekrasov, A. Okounkov and R. Pandharipande, 'Gromov–Witten theory and Donaldson–Thomas theory. II', *Compositio Mathematica* **142** (2006) no. 5, 1286–1304.

The prize-winning article will be chosen and announced in September 2009. The Compositio Prize is a prize awarded every third year by the Foundation Compositio Mathematica in recognition of an outstanding piece of mathematical research that is published in the journal *Compositio Mathematica* during a three-year period. The 2009 Compositio Prize is the first one to be awarded.

## CMFT YOUNG RESEARCHER AWARD

Darren Crowdy, Professor of Applied Mathematics from the Department of Mathematics at Imperial College London, and a member of the London Mathematical Society, has been awarded the 2009 CMFT Young Researcher Award at the Computational Methods and Function Theory (CMFT) conference 2009.

Professor Crowdy's conformal mapping research hit the headlines last year when he updated the 140-year-old Schwarz–Christoffel formula so it could be used for more complicated shapes and, therefore, in more diverse applications in physics and engineering. Professor Crowdy specialises in developing

mathematical techniques for solving engineering problems involving complicated geometries. One example would be computing the electric current flowing through a conducting metallic region that contains pockets of another metal with differing electrical conductivity. The heterogeneous nature of such 'mixed' conductors makes them challenging to study, meaning that mathematical techniques must be invented in order to understand their properties.

The CMFT Young Researcher Award is given every four years for outstanding scientific contributions in the fields of mathematics associated with the CMFT conference, which include the interaction of complex variables and scientific computation, including related topics from function theory, approximation theory and numerical analysis. The award consists of a €1,000 prize.

## INTERNATIONAL CENTRE FOR MATHEMATICAL SCIENCES

### Scientific Director

The International Centre for Mathematical Sciences (ICMS) in Edinburgh is seeking to appoint a scientific director to succeed Professor John Toland, FRS, from September 2010 (or other mutually agreed date).

This is a part-time appointment (not necessarily based in Edinburgh). Expressions of interest are invited from experienced mathematicians with a broad knowledge of the UK and international mathematical scenes. These should be sent as early as possible, and in any case by **15 October 2009**, to the Centre Manager, Mrs Irene Moore (irene.moore@icms.org.uk).

Informal enquiries should be addressed to Professor Jim Howie (J.Howie@hw.ac.uk, 0131 451 3240). Information about ICMS and its activities is available on the ICMS website [www.icms.org.uk](http://www.icms.org.uk).

## CHERN MEDAL

The International Mathematical Union (IMU) and the Chern Medal Foundation (CMF) have jointly launched a new mathematics prize, the Chern Medal Award, in memory of the outstanding mathematician Shiing-Shen Chern.

The Award is to be given to an individual whose lifelong remarkable achievements in the field of mathematics warrant the highest level of recognition. It consists of a medal and a monetary award of US\$500,000. Half of the amount shall be donated to organizations of the recipient's choice to support research, education, outreach, or other activities to promote mathematics.

The Chern Medal will be awarded for the first time at the opening ceremony of ICM 2010 in Hyderabad, India, on 19 August 2010. Closing date for nominations is **15 December 2009**. For more information visit the website at [www.mathunion.org/fileadmin/IMU/Prizes/Chern](http://www.mathunion.org/fileadmin/IMU/Prizes/Chern).

## BRIDGING THE GAPS

The aim of the EPSRC Bridging the Gaps (BTG) initiative is to enable research organisations to build a programme of activities that will stimulate creative thinking across disciplines which reflect institutional strengths and strategies.

Proposals must bridge the remits of at least two research areas (e.g. mathematics and chemistry). This year the Cross-Disciplinary Interfaces Programme (C-DIP) would like to encourage applications that bridge the gap between engineering and physical sciences (EPS) and other, non-EPS, research areas. In particular it would welcome proposals that include interfacing with the social sciences as well as the arts and humanities. The main focus of the proposal must be within EPSRC's remit but

the proposal can look to bridge the gap between an EPSRC discipline and a non-EPSRC discipline.

Proposals must explore the broad range of opportunities that underpin dialogue and engagement between disparate disciplines and not focus on EPSRC's Mission Programme areas (e.g. *Energy, Digital Economy, Next Generation Healthcare, Nanoscience*).

The deadline is **4 pm on Wednesday 16 September 2009**. Further information available at [www.epsrc.ac.uk/CallsForProposals/btgcall.htm](http://www.epsrc.ac.uk/CallsForProposals/btgcall.htm).

## EPSRC FELLOWSHIPS 2010

EPSRC offers these fellowships annually to provide up to five years' funding to talented researchers. The expectation is that fellows will have established themselves as leading researchers of international standing in their area by the end of their award.

**Leadership Fellowships** and **Career Acceleration Fellowships** both provide an opportunity to concentrate on research for the period of the award, as well as support the cost of associated research for the full duration of the fellowship. Career Acceleration Fellowships allow fellows to pursue new research directions and build collaborations internationally, within and across disciplines.

Up to 50 Fellowships will be awarded this year across the Leadership Fellowships and Career Acceleration Fellowships schemes. Deadline for both Fellowships is **4 pm on Tuesday 29 September 2009**.

Further information can be found at the following locations:

- Leadership Fellowships: [www.epsrc.ac.uk/CallsForProposals/lfcall09.htm](http://www.epsrc.ac.uk/CallsForProposals/lfcall09.htm)
- Career Acceleration Fellowships: [www.epsrc.ac.uk/CallsForProposals/cfcall09.htm](http://www.epsrc.ac.uk/CallsForProposals/cfcall09.htm)

UNIVERSITY OF CAMBRIDGE

FACULTY OF MATHEMATICS

ADAMS PRIZE

Fluid Mechanics

The University of Cambridge has announced the subject for one of its oldest and most prestigious prizes. The Adams Prize is named after the mathematician John Couch Adams and was endowed by members of St Johns' College. It commemorates Adams's discovery of the planet Neptune, through calculation of the discrepancies in the orbit of Uranus.

The Chairman of the Adjudicators for the Adams Prize invites applications for the 2009-10 Prize which will be awarded this year for achievements in research on Fluid Mechanics.

The prize is open to any person who, on 31st October 2009, will hold an appointment in the UK, either in a university or in some other institution; and who is under 40 (in exceptional circumstances the Adjudicators may relax this age limit). The value of the prize is expected to be approximately £13,000, of which one third is awarded to the prize-winner on announcement of the prize, one third is provided to the prize-winner's institution (for research expenses of the prize-winner) and one third is awarded to the prize-winner on acceptance for publication in an internationally recognised journal of a substantial (normally at least 25 printed pages) original article, of which the prize-winner is an author, surveying a significant part of the winner's field.

Applications (email and two hard copies), comprising a CV, a list of publications, the body of work (published or unpublished) to be considered, and a brief non-technical summary of the most significant new results of this work (designed for mathematicians not working in the subject area) should be sent to:

**The Secretary of the Adams Prize Adjudicators,  
Faculty Office, Centre for Mathematical Sciences,  
Wilberforce Road, Cambridge, CB3 0WA**

(email: [faculty-office@maths.cam.ac.uk](mailto:faculty-office@maths.cam.ac.uk))

**The deadline for receipt of applications is 31 October 2009.**

OLGA TAUSSKY-TODD  
LECTURE

Call for Nominations

The Olga Taussky-Todd Lecture is held every four years at the International Congress on Industrial and Applied Mathematics (ICIAM). This honour is conferred on a 'woman who has made outstanding contributions in applied mathematics and/or scientific computation'. The lecture is named in tribute to the memory of Olga Taussky-Todd, whose scientific legacy is in both theoretical and applied mathematics, and whose work exemplifies the qualities to be recognized. Deadline for nominations is **18 October 2009**. For more information, go to: [www.iciam.org/council/OTT-CallforNominations2011.pdf](http://www.iciam.org/council/OTT-CallforNominations2011.pdf).

ATHENA REPORTS

In April 2009 the Athena Forum launched two reports with findings on Women's Career Progression and Representation in Science. These reports are now available online at [www.athenasurvey.org.uk](http://www.athenasurvey.org.uk).

**Athena Forum Report 1.** *Women's career progression and representation in Science, Technology, Engineering, Mathematics and Medicine (STEMM) in Higher Education.* A guide to good practice for professional and learned Societies including examples of good practice by UK STEMM societies that are represented on the Forum (including the LMS). It is hoped that other UK professional and learned societies will read and discuss this report. The Forum will be returning to this topic early in 2010, when it wants to widen its discussion to include the work of societies not directly represented on the Forum.

**Athena Forum Report 2.** *Athena Surveys of Science Engineering and Technology (ASSET): Headline Findings on Women's Career*

*Progression and Representation in Academic Science from the 2003/04 and 2006 Surveys.* This provides a baseline for the Forum's work, and evidence of where action is needed to improve women's career progression in STEMM in higher education. It will be of interest to STEMM stakeholders, professional and learned societies, and to universities and their STEMM departments. The Forum is delighted that the future of ASSET has been secured by a grant from HEFCE's Leadership, Governance and Management Fund to Imperial College in partnership with The Royal Society.

The Athena Forum's mission is to provide strategic oversight of developments that seek to, or have proven to, advance the career progression and representation of women in science, technology, mathematics and medicine in UK higher education. The Forum explores gaps and challenges, and identifies and commends national and international excellence in supporting women in science. It is the expert voice from within and for the science community. Its members are nominated by the UK's leading scientific professional and learned societies. The Forum is based at and supported by The Royal Society.

ANGLO-FRENCH  
MHD MEETING

The French GDR-Dynamo group will this year be organizing its annual meeting in Cambridge from 14 to 15 September. Any UK researcher in magnetohydrodynamics (astrophysical or otherwise) is invited to attend. An LMS conference grant provides partial support for UK research students. The accommodation deadline is 28 August but late registration is accepted until **4 September**. Contact the organiser Michael Proctor ([m.r.e.proctor@damtp.cam.ac.uk](mailto:m.r.e.proctor@damtp.cam.ac.uk)) for further details. For full details of the meeting visit the website at [www.phys.ens.fr/~dormy/MHD/DAMTP09](http://www.phys.ens.fr/~dormy/MHD/DAMTP09).





**Events organised by the  
Mathematical Sciences  
Section:**

**Saturday 5 September**  
**The Magic of Computer Science**  
A clever conjuring show which challenges the audience to work out how the tricks are done. Performed by Peter McOwan, professor of computer science at Queen Mary University of London.

**Mathematics and Meltdown: How Financial Systems Collapse**  
How do we model what goes on in the City when the structures are changing so rapidly? What is the role of statistics in modelling the speculation and high levels of interdependency across markets today?

**Sunday 6 September**  
**From Flapping Birds to Space Telescopes: The Modern Science of Origami**  
Robert Lang, an artist and expert on the mathematics of origami shows how its theorems illuminated long-standing mathematical questions and solved practical engineering problems which even have applications in space.

**Why do journalists love stupid equations?**  
Simon Singh, journalist and documentary maker, asks why the press are suckers for pseudo-mathematical formulas which PR companies cynically use to create quick and easy news stories (Presidential lecture).

**Tuesday 8 September**  
**Chaos in Climate: An Inconvenient Truth?**  
Being able to make sense of the chaos in weather and climate is one of our greatest triumphs. Ian Roulstone and Lucia Elghali, from the University of Surrey show how mathematical modelling is also helping us to devise strategies for adapting to a changing climate.

**Thursday 10 September**  
**Fly Me to the Moon**  
Going back to the moon is the latest focus for space travel. But new mission designs mean sophisticated new mathematical techniques will be needed. Explore with Mark Roberts and Phil Palmer from the University of Surrey.

For more information visit [www.britisheciencefestival.org](http://www.britisheciencefestival.org) or call 0207 019 4947  
The British Science Association is a registered charity, no: 212479 and SC03923

## MATHEMATICS OR MISMANAGEMENT: THE CRASH OF 2008

In the June issue of this *Newsletter*, David Hand wrote to absolve financial mathematics of blame for the current global financial crisis. Not just mathematics, in fact. In this telling, there was no crime, merely a blunder. Everyone is innocent. The banking executives suffered from “misplaced ignorance of sophisticated maths”. The mathematicians working for banks performed correctly the narrow technical task they were assigned, and the research mathematicians cannot be expected to understand the consequences of their models. Even the vilified models themselves are not to blame: credit scoring models are “highly accurate”, and rating models are at least “fine” (“although associated uncertainty was underestimated”). (*The boat is fine, although the assimilated water was underestimated...*) If there is any fault at all in these sadly traduced mathematicians, the President of the Royal Statistical Society opines, it is only that they have failed to be statisticians, who would surely have done the job properly. It seems (by his account) purely a happenstance that it was the bankers who sacked away billions of pounds and the public purse that was left with the debts. It might have been the other way around, one supposes, and it is an “extraordinary assertion” that mathematicians could share some responsibility when the global financial system crashed in a machine designed and built by mathematicians. After all, if he “jumped into the cockpit of a Boeing 747, and crashed it because I didn’t know how to fly it, you would hardly blame Joe Sutter, the 747 chief engineer.” One wonders where this analogy is intended to lead; and especially, which pilot these mathematicians expected would appear, to fly their investment algorithms, if the financial officers of investment banks were not qualified.

Not long after I finished my PhD in probability theory, a substantial fraction of the

field was devoured by financial mathematics. Particularly in Europe, probability theory positions disappeared, to be replaced by openings in financial mathematics. About ten years ago, a very senior Dutch mathematician asked me if I might be interested in joining his own institute’s planned financial mathematics group, for which they had funding to create ten new positions. My reply was that finance did not interest me as a topic of research, and I added that it might be considered improper to divert the power accumulated in centuries of publicly supported research into helping a few banks extract wealth from financial markets. Of course, the banks were free to hire the mathematicians as they saw fit, but why should publicly funded research institutes and universities be adopting their priorities?

Looking back, I am not ashamed to admit that my judgement then was basically wrong. Despite my skepticism, I presumed that the financial mathematicians did have useful skills, like post-Soviet nuclear scientists selling out their weaponisable expertise to the highest bidder. It turns out, though, that they were at best like the Tintoretto painting in the mafia chief’s foyer: not a practical contribution, but a decoration and a distraction, intended to inveigle the public and suggest respectability. Or worse, they were like the mafioso’s accountant or lawyer, who contrives a subterranean alternative for what would be straightforward – and straightforwardly illegal – if done out in the open. Thus credit default swaps, which are simply insurance by another name, without the requirements of capital reserves and intricate regulations imposed on the insurance industry; and auction-rate securities, that duplicate banking functions, while evading the expensive regulation that was supposed to ensure the stability of real banks. There is, to be sure, real technical skill involved in this evasion, like the skill that the mob bookkeeper needs to keep



the public set of books pristine while laundering extortion money.

Each generation's financial pirates confront this challenge: how to cajole potential victims out of the residue of prudence remaining from the last economic crash? I recall a lunch one day in 1997, before a seminar talk in Utrecht, when an illustrious probabilist had a good chuckle over the Albanian riots, following on half the population losing what little savings they had to post-communist government-backed pyramid schemes. It's hard to conceive of the training that leaves people so naïve, he remarked. "In the West no one could fall for a scheme that promised 50 per cent returns a year." In fact, all we demand is that our pyramid schemes come with better packaging. To get the investments flowing required a convincing theory for why the implausibly high returns could be genuine and sustainable, without the risk that usually is the exchange for high returns. The investors need to be convinced that they are special, that the times are special, and that the scheme is far too complex to be worth trying to understand in detail. The public's unreasoning awe of mathematics has proved well suited to shutting down questions, even when the promises being made – effectively, the elimination of risk in precarious gambles on market futures or individuals' credit-worthiness – were as implausible as the Albanian pyramid returns.

As an applied science, probability theory is good at one thing primarily: balancing a large number of small risks against one big risk. The problem is, once you have a mathematical calculus, every output sparkles with mathematical precision, which is easily confused with accuracy. Exploring an intricate mathematical model, and determining how to describe and predict its behaviour with perfect clarity, however diverting and even enlightening, is not the same as describing the real world with perfect clarity, any more than I could plan an alpine expedition

by photographically enlarging a continent-scale map of Europe. Yes, within the model you may compute the counterparty risk to one part in 1000, but the inaccuracies of the model are orders of magnitude greater. Engineers understand this, which is why they follow their model-based calculations with experiments, and then build in a several-fold margin of tolerance. Instead of mimicking the engineers' caution, financial mathematicians boldly rechristen their immature field as 'financial engineering'.

G.H. Hardy famously defended the mathematical enterprise as beautiful and mostly harmless. Though we may question Hardy's perspicacity in citing number theory and relativity as areas of mathematics for which "no one has yet discovered any warlike purpose [...] and it seems very unlikely that anyone will do so for many years", this cherished pose, as a small boy collecting pretty shells on the seashore, is one the mathematical community is free to maintain, as long as it accepts funding at the same level as Hittite studies and Byzantine theology. Instead, in the mass of grant applications, mathematicians hawk their wares like homeopaths: our nostrums are wondrously effective, but there's no need to test them for safety, since they don't really do anything. If mathematicians wish to partake of the wealth and respect accorded to practically useful arts and sciences, though, it is long past time that we consider seriously – and collectively – the risk that someone might pay attention to us.

David Steinsaltz  
Department of Statistics  
University of Oxford

#### Response from David Hand

David Steinsaltz eloquently raises some interesting points about my short piece on the role of mathematics in the financial crisis, but I think he has misunderstood some of what I said. I will not attempt to discuss all such

points here, but would like to mention just a few.

I opened my article by pointing out that mathematics was just one of the relevant factors. It was the one I had been asked to write about (it was an article for the LMS, after all!), but a broader discussion would also have drawn attention to other factors. Indeed David might like to look at a slightly broader discussion (though with primary focus still on the mathematics) which is due to appear in the *Journal of the Foundation for Science and Technology*. That article also mentions greed and fraud, as well as structural issues such as the remuneration strategy for hedge-fund managers, the unwillingness of people to listen to warnings, the moral hazard implicit in the relationship between rating agencies and other bodies, the mobility of staff between regulatory authorities and those they regulate, and the moral hazard associated with being too big to fail.

My article was certainly not intended to suggest that "everyone is innocent", and that it was merely a blunder and not a crime. On the contrary, I thought I said pretty clearly that my view was that those who applied the models without understanding them were at fault ("hardly an acceptable excuse", "despite not understanding [...] happy to act on their recommendations", and so on). These were not the only ones at fault, but they were certainly some of them. To assert that I say it was "purely a happenstance that it was the bankers who sacked away billions of pounds and the public purse that was left with the debts" is incorrect; it is the very opposite of what I said.

David's reference to the public's "unreasonable awe of mathematics" sounds very similar to my own reference to management having a 'misplaced ignorance of mathematics'. In the former case, though, the public could not reasonably be expected to have a responsibility for understanding the mathematics and overcoming the awe, but in the latter case surely one should be justified in expecting

management to overcome their ignorance. My article argues that it was, indeed, their responsibility to do so, and hence blame attaches as a consequence of not doing so.

By the way, David also refers to "the vilified models" and then lumps credit scoring and credit rating models together, while I emphasised their differences. They are entirely different kinds of animal, used for entirely different purposes, based on entirely different populations. Scoring models are empirical models of individual customers, based on millions of people, their transactions, and their behaviour. They are statistical predictive models, based on tools such as regression, neural networks and recursive partition classifiers. Rating models are typically iconic models built to rate corporations, stocks, etc., and use very different ideas. The difference is that of the difference between statistical models and mathematical models.

#### VISIT OF DR A. SIMS

Dr Aidan Sims (University of Wollongong) will be visiting Aberystwyth University from 31 August to 9 October 2009. He has research interests in the field of operator algebras, particularly in the area of  $C^*$ -algebras associated to graphs and product systems, where he has demonstrated his expertise in driving forward the theory of higher-rank graph  $C^*$ -algebras. During his visit he will give talks at the following venues:

- University of Nottingham on Wednesday 30 September (contact Joachim Zacharias, jz@maths.nottingham.ac.uk)
- Lancaster University on Friday 2 October (contact Niels Laustsen, n.laustsen@lancaster.ac.uk)
- Aberystwyth University on Wednesday 7 October (contact Gwion Evans, dfe@aber.ac.uk)

For further information contact Gwion Evans (dfe@aber.ac.uk). This visit is supported in part by an LMS Scheme 2 grant.

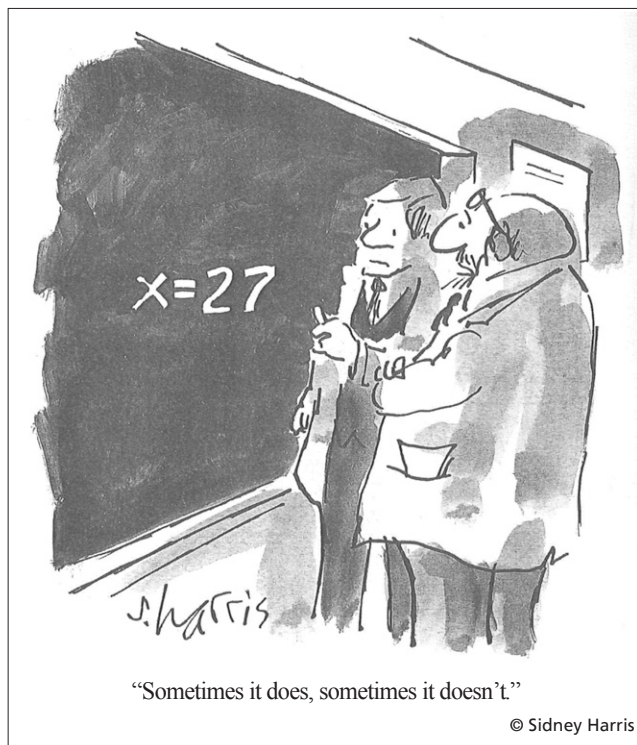
## STOCHASTIC PROCESSES AT THE QUANTUM LEVEL

A meeting on *Stochastic Processes at the Quantum Level* will take place Wednesday and Thursday 21–22 October 2009 at the Institute of Mathematics and Physics, Aberystwyth University. The meeting focuses on recent mathematical developments and applications of classical and noncommutative probability toward modelling the quantum world. There has been considerable interest amongst mathematicians in the quantum generalizations of open systems, statistics, stochastic processes, measurement and filtering theory; however, these pioneering endeavours are now finding direct application in emergent technologies based on the prospect of quantum control. Experts in mathematical and theoretical physics will be brought together to discuss topics in quantum stochastic processes, quantum-filtering based optimal control and coherent control, quantum feedback networks, and quantum statistics and independence. Future challenges will be addressed. The following people have agreed to speak:

- Viacheslav Belavkin (Nottingham)
- Alex Belton (Lancaster)
- John Gough (Aberystwyth)
- Rolf Gohm (Aberystwyth)
- Madalin Guta (Nottingham)
- Robin Hudson (Loughborough)
- Claus Köstler (Aberystwyth)

- Mazyar Mirrahimi (Rocquencourt)
- Andrew Neate (Swansea)
- Hendra Nurdin (Canberra)

The first talk will start at 14.10 on Wednesday afternoon and there will be a dinner on Wednesday night. For registration and further details see the webpage at <http://spqf.dph.aber.ac.uk> or contact the local organisers (details below). There are limited funds available to support graduate students attending the meeting. For more information on scientific questions or information on organisational matters contact the organisers John Gough ([jug@aber.ac.uk](mailto:jug@aber.ac.uk)) and Rolf Gohm ([rog@aber.ac.uk](mailto:rog@aber.ac.uk)).



“Sometimes it does, sometimes it doesn't.”

© Sidney Harris

## DELAY DIFFERENTIAL EQUATIONS

A workshop on *Delay Differential Equations: From Theory to Applications* will take place from 7 to 9 September 2009 at the Department of Engineering Mathematics, University of Bristol. The aim of the workshop is to bring together scientists working in the area of delay differential equations (DDEs) to share ideas, discuss future research directions and give presentations on current research topics. The workshop will include talks on the underlying theory, numerical methods and applications from the world's leading experts, as well as talks on a more introductory level for participants unfamiliar with the area. The workshop will also include a short training session on numerical continuation methods for DDEs aimed at PhD students and post-docs. In line with the open nature of the workshop, the organisers encourage people at all stages of their career to submit talks and/or posters on their research in the field of delay differential equations. Some financial support is available for PhD students. The invited speakers are:

- Dimitri Breda (University of Udine, Italy)
- Markus Dahlem (Technische Universität Berlin, Germany)
- Odo Diekmann (University of Utrecht, Netherlands)
- Thomas Erneux (Université Libre de Bruxelles, Belgium)
- Teresa Faria (Universidade de Lisboa, Portugal)
- Ingo Fischer (Heriot-Watt University, UK), *tb*
- Stephen Gourley (University of Surrey, UK)
- Nicola Guglielmi (L'Aquila University, Italy)
- Ferenc Hartung (University of Pannonia, Hungary)
- Wim Michiels (KU Leuven, Belgium)
- Oleksandr Popovych (FZ Jülich, Germany)
- Jan Sieber (University of Portsmouth, UK)
- Hans-Otto Walther (Giessen University, Germany)
- Jianhong Wu (York University, Canada)

Further information and registration details are available on the website at [www.enm.bris.ac.uk/anm/dde09](http://www.enm.bris.ac.uk/anm/dde09). The workshop organizers are Yuliya Kyrychko and David Barton (University of Bristol). The workshop is supported by an LMS Conference grant.

## DE BRÚN WORKSHOP IN COMPUTATIONAL ALGEBRA

The third De Brún workshop will take place at the National University of Ireland, Galway, from 30 November to 10 December 2009. It will cover a broad range of topics in computational algebra and its applications. The format of the meeting is as follows.

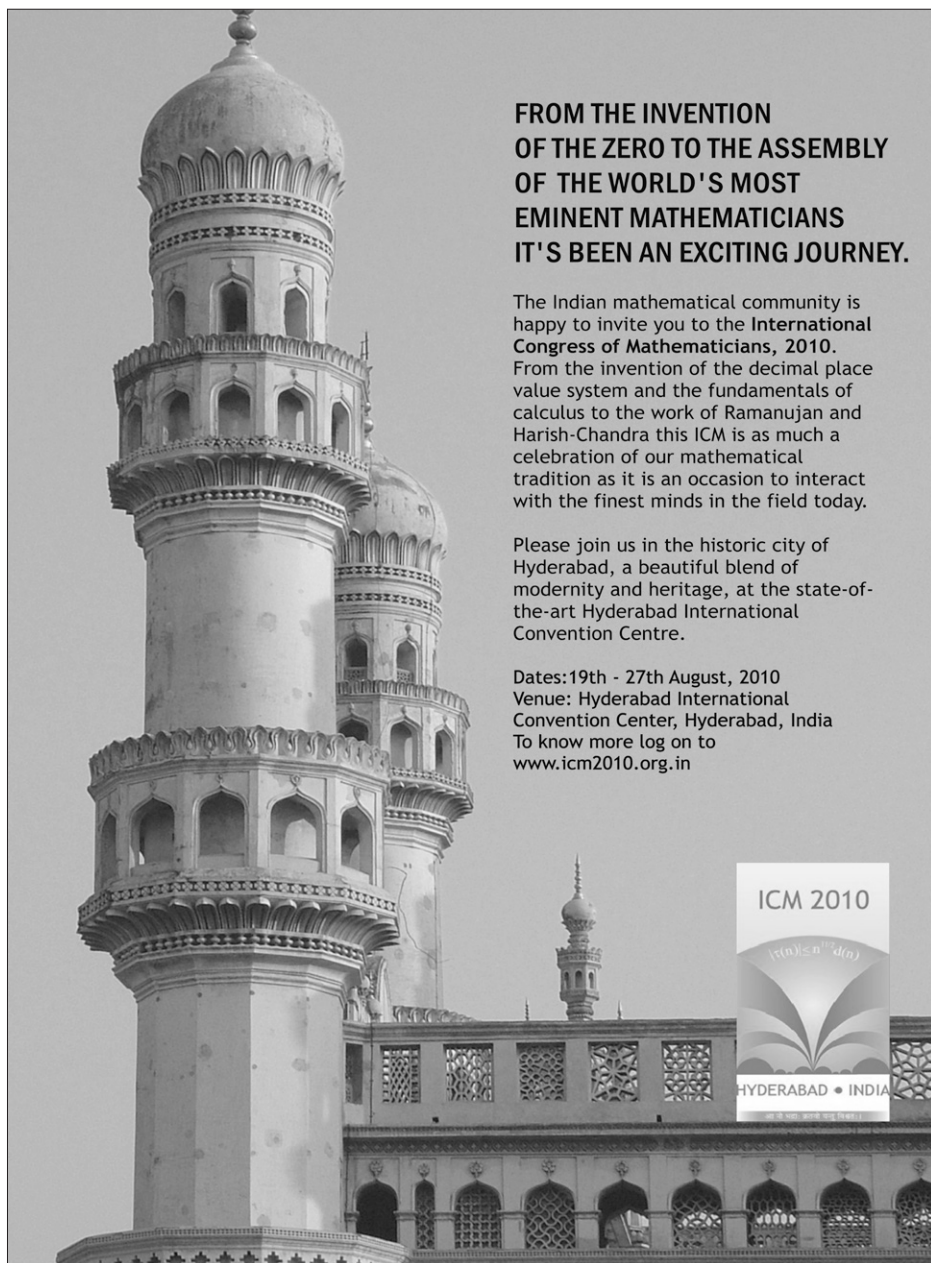
- 30 November – 5 December 2009: an international conference on *Computational Algebra*
- 7–10 December 2009: a series of related short lecture courses, with a particular focus on applications (*Quantum Computing, Lattices and Crystallographic Groups*)

The list of invited speakers includes Nigel Boston, Arjeh Cohen, Fritz Grunewald, Gábor Ivanyos, Richard Jozsa, Charles Leedham-Green, Steve Linton, Frank Lübeck, Gabriele Nebe, Eamonn O'Brien, Igor Pak, Lajos Rónyai, Ákos Seress, Bernd Souvignier, Efim Zelmanov.

The lecture courses offered in the second week will be especially beneficial to early career researchers and postgraduate students.

The organizers are Alla Detinko ([alla.detinko@nuigalway.ie](mailto:alla.detinko@nuigalway.ie)), Dane Flannery ([dane.flannery@nuigalway.ie](mailto:dane.flannery@nuigalway.ie)), Michael McGettrick ([michael.mcgettrick@nuigalway.ie](mailto:michael.mcgettrick@nuigalway.ie)) and Götz Pfeiffer ([goetz.pfeiffer@nuigalway.ie](mailto:goetz.pfeiffer@nuigalway.ie)).

For further information see <http://larmor.nuigalway.ie/~detinko/DeBrun3.htm>. To register attendance, or indicate your interest in giving a talk, send an email to [dane.flannery@nuigalway.ie](mailto:dane.flannery@nuigalway.ie). There is no registration fee. The workshop is funded by the De Brún Centre for Computational Algebra at NUI Galway (<http://hamilton.nuigalway.ie/DeBrunCentre>).



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The Indian mathematical community is happy to invite you to the **International Congress of Mathematicians, 2010**. From the invention of the decimal place value system and the fundamentals of calculus to the work of Ramanujan and Harish-Chandra this ICM is as much a celebration of our mathematical tradition as it is an occasion to interact with the finest minds in the field today.

Please join us in the historic city of Hyderabad, a beautiful blend of modernity and heritage, at the state-of-the-art Hyderabad International Convention Centre.

Dates: 19th - 27th August, 2010  
Venue: Hyderabad International Convention Center, Hyderabad, India  
To know more log on to [www.icm2010.org.in](http://www.icm2010.org.in)



**INTERNATIONAL CONFERENCE OF WOMEN MATHEMATICIANS**

The International Conference of Women Mathematicians 2010 (ICWM) will take place in Hyderabad from 17 to 18 August 2010, immediately before the International Congress of Mathematicians (ICM) in 2010. The meeting is aimed principally at women mathematicians attending the ICM (though men are also very welcome to attend), and in particular at young women mathematicians and women from Asia and from developing countries. The talks will be colloquium-style lectures aimed at a general mathematical audience, and it is hoped that participants will be provided with an opportunity to meet other women mathematicians about to take part in the ICM and to find out about some of the areas of research to be covered at the ICM.

ICWM 2010 is being organized with the support of European Women in Mathematics

([www.math.helsinki.fi/EWM](http://www.math.helsinki.fi/EWM)), the European Mathematical Society ([www.euro-math-soc.eu](http://www.euro-math-soc.eu)) and the Association for Women in Mathematics ([www.awm-math.org](http://www.awm-math.org)). Financial support is being provided by the National Board for Higher Mathematics (NBHM), India, and by Schlumberger. There will be some funding available to support the travel and accommodation costs of women participants from Asian and developing countries, and women from these countries are encouraged to apply to the local organizing committee.

The scientific programme is being planned by the EWM/EMS Scientific Committee, co-opting two mathematicians from India. For more information contact the chair of the organising committee Shobha Madan ([madan@iitk.ac.in](mailto:madan@iitk.ac.in)) or the EWM convenor Frances Kirwan ([kirwan@maths.ox.ac.uk](mailto:kirwan@maths.ox.ac.uk)).



Inspiring Mathematicians

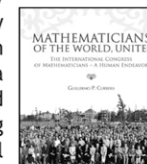
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—Gerald L. Alexanderson, *MAA Reviews*



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## THE MATHEMATICS OF COMPLEXITY SCIENCE AND SYSTEMS BIOLOGY

September 2009 to July 2010 will see an intensive year of research workshop, conference and visitor activity at the University of Warwick, to summarise the state of play in the Mathematics of Complexity Science and Systems Biology, and to identify and address its main challenges and develop key ideas in a range of front-line topics.

Complexity Science is the study of systems with many interdependent components. Its remit spans a wide range of areas, from physical to technological to biological and social systems. One important such area to which particular attention will be given is Systems Biology, the study of organisms from the point of view of systems rather than individual components. We believe that both these subjects depend heavily on mathematics for their healthy development, and conversely they provide rich sources of stimulation for new mathematics.

### Programme of events

- *Information extraction from complex data sets*, 14–18 September 2009
- *European Conference on Complex Systems (ECCS'09)*, 21–25 September 2009
- *Networks: dynamics and flows*, 28 September – 2 October 2009
- *From molecules to bodies: spanning levels of biological organisation in medicine*, 14–15 December 2009
- *Space-time phases for spatially extended systems*, 6–8 January 2010
- *Non-equilibrium dynamics of spatially extended interacting particle systems*, 11–13 January 2010
- *Mathematical and statistical aspects of molecular biology (MASAMB)*, 29–30 March 2010
- *Learning and inference in computational systems biology (LICSB)*, 30–31 March 2010
- *Game theory for financial, social and biological sciences*, 14–16 April 2010

- *Ecology, epidemiology and evolution: biological processes and artificial analogues*, 20–22 April 2010
- *Dendrites, neurones and networks*, 7–10 June 2010
- *Clocks, switches and signals*, 14–19 June 2010
- *Spatio-temporal dynamics challenges from fluorescence data*, July 2010 (dates to be fixed)

All are welcome to attend. For more information and to register, please see [www2.warwick.ac.uk/fac/sci/maths/research/events/2009-2010/symposium](http://www2.warwick.ac.uk/fac/sci/maths/research/events/2009-2010/symposium). Registration fees are required for ECCS'09, MASAMB and LICSB. The organisers Robert MacKay and David Wild are grateful to EPSRC for financial support for the speakers at the main series of workshops.

## ONE-TO-ONE TUITION PROGRAMME

The Training and Development Agency for Schools (TDA) has launched a *One-to-One Tuition Programme* to help children gain more confidence and understanding in English and mathematics. Designed for the pupils who would benefit the most, it complements classroom teaching by addressing barriers to learning that are personal and particular to each child. Key Stage 2, 3 and 4 pupils will benefit from the programme.

There are many benefits to becoming a tutor on the One-to-One Tuition Programme. It is highly flexible: the tutor decides how many pupils to tutor, and when and where to give tuition (it can take place at the child's school or in a town centre location such as a library). Tutors on the programme will get paid a typical rate of £25 per hour for 12 hours per pupil – 10 hours tuition and two hours planning and liaison time with the pupil's teacher. Tuition training will be offered.

The programme is open to newly-qualified, current, former and retired teachers. For more information and to register visit the website at [www.tda.gov.uk/teachers/onetoonetuition.aspx](http://www.tda.gov.uk/teachers/onetoonetuition.aspx).

## LONDON MATHEMATICAL SOCIETY

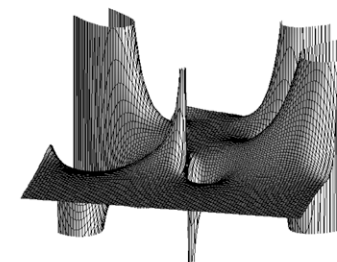
### POPULAR LECTURES 2009

University of Birmingham – Tuesday 15 September

**Dr Nina Snait**  
University of Bristol

#### **Hollywood's Hippest Mathematics: random matrices and Riemann zeros**

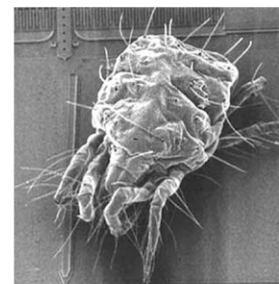
Come and see how physicists helped answer a hundred year old question about prime numbers and how this features in a major Hollywood movie.



**Dr Mark Miodownik**  
King's College London

#### **The Scale of Things**

Fleas can jump over 100 times their own height, flies can walk on water and a hamster can survive falling from aircraft without a parachute. Find out about the maths behind *The Scale of Things*.



Commences at 6.30 pm, refreshments at 7.30 pm, ends at 9.00 pm.  
Admission is free, with ticket. **Apply by 10 September.**

Tickets available from Lee-Anne Parker, London Mathematical Society, De Morgan House, 57-58 Russell Square, London, WC1B 4HS (email: [leeanne.parker@lms.ac.uk](mailto:leeanne.parker@lms.ac.uk)). A stamped addressed envelope would be appreciated.

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



## MATHEMATICAL CURIOSITIES

Professor Ian Stewart FRS will give a Public Lecture on *Mathematical curiosities and treasures from Professor Stewart's cabinet* at The Royal Society, 6–9 Carlton House Terrace, London SW1Y 5AG on Thursday 5 November 2009 at 6:30 pm. Professor Stewart's *Cabinet of Mathematical Curiosities*, a surprise Christmas bestseller, is now accompanied by his *Hoard of Mathematical Treasures*. Both books are mathematical miscellanies for the general public, ranging from one-liners to mini-essays on the great problems and applications of mathematics. The lecture will present a selection of their contents, in an accessible and highly illustrated way.

The lecture is free – no ticket or advanced booking is required. Doors open at 5.45 pm and seats will be allocated on a first-come-first-served basis. This lecture will be webcast live at [royalsociety.org/live](http://royalsociety.org/live) and available to view on demand within 48 hours of delivery.

## MATHS IS EVERYWHERE

Professor John Barrow, FRS, Gresham Professor of Astronomy (and other physical sciences), will give the following Gresham College Public Lectures:

*A sense of balance*, Tuesday 6 October 2009

Why do tightrope walkers always carry long poles? What is the difference between weight and inertia? We take a look at balance and stability, from gymnastics and spinning racquets to the rescue of the International Space Station set spinning by a potentially disastrous collision with its docking vehicle.

*Brilliant-cut diamonds and other tricks of the light*, Tuesday 27 October 2009

Simple mathematics revealed how to cut

diamonds so as to create the most brilliant effect through the refraction, reflection and dispersion of light. We look also at some of the unusual effects of reflection and refraction that have been used to create illusions, and reveal why your right hand becomes your left hand when seen in the mirror but your face is not turned upside down.

*The maths of sorting things out*, Tuesday 24 November 2009

What is the best way to pack? Some examples of different packing strategies will lead us to the best way of packing many things of different sizes. We look at the different strategies that can be used to board passengers on to aircraft and discover that the standard load-from-the-back model is the second worst possible. But what is the best way? What are the best denominations of coins to have in order to be able to make all possible amounts of change as efficiently as possible?

*Code breaking in everyday life*, Tuesday 12 January

Everything we buy, from books to baked beans, has a product code printed on it. More sophisticated check-digit codes exist on official documents, bank notes and air tickets. What are they for and what do they mean? We take a look at the mathematical structure of these codes and explain their purposes. And in this age of boundless surveillance, are there enough numbers for each of us to have a serial number of our own?

*Trains and boats and planes*, Tuesday 9 February 2010

Simple maths can reveal how energy efficient different forms of transport are. We will look at how to drive as fuel efficiently as possible. When does buying a small car help? Does car-pooling always save energy? Simple estimates can also tell us about the relative efficiencies of travelling by road, rail or air – and even by bike.

*Maths and sport*, Tuesday 9 March 2010

Maths can tell us unexpected things about sporting movement and performance. We look at some of the things that we can learn about running, jumping, throwing, swimming and systems of point-scoring by using simple maths and mechanics. Whether you are a coach, a competitor, or just a spectator, maths can enrich your sporting experience!

All lectures take place at 1 pm at the Museum of London, EC2Y 5HN, last one hour and are free and open to the public (no booking required). All Gresham College lectures and events are recorded and made available for free download from the website. For all information visit the website at [www.gresham.ac.uk](http://www.gresham.ac.uk) or telephone 020 7831 0575.

## LIMS EVENING LECTURES

The Lighthill Institute of Mathematical Science (LIMS) Evening Lectures will take place on Tuesday 27 October 2009 at the Bloomsbury Theatre, University College London, from 5.30 pm to 9.00 pm. The lectures will be given by:

- Steve Jones (University College London)  
*Human Evolution: Has it stopped?*
  - Jim Al-Khalili (University of Surrey)  
*Quantum Mechanics, how weird is it?*
- Tickets are free, available from Arren Ariel, Lighthill Institute of Mathematical Science, De Morgan House, 57–58 Russell Square, London WC1B 4HS, tel 020 7209 4772, email: [a.ariel@ucl.ac.uk](mailto:a.ariel@ucl.ac.uk).

## CHRISTOPHER ZEEMAN MEDAL AWARD LECTURE

### Report

The inaugural Christopher Zeeman Medal Award lecture took place on 9 June 2009 at the Science Museum in London. The lecture was delivered by Professor Ian Stewart, FRS,

the first winner of the Christopher Zeeman Medal for the Promotion of Mathematics to the Public. We were delighted that Sir Christopher Zeeman, FRS could attend the event in person.

The event began with a warm welcome from Molly Jackson, Director of the National Museums of Science and Industry, which incorporates The Science Museum as well as The National Railway Museum at York and The National Media Museum at Bradford.

Professor Alice Rogers, vice-president of the LMS, then described the background to the medal and explained why it had been named in honour of Sir Christopher, one of the UK's great pioneers in presenting mathematics to



Sir Christopher (right) presenting the medal to Professor Stewart

the public. She handed over to Professor David Abrahams, president of the IMA, who gave a fond account of Professor Stewart's work both as a mathematician and in the arena of public communication.

Professor Stewart's lecture, entitled *The Strange Case of the Courant–Robbins Train*, centred around a problem that he said had been bothering him for 40 years. It concerns a train and how its motion, and the influence of gravity, would affect a rod pivoted on the floor. In their 1941 book *What is Mathematics?* Richard Courant and Herbert Robbins asked if it were possible to place the rod in such a position that, if it is released when the train starts, it will not fall to the floor during the entire journey. Although this appears to be a complex problem in mechanics, they asserted that the answer is a simple yes and avoided the complexities of mechanics using a simple application of the concept of continuity.

With his trademark geniality and witty presentation skills, Professor Stewart carefully guided the audience through his concern: does the concept of continuity actually apply in this situation? By considering boundary conditions and floors of railway carriages which slanted towards the middle, he showed that in fact Courant and Robbins were correct to assume continuity in the particular case where the carriage has a flat floor although the proof of continuity actually does require a careful analysis of the underlying mechanics. But this is not always the case for other shaped floors.

After the lecture, Sir Christopher presented the Christopher Zeeman Medal to Professor Stewart and reminisced on their time working together at the Mathematics Institute at the University of Warwick.

When the official proceedings had drawn to a close, guests enjoyed refreshments in the Science Museum's Energy Hall which contained a specially assembled exhibition case containing mathematical artifacts including items from the London Mathematical Society's

Plücker collection which are curated by the museum. We are very grateful to Jane Wess, Senior Curator of Astronomy and Mathematics at the museum, for her hard work in putting this together.

The Energy Hall also housed an exhibition of UK mathematical organisations. The Royal Institution played DVDs of the Christmas lectures given by both Sir Christopher and Professor Stewart (the first two mathematicians to be asked to deliver the lectures in 1978 and 1997 respectively) and there were stands from the IMA, LMS, Royal Statistical Society, Millennium Maths Project, Qualifications and Curriculum Authority, Mathematics in Education and Industry and the Fun Maths Roadshow.

As the Science Museum is currently planning a refurbishment of its own mathematics gallery, it recently opened a mini-mathematics exhibition, *From order to obsession: a view of mathematics*, in the Smith Centre – its patrons' area. Ms Wess took several groups of guests on tours of the exhibition.

Attendance for the evening was slightly lower than anticipated owing to a strike by the National Union of Rail, Maritime and Transport Workers which greatly reduced services on the London Underground system. Despite this travel disruption, there was an impressive audience, including LMS and IMA members, government officials, other scientific and mathematical organisations and the press.

The Christopher Zeeman Medal is awarded jointly by the LMS and IMA every three years. The next award will be made in 2011. It recognises and acknowledges the contributions of mathematicians involved in promoting mathematics to the public and engaging with the public in mathematics in the UK. It also serves to demonstrate that such activities are valued by the Societies and the mathematical community at large and are a part of a mathematician's roles and responsibilities.

Caroline Davis  
Mathematics Policy and Promotion Officer

## RECORDS OF PROCEEDINGS AT MEETINGS

### SPECIAL GENERAL MEETING

At a Special General Meeting of the Society held at 2.30 pm on *Friday 29 May 2009* in the Chemistry Lecture Theatre, University College London, Gower Street, London, 39 members were present.

The Vice-President, PROFESSOR F.A. ROGERS, opened the meeting, explaining that she would be chairing the meeting under By-law VIII.2 since the President, Professor E.B. Davies, FRS, had resigned on 24 May 2009 owing to ill-health. She paid tribute to the work and commitment of Professor Davies; the meeting indicated its agreement with these sentiments.

The Chair noted that procedural matters were not covered by the requirement that notice had to be given for all business at the meeting, and that she had a number of such matters to bring before the meeting.

The Chair reported that Council, noting that various procedural and legal issues had been raised at or after the Special General Meeting (SGM) on 21 April 2009, had agreed asking a lawyer to attend the meeting in order to assist with proceedings if necessary. She sought the agreement of the meeting to allow the lawyer to join the meeting.

Votes in favour: 29      Against: 5      Abstentions: 5

Mr Paul Voller of Bircham Dyson Bell joined the meeting.

The Chair asked that, in the ensuing discussions, those speaking should declare any potential conflict of interest, in particular membership of the Institute of Mathematics and its Applications (IMA). She declared that she was a member of the IMA as well as of the LMS but was acting with full impartiality at the SGM as a Vice-President of the LMS and Chair of the Meeting. In that position it was her duty to ensure a balanced discussion in which all who wished might make their views known and thus by the end of the meeting to have discerned the will of the members.

The Chair reported that the following developments since the SGM on 21 April had been reported to members: (a) the resignations of the President and Treasurer, and (b) that Council had held an Extraordinary Council Meeting on 15 May and agreed that, while the criterion required for the motion to be passed at the SGM must remain unchanged at a simple majority, Council would not proceed with negotiations unless the majority voting in favour at the second SGM exceeds two-thirds, on the grounds that a decision of such magnitude should have strong support from the community.

In response to a question, the Chair confirmed that the decision of Council to take forward the motion only on a two-thirds majority would not commit a future Council to interpret the SGM results in the same way.

The Chair reported that the decision not to allow the Programme Secretary's request at the SGM on 21 April for the Meeting to be adjourned had been called into question. While the decision was not necessarily incorrect, Professor Davies, who had chaired

that SGM, had since confirmed that the decision was the result of a misunderstanding of one of the By-laws and an unfamiliarity with Meeting protocol. The Council had been advised that there was no reason to suggest that the rest of the Meeting, or its vote, was invalidated by the action. The Chair sought the agreement of the Meeting to accept the vote taken at the SGM on 21 April.

Votes in favour: 31      Against: 3      Abstentions: 5

The results of the first SGM were therefore accepted and Chair announced that the business of the meeting would therefore proceed as the second of the SGMs required under the Society's Charter to wind up the affairs of the Society. The following motion had been previously notified to members:

that the Council of the London Mathematical Society be authorized to negotiate with the Council of the Institute of Mathematics and its Applications (IMA) in regard to the forming of a New Unified Mathematical Society to replace both the London Mathematical Society and the Institute of Mathematics and its Applications and subsequently to transfer the assets of the London Mathematical Society to the New Society

and to wind up the affairs of the London Mathematical Society and surrender its Charter noting that the New Society will be formed on the principles of the consultation document (*Proposal for a New Unified Mathematical Society*) subject to negotiations with the Charity Commission and Privy Council on the drafting of a new Charter, By-laws and Regulations

and noting that no action will be taken to create the New Society or to wind up the London Mathematical Society unless both societies vote to proceed and the negotiations for a New Society are successful.

In accordance with Statute 23, no other business could be conducted at the Meeting. The Chair announced that, recognising the importance of the issues and that members would wish to discuss the matter, she planned to take comments for and against the motion alternately. She asked that contributions be kept to a reasonable length to allow all who wished to speak to do so.

Professor C.M. GOLDIE, General Secretary, spoke for the motion. He stressed that the intellectual core of the proposed new society was not different from what the LMS stood for and achieved. However, a broader-based society would enable the new society to expand its membership to include mathematicians in teaching positions and those whom they taught.

In the ensuing discussion the following points were made by speakers.

(i) The LMS did not exist for itself but for mathematics. Influencing government was an important task and the speaker accepted that that was difficult if the LMS stayed as it is. It would disadvantage the next generation of mathematicians if the Society did not move forward.

(ii) The assertions in the proposal about the need to influence were unsubstantiated. The LMS represented and drew its authority from a particular constituency; a single voice would not be achieved and would not resolve the matter.

(iii) As a charity, the LMS had as its objective public benefit, not that of a single group or constituency.

(iv) The unification reminded one speaker of the loss of the binary line between the university and polytechnic sectors – the outcome would be exploited by government and not beneficial to mathematics.

(v) A unified society would mean a simpler and clearer organisation, with a single website to present itself to the outside world, for instance. The common feature of members of both societies was their love of mathematics.

(vi) The differences between the two societies were considerable – a learned society vs. a professional body, academic mathematics vs. industrial and research institute mathematics, the financial bases of the two societies. The speaker was not clear why a single society would be more effective in obtaining government support for mathematics.

(vii) The new society would be a combined learned society and professional body, as was the IMA currently, in the same way as the AMS and SIAM. It would be in the hands of its members to make the new society what they wished.

(viii) It was significant that those who were in positions to know felt that mathematics was losing out as a result of the separate societies.

(ix) The proposals retained the purposes for which a large part of the assets of the new society could be used, matching the way that the LMS used those funds at present.

(x) The new society was overly bureaucratic and hierarchical compared with the LMS, which worked well, undertaking highly beneficial programmes of publishing, meetings, grants, etc.

(xi) LMS members had great loyalty and commitment to the Society which may be lost.

(xii) Arguments to keep the LMS as it is could be seen as elitist and overly concerned with retaining benefits for a closed group. The society and its assets existed for mathematical sciences, not for the members. Attempts to regress to an earlier 'golden age' were misguided – there was no golden age.

(xiii) The worlds of mathematics in academe and in industry were not as different as had been portrayed – many companies were based on 'academic' developments of mathematics.

(xiv) The LMS was based on the recognition that few were able to see the beauty and elegance of mathematics, and that it took time and patience for that understanding to grow. Without a body able to nurture those areas that appeared to have no obvious purpose or value, then they would die.

(xv) The new society would find itself taken over by mathematicians from outside academe. Nor was it clear how a new society could represent the UK when there continued to be the Edinburgh Mathematical Society and others.

(xvi) The LMS was indeed an excellent body doing very good work, but a broader society would be able to be representative of a wider mathematical community.

(xvii) The arguments were too polarised and led to unfortunate stereotyping of those with different views.

(xviii) Members of the Society should recognise the vision that the new society offered, and the strength to embrace and achieve it. The two societies existed in a spectrum, not at two disjoint ends.

During the debate, concern was expressed that a member of Council, and thus a Trustee, had spoken and acted in a way to challenge the decision of Council. The General Secretary reported to the meeting that when Council had decided to commend the joint report proposing a new unified mathematical society it had at the same time agreed guidelines by which members of Council could express views contrary to the proposal.

At 15.30 the Chair called the vote. A vote was taken by show of hands; the Chair called for a poll to be taken in order to recognise the proxy votes cast by members before the meeting. The Scrutineers collected voting papers from members. After counting the votes the Scrutineers announced the result:

Votes in favour: 458      Against: 591

Accordingly the motion for the creation of a unified mathematical society with the IMA had failed to receive the approval of membership at two successive SGMs, as required by the Charter. The result would be reported to Council at its next meeting.

Peter Cooper  
Executive Secretary  
1 July 2009

## LMS MEETING ON 3 JULY 2009

A London Mathematical Society Meeting took place in the afternoon of Friday 3 July 2009 at University College London and was attended by about 50 members and visitors.

The Meeting began after official business, which included the announcement of the Society Prizewinners for 2009 by Vice-President Professor David Larman. The first talk was given by Professor Gerhard Huisken (Max Planck Institute) on *The isoperimetric inequality and the concept of mass in General Relativity*. The talk of Professor Huisken started with an overview of the beautiful interplay between the Analysis of PDEs, Differential Geometry and Mathematical Physics when one tries to understand the concept of mass in Einstein's Theory of General Relativity. Mass is of course of paramount importance to the understanding of certain solutions of the gravitational field equations; however, a single accepted mass definition does not yet exist.

One of the highlights of the talk was a simple explanation of the geometrical ideas that underlie mass definitions. The circumference of a

trampoline is independent of the mass lying in it while the area increases with mass. This was the starting point of Hawking's mass definition and is also at the core of the isoperimetric definition of mass.

The second talk *On the mathematical magic of black holes* was given by Professor Sergiu Klainerman (Princeton). It matched smoothly with the first talk as it was concerned mainly with the evolution of the gravitational field equations. The principal questions addressed were those of stability of the exact solutions such as the Kerr solution. Professor Klainerman also discussed the important concept of a trapped surface and its role in modern developments of this field. This concept allows for proving delicate results in a very elegant and concise way.

After the meeting, a reception was held at De Morgan House, followed by dinner in the British Museum, a venue very much appreciated by all.

Christian G. Böhmer  
Department of Mathematics  
University College London

## RECORDS OF PROCEEDINGS AT MEETINGS

### ORDINARY MEETING

held on *Friday 3 July 2009* at University College London. About 50 members and visitors were present for all or part of the meeting. The meeting began at 3.30 pm, with the Vice-President, Professor D.G. LARMAN, in the Chair.

18 people were elected to Ordinary Membership: J. Berndt, D.C. Brody, S.A. Coleman, D.A. Craven, E. Damian, V.M. George, R. Gramlich, C. Iliopoulos, O.S. Kerr, A. Mijatovic, A. Papavasiliou, G. Pavliotis, I. Potapov, P.H. Ransom, S. Schroll, T.Ø. Sørensen, D.C. Stevenson, A. Zaikin; and four were elected to Associate Membership: W.M. Aea, W.G. Anscombe, C.M.W. Little, O. Selim.

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

On a recommendation from Council it was agreed to elect Professor R.A. Bailey and Professor P.T. Saunders as scrutineers in the forthcoming Council elections.

The Vice-President, on Council's behalf, proposed that Professor Charles Fefferman of Princeton and Professor László Lovász of the Eötvös Loránd University be elected to Honorary Membership of the Society. The Vice-President read a short version of the citations, to be published in full in the *Bulletin*.

The President then announced the awards of the prizes for 2009:

<b>Pólya Prize</b>	Professor Roger Heath-Brown, FRS (University of Oxford)
<b>Senior Whitehead Prize</b>	Professor Vladimir Maz'ya, FRSE (University of Liverpool)
<b>Naylor Prize and Lectureship</b>	Professor Philip Maini (University of Oxford)
<b>Berwick Prize</b>	Professor Joseph Chuang (City University) and Dr Radha Kessar (University of Aberdeen)
<b>Whitehead Prizes</b>	Dr Mihalis Dafermos (University of Cambridge)
	Dr Cornelia Druțu (University of Oxford)
	Professor Robert Marsh (University of Leeds)
	Dr Markus Owen (University of Nottingham)

The Vice-President read short versions of the citations, to be published in full in the *Bulletin*.

The Vice-President reported on behalf of Council that Sir John Ball, FRS would take on the role of Interim President in place of Professor Brian Davies, FRS, who resigned in May on the grounds of ill-health. Sir John would serve as President until the Society's Annual General Meeting on 20 November 2009.

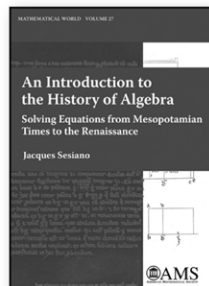
The Vice-President introduced a lecture given by Professor Gerhard Huisken on *The isoperimetric inequality and the concept of mass in General Relativity*.

Following a break for tea, the Vice-President introduced a lecture by Professor Sergiu Klainerman on *The mathematical magic of black holes*.

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



AMERICAN MATHEMATICAL SOCIETY



**AN INTRODUCTION TO  
THE HISTORY OF ALGEBRA**  
**Solving Equations from Mesopotamian Times  
to the Renaissance**

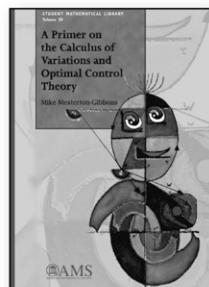
Jacques Sesiano, *Swiss Federal Institute of Technology*  
Translated by Anna Pierrehumbert

This book does not aim to give an exhaustive survey of the history of algebra up to early modern times but merely to present some significant steps in solving equations and, wherever applicable, to link these developments to the extension of the number system. Various examples

of problems, with their typical solution methods, are analysed, and sometimes translated completely. Indeed, it is another aim of this book to ease the reader's access to modern editions of old mathematical texts, or even to the original texts; to this end, some of the problems discussed in the text have been reproduced in the appendices in their original language (Greek, Latin, Arabic, Hebrew, French, German, Provençal, and Italian) with explicative notes.

Mathematical World, Volume 27

Aug 2009 176pp 978-0-8218-4473-1 Paperback £24.95



**A PRIMER ON THE CALCULUS OF VARIATIONS  
AND OPTIMAL CONTROL THEORY**

Mike Mesterton-Gibbons, *Florida State University*

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and physics. Applications described in this book include cancer chemotherapy, navigational control, and renewable resource harvesting.

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REVIEW

**Thomas Harriot's Doctrine of Triangular Numbers: the Magisteria Magna** by Janet Beery and Jacqueline Stedall, European Mathematical Society, 144 pp, 39 illus., €64.00, ISBN-10: 3-03719-059-0, ISBN-13: 978-3-03719-059-3.

**Compter en 1619: Le livre d'arithmétique de Johan Rudolff von Graffenried** by Alain Schärli, Presses Polytechniques et Universitaires Romandes, 160 pp, 44 illus., €37.50, ISBN 978-2-88074-777-0.

Thomas Harriot (c. 1560–1621) is a fascinating figure. Under the patronage of, first, Walter Raleigh and later the 'Wizard Earl' of Northumberland, he acquired a reputation as the leading English mathematician of his time. A plaque commemorating his telescopic observations of the moon in July 1609, in which he anticipated Galileo, has just been unveiled at Syon Park. He worked on a wide variety of topics, not all mathematical. His work circulated in manuscript but none of his mathematics was published in his lifetime (his only published book was the *Brief and True Report of the New Found Land of Virginia* of 1588). The posthumous *Artis Analyticae Praxis* gives only a limited view of his achievements and it is only with

the recent study of his extensive surviving manuscripts that we are becoming fully aware why he was so highly regarded by his contemporaries and immediate successors.

It is therefore extremely appropriate that Harriot's *Magisteria Magna* (the title he gave to a treatise analysing the mathematics of constant differences) should be published in the European Mathematical Society's *Heritage of European Mathematics* series. Harriot's manuscript consists of almost 40 pages, each of which is reproduced here. In this manuscript Harriot expounds his analysis of the use of constant differences in interpolation for the construction of mathematical tables. The editors provide a lucid introduction which gives the background to Harriot's work, discusses the seventeenth-century mathematicians who engaged with Harriot's theory, and shows how it relates to later work by Newton and Gregory.

The *Magisteria Magna* is a wonderful example of Harriot's expository style. He doesn't use many words – '*hoc est*' (that is) on the fourteenth page are the first words after the title! The mathematics is clearly set out and a delight to follow. The editors provide notes to each page (facing the reproduction) to help the modern reader. I imagine many mathematicians will thoroughly enjoy working through this interesting seventeenth-century mathematics in the original, and the editors and the European Mathematical Society deserve our gratitude for making it available.

Harriot wrote a fair copy of the *Magisteria Magna* in 1618, so it makes an interesting contrast with the idiosyncratic arithmetic book of 1619 which Alain Schärli found in a flea market. Johan Rudolff von Graffenried's *Arithmeticae Logisticae Popularis Libri IIII* is written in old German and printed in Gothic script.

Heritage of European Mathematics

Thomas Harriot's  
Doctrine of  
Triangular Numbers:  
the 'Magisteria Magna'

Edited by  
Janet Beery  
Jacqueline Stedall

European Mathematical Society

COMPTER EN 1619

ALAIN SCHÄRLI



Le livre d'arithmétique de  
Johan Rudolff von Graffenried

PRESSES POLYTECHNIQUES ET UNIVERSITAIRES ROMANDES

Its length, at over 700 pages, makes it too long to reproduce in full so Schärilig summarises each section, with copious reproductions showing examples and notation. The mathematics is very different from Harriot's (although constant differences come up in Book IV), but Schärilig's enthusiasm is infectious and my limited school-boy French proved perfectly adequate. For anyone who loves old mathematics books, this is a joy.

Tony Mann  
University of Greenwich

## FERMAT'S ROOM COMPETITION

Thanks to the generosity of Revolver Entertainment, the July *Newsletter* contained a competition offering tickets for the film Fermat's Room, which was reviewed in that issue. The answer to the question is that the pseudonyms of the characters in the film are Hilbert, Pascal, Galois and Oliva. The two winners were Nadia Mazza and Niels Laustsen, both of Lancaster University. Congratulations!

## A WEEK IN THE LIFE OF A MATHEMATICIAN

(with apologies to Michael Flanders and Donald Swann)

'Twas on a Monday morning I had a bright idea,  
I was lying in the bath tub and the strategy seemed clear,  
For a problem posed by Erdős back in nineteen forty nine,  
On sequences dilated into subsets of the line.

'Twas on a Tuesday morning I jotted down my thoughts,  
I covered backs of envelopes with surds and aleph noughts.  
After several cups of coffee I began to feel inspired,  
And a lengthy calculation gave the answer I desired.

'Twas on a Wednesday morning I wrote the details out.  
My lemmas and corollaries left little room for doubt.  
I filled up many pages just to get the logic right,  
And with epsilons and deltas I made it watertight.

'Twas on a Thursday morning I typed the paper up,  
With 'slash subset' and 'slash mapsto' to say nothing of 'slash cup'.  
My LaTeXing was perfect, printed out it looked so good,  
Should I send it to the *Annals*? I rather thought I would!

'Twas on a Friday morning I read the paper through,  
I checked out every detail as good authors ought to do.  
At the bottom of page twenty in an integral I found,  
I'd divided through by zero and the proof crashed to the ground.

On Saturday and Sunday I was too depressed to care,  
So 'twas on a Monday morning that I had my next idea.

Kenneth Falconer

## CALENDAR OF EVENTS

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

### SEPTEMBER 2009

- 3-5 Modern Mathematical Methods in Science and Technology Conference, Poros Island, Greece (380)
- 5-10 British Science Festival, Surrey (383)
- 7 Function Theory Meeting, London (382)
- 7-8 Opening Windows on Maths & Stats, CETL-MSOR Conference, Open University (383)
- 7-9 Delay Differential Equations: From Theory to Applications Workshop, Bristol (384)
- 7-10 Harmonic Map Fest, Cagliari, Italy (382)
- 7-10 Numerical and Analytical Solution of Stochastic Delay Differential Equations Meeting, Chester (382)
- 7-11 **Derived Categories & Applications, LMS-EP SRC Short Course, City University (383)**
- 10-11 Mathematical Models in Ecology and Evolution Meeting, Bristol (382)
- 11-12 Heilbronn Institute Annual Conference, Bristol (382)
- 11-17 Models in Developing Mathematics Education, Dresden, Germany (380)
- 14-15 British Topology Meeting, Leicester (382)
- 14-15 Anglo-French MHD Meeting, Cambridge (384)
- 15 **LMS Popular Lectures, Birmingham (384)**
- 16 **LMS Midlands Regional Meeting, Leicester (384)**
- 17-19 Derived Categories in Algebra, Topology and Geometry Workshop, Leicester (384)

- 21-25 European Conference on Complex Systems, Warwick (383)
- 28-30 Planetsimal Formation Workshop, INI, Cambridge (379)

### OCTOBER 2009

- 6 *A Sense of Balance*, Gresham College Public Lecture, Museum of London (384)
- 21-22 Stochastic Processes at the Quantum Level Meeting, Aberystwyth (384)
- 27 *Brilliant-cut Diamonds and other Tricks of the Light*, Gresham College Public Lecture, Museum of London (384)
- 27 LIMS Evening Lectures, Bloomsbury Theatre, University College London (384)

### NOVEMBER 2009

- 5 *Mathematical Curiosities and Treasures from Professor Stewart's Cabinet*, Public Lecture, The Royal Society, London (384)
- 9-11 Dynamics of Outer Planetary Systems Conference, INI, Cambridge (382)
- 20 **LMS AGM, London**
- 24 *The Maths of Sorting Things Out*, Gresham College Public Lecture, Museum of London (384)
- 30-10 Dec De Brún Workshop in Computational Algebra, Galway (384)

### DECEMBER 2009

- 4-6 **LMS-Belgian Mathematical Society joint meeting, Leuven**
- 8-12 Operators and Operator Algebras Conference, Edinburgh (382)

### JANUARY 2010

- 4-8 Stochastic Partial Differential Equations Workshop, INI, Cambridge (383)
- 11-15 New Topics at the Interface Between Probability and Communications Workshop, INI, Cambridge (383)
- 12 *Code Breaking in Everyday Life*, Gresham College Public Lecture, Museum of London (384)

# H.F.C. LOGAN

LMS member 1876–1882



H. Faulkner White, Cambridge

Rev. Henry Francis Charles Logan, DCL  
Professor of Mathematics, Catholic College of Prior Park  
Vice President, Oscott College