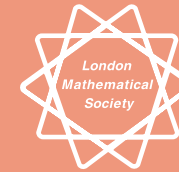


# THE LONDON MATHEMATICAL SOCIETY



## NEWSLETTER

No. 362 September 2007

### Forthcoming Society Meetings

#### 2007

**Wednesday 24  
October**

Northern Regional  
Meeting, Sheffield  
L. Breen  
A. Cattaneo  
[page 3]

#### **Friday 23 November**

AGM, London  
M. Struwe  
J.F. Toland  
Presidential Address

#### 2008

**Friday 8 February**

Mary Cartwright  
Lecture  
Oxford

**Monday 31 March**

Northern Regional  
Meeting  
Manchester

**Monday 9 June**

Midlands Regional  
Meeting, Birmingham

**Friday 4 July**

London

### COUNCIL DIARY

22 June 2007

Council in June began with the good news of the names of mathematicians included among the new Fellows of the Royal Society, and extended its congratulations to Sir John Kingman on his election as a Foreign Associate of the US National Academy of Sciences; both of these items were reported in the July issue. Council was also pleased to learn of the recent appointment of Professor Celia Hoyles as the new Director of the National Centre for Excellence in the Teaching of Mathematics (NCETM), and that Professors Charles Batty and Marc Lackenby (both Oxford University) were to take over as Editors of the *Journal* of the LMS. One of the other pleasant duties of the Council was formally to confirm the winners of the Society's prizes for 2007, details of which were also reported in the previous *Newsletter*.

Much of the Council meeting was taken up with financial issues, particularly agreeing the budgets for the Society's activities for 2007/08 and provisional figures up to 2010. The bids from the various committees and spending units had been scrutinised in depth by the Finance & General Purposes Committee and Council was able

to concentrate on the bigger issues of the balance of the Society's activities and matters of its future income. The Society's publishing income is vital to its current scale of grant-giving and other support for mathematical activity. Publications Committee strives to maintain this component of income and to position the Society to be able to respond to possible future changes in the publishing environment, particularly regarding electronic publishing.

Council is also mindful of the requirements of charities legislation, which restricts how the Society's money can be spent. In particular, Council discussed the requirement that the 'benefit' to members of being in the Society should not exceed the total subscriptions paid by members. A key question is precisely how to quantify 'benefit' in our case, and that requires further work.

The encouraging news was that, for 2007/08, the Society was able to fund fully the proposed programme of activities, and this included some very positive developments.

- (a) An 11% increase in the money available to the Programme Committee for Schemes 1 to 5.
- (b) An increase in the funds available to the Education Committee for its small educational grants scheme.

- (c) The expansion of the Computer Science Committee's initiative to develop a series of papers to inform decision-makers of the opportunities at the mathematics-computer science interface.
- (d) A comprehensive upgrade of the Society's website, on which input will be sought from users (both members and the wider mathematical community).
- (e) A programme of necessary refurbishment of De Morgan House, the building now having been ours for 10 years.

The business of the Council ended promptly at 3 pm, to enable us to adjourn to the Chemistry Auditorium, University College London, for the Society meeting.

Elizabeth Winstanley

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## HANDBOOK AND LIST OF MEMBERS

Together with this *Newsletter* is the 2007 Handbook and List of Members. If any member finds an error in their entry, they should inform the Society as soon as possible either by email (membership@lms.ac.uk) or in writing.

## YOUR LMS

Readers will be aware of our regular column on discussions between the LMS and IMA on a possible merger: comments are continually sought (see page 12). However, although at an early stage the LMS did seek and receive members' comments on the whole notion of a merger, there has been little public debate among the membership, apart from the invited articles in the *Newsletter* (November 2006, no. 353) by Stephen Huggett and David Abrahams against and for a merger respectively. Therefore we encourage members not only to send their views directly to the Next Steps Initiative group (nscontact@btinternet.com) but to submit short opinion pieces to the *Newsletter* from which we will aim to publish a balanced selection. Then, when the time comes to vote, members will be prepared, informed, and ready with well-tuned responses.

Does the colour of the Newsletter for the new session represent a rose-coloured vision or blood on the carpet? We leave it to members to pursue their own metaphors.

David Chillingworth

## LONDON MATHEMATICAL SOCIETY

### NORTHERN REGIONAL MEETING

**Hicks Lecture Theatre 7, University of Sheffield**  
**Wednesday 24 October 2007**

#### 2.30 Opening of the meeting

**Fröhlich Lecture**

**Larry Breen** (University of Paris, XIII)

*Differential forms: an intrinsic perspective*

#### 3.45 Tea

#### 4.30 **Alberto Cattaneo** (University of Zürich)

*The Poisson sigma model*

#### 7.00 Dinner in the Rutland Arms Hotel, Bakewell

For further details or to reserve a place at the dinner, which costs £28.50 including wine, email K.Mackenzie@sheffield.ac.uk.

The meeting will be followed by a workshop from 25–27 October on *Lie algebroids and Lie groupoids in differential geometry*. For further details, see <http://kchmackenzie.staff.shef.ac.uk/october07/> or email Kirill Mackenzie (K.Mackenzie@sheffield.ac.uk) or Ieke Moerdijk (moerdijk@math.uu.nl).

There are funds available to contribute in part to the expenses of members of the Society or research students to attend the meeting and workshop. Requests for support, including an estimate of expenses, may be addressed to Kirill Mackenzie (email above).

## LMS Newsletter

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Items and advertisements by first day of the month prior to publication.

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## HONORARY MEMBERS

The London Mathematical Society has elected **Professor Ingrid Daubechies** of Princeton University and **Professor Dusa McDuff**, FRS, of SUNY New York to Honorary Membership of the Society.

Professor Daubechies is recognized for her key contributions to signal analysis and the theory of wavelets. Her distinguished work has not only motivated engineers to exploit wavelets in numerous modern applications, it has inspired basic research aimed at analyzing wavelets in approximation theory and elsewhere.

Professor McDuff is recognized for her research in many areas of mathematics and in particular in symplectic topology. Her work includes fundamental theorems on symplectic blowup construction, a theorem (with Polterovich) on the symplectic packing problem, a series of papers (with Lalonde) on the symplectic energy and the stability of Hamiltonian flows.

Full citations for Professor Daubechies and Professor McDuff will appear in the *LMS Bulletin*.

## ANNUAL LMS SUBSCRIPTION 2007–08

The LMS annual subscription, including payment for publications, for the session November 2007–October 2008 is due on 1 November 2007. Together with this *Newsletter* is a renewal form to be completed and returned with your remittance in the enclosed envelope.

### Rates

The annual subscription to the London Mathematical Society for the 2007–08 session is:

- Ordinary Members £43.50
- Reciprocity Members £21.75
- Associate Members £11.00

The prices of the Society's periodicals to Ordinary, Reciprocity and Associate Members for 2007–08 are:

- *Bulletin* £44.00
- *Journal* £88.00
- *Proceedings* £88.00
- *Nonlinearity* £62.00
- *Journal of Computation and Mathematics* remains free.

### 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 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 2008. Other members should either enclose a cheque (£ sterling or US\$) with their form or, if they have a UK bank account and wish to take advantage of this convenient form of payment, request a direct debit mandate. Although the facility to pay by credit card is open to all members of the Society, it is our preference that members continue to pay by direct debit.

### Publications Pricing Policy

The LMS has a pricing structure that allows individual members to purchase its journals, for personal use only, at a substantial discount. In common with other mathematical societies, the Society regards a subscription as for personal use only if:

- issues are either destroyed or held on a continuing basis among the member's personal belongings, and are not deposited even temporarily in a library, common room or other public room, and
  - are accessible to other mathematicians (or to students) only with the member's permission, given individually in each case.
- Issues are the personal property of members, who would be able, without negotiation with authorities, to take the issues with them if they left their present institution or to give them to another individual who is willing to abide by these terms.



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### Mr Hopkins' Men Cambridge Reform and British Mathematics in the 19th Century

A. Craik, University of St.  
Andrews, UK

This wide-ranging book tells the story of the remarkable William Hopkins, and his top "wranglers", many of whom went on to illustrious careers as bishops, judges, politicians, scientists or educators. It draws on first-hand accounts of 19th Century life at Cambridge to give the reader a glimpse inside its colleges, and it charts the evolution of the curriculum and the slow reforms that led to Cambridge's dominance of British higher education.

2007. XIV, 410 p. 78 illus., 48 in color. Hardcover  
ISBN 978-1-84628-790-9 ► **€ 99,95 | £65.00**

### Kolmogorov's Heritage in Mathematics

E. Charpentier, Université Bordeaux 1, France;  
A. Lesne, Université Pierre et Marie Curie, Paris,  
France; N. Nikolski, Université Bordeaux 1, France (Eds.)

In this book, several world experts present (one part of) the mathematical heritage of Kolmogorov. Each chapter treats one of his research themes or a subject invented as a consequence of his discoveries. The authors present his contributions, his methods, the perspectives he opened to us, and the way in which this research has evolved up to now.

2007. VIII, 318 p. 38 illus. Hardcover  
ISBN 978-3-540-36349-1 ► **€ 39,95 | £30.50**

### Random Fields and Geometry

R. Adler, Israel Institute of Technology, Haifa, Israel;  
J. Taylor, Stanford University, CA, USA

This monograph is devoted to a completely new approach to geometric problems arising in the study of random fields. The groundbreaking material in Part III, for which the background is carefully prepared in Parts I and II, is of both theoretical and practical importance, and striking in the way in which problems arising in geometry and probability are beautifully intertwined.

2007. XVIII, 454 p. 21 illus. (Springer Monographs in Mathematics) Hardcover  
ISBN 978-0-387-48112-8 ► **€ 54,95 | £42.50**

### Stratified Lie Groups and Potential Theory for Their Sub-Laplacians

A. Bonfiglioli, E. Lanconelli, F. Uguzzoni, Univer-  
sità di Bologna, Italy

The existence, for every sub-Laplacian, of a homogeneous fundamental solution smooth out of the origin, plays a crucial role in the book. This makes it possible to develop an exhaustive Potential Theory, almost completely parallel to that of the classical Laplace operator. This book provides an extensive treatment of Potential Theory for sub-Laplacians on stratified Lie groups. In recent years, sub-Laplacian operators have received considerable attention due to their special role in the theory of linear second-order PDE's with semidefinite characteristic form.

2007. XXVI, 792 p. 23 illus. (Springer Monographs in Mathematics) Hardcover  
ISBN 978-3-540-71896-3 ► **€ 79,95 | £61.50**

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## PROGRAMME COMMITTEE REPORT

Here is a brief and informal report on Programme Committee's work at its meetings in February and June this year.

At our February meeting we always take time to review our grant schemes, taking as long and dispassionate a view of them as we can. This year our discussion quite quickly focused on Scheme 1, because we suddenly faced an enormous number of applications under Scheme 1. The total amount applied for in February was almost the same as the total amount awarded for the whole of 2005–06.

We reaffirmed our long-held view that we did not want to resort to using referees, which would completely change the decision process, slowing it down and imposing an unacceptable burden on staff in De Morgan House. We noted that we were not able to rank the applications, because (except for a few) there was not a very big difference between them. There was a reluctance to defer too many applications, and we preferred to fund all good applications at a lower level rather than not fund some good ones at all, trying to be careful not to reduce the funding so much that the conference would no longer be viable. We then went through the rather delicate process of making our awarding decisions, and afterwards we agreed to ask Council for an increase in the Scheme 1 budget for the current year if the demand remained this high in the June round.

After dealing with grants, we moved on to the various meetings for which Programme Committee is responsible. In particular, we were delighted to confirm that Andrei Okounkov (Princeton University) would give the 2008 Invited Lectures at Imperial College London in April, organized by Richard Thomas.

The Scheme 1 demand at our June meeting was back to normal, which made our work easier, and we were able to devote our ener-

gy to our usual review of reports from the various Schemes. Committee members were very impressed by the amount of good mathematics we are able to support. This led to a corresponding review of the detailed operation of the Schemes, and we agreed to experiment with a streamlined application procedure for Scheme 3, especially for renewals.

We were very pleased with plans for forthcoming Forder and Hardy Lectures. We elected Peter Cameron (QMUL) as our Forder Lecturer: he will be visiting New Zealand to give the lectures in 2008. We elected Shmuel Weinberger (Chicago) as the 2008 Hardy Lecturer: he will be based in Durham.

Stephen Huggett  
LMS Programme Secretary

## MATHEMATICS POLICY ROUNDUP

Since the last *Newsletter*, there have been many changes in the policy world. New Prime Minister Gordon Brown reorganised the government departments to reflect what many see as his strong support for science and innovation. The parts of government which the mathematics community had most contact with – the Department for Education and Skills and the Department for Trade and Industry – no longer exist and have been replaced. The Department for Children, Schools and Families (DCSF) covers education up to age 19 and the Department for Innovation, Universities and Skills (DIUS) looks after further and higher education and the functions of the Office of Science and Innovation which funded the Research Councils.

The departmental changes have meant that the Science and Technology Parliamentary Select Committee is to become the Innovation, Universities and Skills Committee. The Science Council has expressed its disappointment to the government and is concerned that the cross-cutting nature of the former committee will be lost.

It wrote, 'In the absence of scientific interest and expertise on other committees, there is a real danger that there will be no meaningful scrutiny of science and technology in the House of Commons'.

The DCSF Secretary of State, Ed Balls, has asked Sir Peter Williams, currently chair of the Advisory Committee on Mathematics Education, to carry out a review of mathematics at primary school level. The review will 'seek to define the most effective methods of teaching and learning maths to develop pupils' deeper understanding ... The review will also help with the design of Every Child Counts, a new intervention programme for young children who are struggling with numeracy'.

The MATHS-PROM network held a well attended meeting on very rainy day in July entitled 'So many changes in the school curriculum...' Sue Pope, who co-ordinates mathematics at the Qualifications and Curriculum Authority, gave presentations on the many changes under way and how these will affect the mathematics taught at secondary school. These included the new Secondary Curriculum, which will be introduced for 11–14 year olds from 2008, reforms at ages 14–19 and changes unique to mathematics which have come from recommendations in the 2004 Smith Enquiry on mathematics education at ages 14–19.

The Mathematics Promotion Unit has been busy. This summer it welcomed a temporary data analyst Ayad Othman, a recent mathematics graduate from University College London, who is working on updating annual statistics for the unit as well as analysing some data for the Council for the Mathematical Sciences. In a pilot project, the MPU worked with three of the non-mathematics research teams exhibiting at the Royal Society's prestigious Summer Science Exhibition to create leaflets highlighting the mathematical background to their projects. The 'Maths Inside' project worked with teams exhibiting 3 dimensional printers, a tilting car

and a mission to photograph the sun's activity. It received excellent feedback from both the Royal Society and the exhibitors. The MPU is hoping to do similar work at this year's British Association Festival of Science in York this month. Finally, in July the MPU was pleased to secure a meeting with the then Shadow Higher Education spokesman, Boris Johnson, MP.

Further Mathematics continued to be the fastest growing subject at A-level this year. The Further Mathematics Network, which builds partnerships between schools, colleges and universities in order to offer all A-level students the chance to study the subject, was pleased to report a 10 per cent increase in numbers. Since 2005, the number of candidates sitting the examination has risen from around 6,000 to 8,000. The news was welcomed by mathematics departments throughout the UK, as well as by physics, engineering and other mathematics-related course leaders.

Caroline Davis

Mathematics Policy and Promotion Officer

## CECIL KING TRAVEL SCHOLARSHIP 2007

The 2007 Cecil King Travel Scholarship has been awarded to Michael Wemyss, a PhD student at the University of Bristol. The London Mathematical Society makes the award of up to £5,000 annually to a young mathematician of outstanding promise, to support a period of study or research abroad for a typical period of three months. Michael will use the Scholarship to fund a trip to Nagoya University, Japan, during the 2007–08 academic year. He hopes to investigate non-commutative resolutions in algebraic geometry and their links with cluster tilting.





## ■ Discrete Mathematics and Applications

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## JOHN TODD

John 'Jack' Todd, a pioneer in the development of numerical analysis and a key player in the creation of some of the first large computers, died on 21 June at the age of 96. He graduated from Queen's University, Belfast, in 1931 and enrolled at the University of Cambridge, working under J.E. Littlewood and G.H. Hardy. Littlewood did not have a doctorate and disapproved of doctoral degrees, so Todd never received a higher degree, eventually becoming one of the very few professors at the California Institute of Technology without one. After the end of World War II, during which Todd served in the British Admiralty, he saved the Mathematical Research Institute at Oberwolfach from being destroyed, calling it 'probably the best thing I ever did for mathematics.'

## MORRIS NEWMAN

Professor Morris Newman, who was elected a member of the London Mathematical Society on 15 December 1955, died on 4 January 2007 at the age of 82. Newman graduated from New York University with a degree in mathematics, and later received a master's degree from Columbia University and a PhD from the University of Pennsylvania in 1952 under the direction of Hans Rademacher. He worked as a research mathematician for 25 years at the National Bureau of Standards (now the National Institute of Standards and Technology). In 1966 Newman received a gold medal from the Department of Commerce for his development of a set of matrix programs. He moved to California in 1977 where he became a professor at the University of California, Santa Barbara. He published about 100 papers, wrote two books, and served as an editor of two journals. Although Newman retired in 1993, he continued to work with graduate students until early 2005.

## THE CMS DIARY

Spring/Summer 2007

The Council for the Mathematical Sciences met in De Morgan House on 22 May. A considerable amount of time at this meeting was devoted to a discussion of some current issues in education. The CMS remains concerned that not all schools will offer 'GCSE2' mathematics when the new two-GCSE system is introduced, and reaffirmed its belief that all pupils should be entitled to take the second qualification. It was noted that a legal entitlement to study three separate science subjects existed for all pupils achieving a Level 6 at Key Stage 3 – it was felt that entitlement could work on a similar basis for mathematics. The CMS plans to pursue this issue with government and to raise awareness amongst other bodies of the possible negative consequences of not including an entitlement in the proposals.

The publication of the House of Commons Select Committee Inquiry's report on the Bologna Process prompted a media release from the CMS welcoming the emphasis on creating comparability and compatibility – rather than homogenisation – of Higher Education within a European Higher Education Area (EHEA). However, our release also expressed some disappointment that the report had failed to resolve the question of which body will fund the second cycle, despite the issue having been raised by several organisations in their written evidence to the Committee.

The Bologna Process also featured high on the agenda for our meeting with the Higher Education Funding Council for England (HEFCE) on 20 June. Sir David Wallace, Nigel Steele and I met David Eastwood (Chief Executive, HEFCE) and John Selby (Director – Widening Participation, HEFCE) to present some areas of current concern to the CMS and to give a 'heads up'

on issues that may shortly be coming into focus. David Wallace presented our risk analysis of the implementation of the Bologna Process, which focused on the consequences and probability of MSc and Integrated Master's courses not fulfilling the requirements to be considered as Second Cycle qualifications, and the fact that funding issues raised have still not been addressed by government. David Eastwood replied that he thought that the likelihood of UK courses not meeting the requirements of Bologna was low but stressed that the quality of Master's courses must be preserved by HEIs: any erosion of the perception of course quality would be very serious for the UK Master's market and could heighten the risk of courses being deemed insufficient to comply with the Bologna Process or simply failing to compare favourably with other courses in the EHEA. David Eastwood highlighted the work undertaken by the UK HE Europe Unit, which the Funding Councils (together with Universities UK, the Quality Assurance Agency and Guild HE) fund; Peter Giblin (as Chair of the CMS Bologna Working Group) and I have met with Jessica Olley (Acting Manager, Europe Unit) to discuss our concerns and the potential for bodies across the science community to be brought together to explore Bologna issues of common concern.

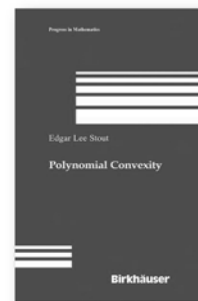
Another 'hot topic' discussed at the meeting with HEFCE was the set of issues raised by Nigel Steele's report *Keeping HE Mathematics Where it Counts: The decline in provision of mathematical sciences courses with more moderate entry requirements – drivers and implications*, which described how mathematics 'deserts' were beginning to appear in areas of the UK. Nigel Steele explained how the closure of a mathematics department affected the local economy and worked against the Government's targets for recruiting specialist mathematics

teachers on a regional level. It was also noted that students who, for various reasons, could not travel far from their home town to study would be disadvantaged if mathematics courses were not available throughout the country. David Eastwood suggested that more imaginative methods of delivering HE courses could help with this problem – the EPSRC Collaborative Training Centres currently being developed were a good example of universities working together to allow students to participate in courses being held some distance away.

The HEFCE meeting also took the opportunity to discuss recent concerns about the sustainability of academic staffing in the mathematical sciences in relation to a reliance on international recruitment. Preliminary data from a recent CMS-HoDoMS survey of departments had indicated that over half of Research Associates in mathematics departments had completed their first degree abroad. Whilst it was acknowledged that the ability of the UK to attract the best mathematicians from around the world was very encouraging, a stronger 'home-grown' supply was needed. The meeting reflected on how the financial draw of well-paid city jobs and the competition for junior positions in universities could be dissuading students from choosing a career in academe or even from studying at the post-doctoral level. The CMS plans to investigate trends in employment and their impact in more detail, and discuss its findings with HEFCE.

We were pleased to have the opportunity to discuss these issues with the Chief Executive of HEFCE, and are hopeful that this meeting will lead to future interaction at this level. In the meantime, issues such as GCSE 1 and 2 and the Bologna Process will continue to occupy our thoughts over the summer period.

Martin Smith  
CMS Secretariat



**Stout, E.L.**, University of Washington, Seattle, USA

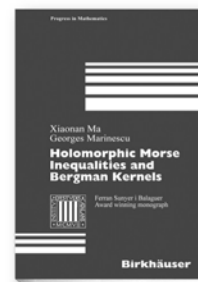
## Polynomial Convexity

This comprehensive monograph details polynomially convex sets. It presents the general properties of polynomially convex sets with particular attention to the theory of the hulls of one-dimensional sets. Coverage examines in considerable detail questions of uniform approximation for the most part on compact sets but with some

attention to questions of global approximation on noncompact sets. The book also discusses important applications and motivates the reader with numerous examples and counterexamples, which serve to illustrate the general theory and to delineate its boundaries.

2007.X, 439 p. Hardcover  
ISBN 978-0-8176-4537-3  
PM – Progress in Mathematics, Vol. 261

BIRKHAUSER



**Ma, X.**, Ecole Polytechnique, Paris, France / **Marinescu, G.**, University of Köln, Germany

## Holomorphic Morse Inequalities and Bergman Kernels

This book gives for the first time a self-contained and unified approach to holomorphic Morse inequalities and the asymptotic expansion of the Bergman kernel on manifolds by using the heat kernel, and presents also various

applications. The main analytic tool is the analytic localization technique in local index theory developed by Bismut-Lebeau. The book includes the most recent results in the field and therefore opens perspectives on several active areas of research in complex, Kähler and symplectic geometry. A large number of applications are included.

2007. Approx. 440 p.  
Hardcover  
ISBN 978-3-7643-8096-0  
PM – Progress in Mathematics, Vol. 254

## LMS AND IMA DISCUSSIONS

### Comments sought

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

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

## EPSRC 2007/2008

### Postdoctoral Fellowships

The Physics, Information and Communications Technologies (ICT), Mathematical Sciences and Life Sciences Interface (LSI) Programmes are offering Postdoctoral Fellowships to enable the most talented new researchers to establish an independent research career, shortly or immediately after completing a PhD. The awards are for a period of up to three years and cover the salary costs of the Fellow, travel and subsistence and equipment.

**Postdoctoral Fellowships in Theoretical Physics** Up to six Fellowships will be awarded to candidates whose research is within the remit of the EPSRC Physics programme. This encompasses the areas of magnetism, superconductivity, quantum fluids, plasmas, atomic, molecular and optical physics, surface and interfaces, soft condensed matter physics and generic theoretical/modelling studies. For further information please contact Dr Steve Milsom ([Steve.Milsom@epsrc.ac.uk](mailto:Steve.Milsom@epsrc.ac.uk); tel: 01793 444 319).

**Postdoctoral Fellowships in Theoretical Computer Science** Funding of £1.3 million will be invested by the ICT programme in the 2007/2008 call for Fellowships. Applications are welcomed from talented researchers working in the broad area of Theoretical Computer Science. For further information or questions relating to eligibility, please contact Dr Claire Hinchliffe. ([Claire.Hinchliffe@epsrc.ac.uk](mailto:Claire.Hinchliffe@epsrc.ac.uk); tel: 01793 444 541).

**Postdoctoral Fellowships in Mathematical Sciences** At least seven Fellowships will be awarded to candidates who can demonstrate excellence and originality in research within the remit of the Mathematical Sciences. The remit of the Mathematical Sciences Programme encompasses all areas of novel mathematics, statistics and operational research. For further information please contact Dr Katharine Bowes ([Katharine.Bowes@epsrc.ac.uk](mailto:Katharine.Bowes@epsrc.ac.uk); tel: 01793 444 162).

**Overseas Postdoctoral Fellowships at the Life Sciences Interface** The LSI Programme offers up to 12 Fellowships to enable talented new researchers with a PhD in a physical science (Chemistry, Physics, Mathematical Sciences, Materials Science, Information and Communication Technology), or any engineering discipline, to develop an independent career working at the interface with the life sciences. Both the Medical Research Council and Biotechnology and Biological Sciences Research Council also offer postdoctoral fellowships and applications deemed to be mainly or wholly within their remit will not be considered under this call. Some aspects of Medical Engineering also fall outside the scope of this call. It is mandatory that fellows spend between 6 and 18 months working at one or more leading laboratories outside the UK during their fellowship. For further information please contact Dr Stephen Elsby ([Stephen.Elsby@epsrc.ac.uk](mailto:Stephen.Elsby@epsrc.ac.uk); tel: 01793 444 066).

Closing date for all the above applications is **4.00 pm, Tuesday 2 October 2007**. For further details see [www.epsrc.ac.uk](http://www.epsrc.ac.uk).

**Senior Media Fellowships** are intended to enable leading academic researchers to devote time to working more proactively with the broadcast and written media, building a higher media profile for the engineering and physical sciences. Fellows would be expected to act as high-profile champions using national and regional media opportunities to bring the excitement and relevance of research to society. The awards are part-time and are for a period of up to three years.

Senior Media Fellowship applications for the 2008 call are particularly welcome and encouraged from ICT researchers and those with an entrepreneurial track record. Other eligible researchers may, of course, still apply. Applicants are strongly advised to discuss eligibility and applications with EPSRC prior to submission. Closing date: **Wednesday 7 November 2007**.

**Career Acceleration Fellowships** provide up to five years funding to talented researchers at an early stage of their career. They provide an opportunity to concentrate on research for the period of the award, as well as supporting all the costs of the associated research for the full duration of the fellowship. The expectation is that fellows will have established an independent career of international standing by the end of the award. Closing date: **Wednesday 24 October 2007**.

**Leadership Fellowships** provide up to five years funding to talented early or mid-career researchers with the most potential to develop into the UK's international research leaders of tomorrow. They provide an opportunity to concentrate on research for the period of the award, as well as supporting all the costs of the associated research for the full

duration of the fellowship. The expectation is that fellows will have established themselves as leading researchers of international standing in their area by the end of the award, as well as demonstrating leadership within their institution and research community.

It is intended to award up to 50 Fellowships this year across the Career Acceleration Fellowships and Leadership Fellowships schemes. The actual numbers of each type of fellowship awarded will depend on the quality of the proposals received and the level of resources requested. Strong competition is anticipated for these fellowships. Closing date: **Tuesday 9 October 2007**.

### Joint EPSRC and POST Postgraduate Initiative 2008

A three month secondment opportunity to the Parliamentary Office of Science and Technology (POST) open to EPSRC-funded PhD students.

Parliament passes laws, scrutinises Government and acts as a forum for debate on issues of concern. Science based issues permeate all these areas of work. Most MPs and Peers do not have a background in science or technology and look to others for specialist advice and information. POST is an office of the two Houses of Parliament (Commons and Lords), charged with providing balanced and independent analyses of science and technology based issues of relevance to Parliament.

During their time at Parliament, EPSRC/POST Fellows will work on a policy topic grounded in science and technology. Examples of previous years' topics include 'the 24 hour society' and 'internet governance'. Following the placement the fellow will be invited to report back to EPSRC on the scheme.

All EPSRC-funded postgraduate students registered for a PhD, who will be in their 2nd or 3rd year of full-time study in March 2008, are eligible. Deadline for applications: **5 October 2007**.





ÉCOLE POLYTECHNIQUE  
FÉDÉRALE DE LAUSANNE

## Faculty Positions in Mathematical Sciences at Ecole Polytechnique Fédérale de Lausanne (EPFL)

Over the next few years EPFL will make faculty appointments of exceptional individuals across the range of mathematics. We are currently seeking candidates in *mathematical analysis and its applications*, and in *numerical analysis and scientific computing*. Preference will be given for appointments at the assistant professor level (tenure track).

Successful candidates will establish and lead a vigorous, independent research program, interact with existing projects and be committed to excellence in teaching at both the undergraduate and graduate levels. Significant start-up resources and research infrastructure will be available.

Applications including curriculum vitae, publication list, concise state-

ment of research and teaching interests as well as the names and addresses (including email) of at least five references should be submitted in PDF format via the website <http://sb.epfl.ch/mathsearch> by **November 30, 2007**.

For additional information, please contact **Professor Alfio Quarteroni** ([alfio.quarteroni@epfl.ch](mailto:alfio.quarteroni@epfl.ch)) or consult the following websites:  
<http://www.epfl.ch>,  
<http://sb.epfl.ch/en> and  
<http://sma.epfl.ch/>.

EPFL is committed to balance genders within its faculty, and most strongly encourages qualified women to apply.

## IMU NEWS

**Associate Membership** The IMU has been striving to increase the participation of mathematical communities and mathematicians from around the world. Currently 68 countries are members of the IMU (out of about 190 member states of the United Nations). There are many countries, not yet IMU members, with substantial mathematical activities, whose participation in the IMU would be mutually beneficial. Others have written in previous issues of this Newsletter about IMU programs to strengthen mathematics and mathematics education in the developing world.

In order to encourage more developing countries to become IMU members, the IMU General Assembly, meeting in Santiago de Compostela in August 2006, voted to establish a new category of membership, that of Associate Member. An organization of mathematicians in a developing country that has not been an IMU member may apply for Associate Membership for a period of up to eight years without paying dues. An Associate Member country may participate in many IMU activities, including sending a delegate to the General Assembly. More importantly, mathematicians from an Associate Member country will have the opportunity to interact with other mathematicians around the world and increase the visibility of their country in the mathematical community.

**Committee on Quantitative Assessment of Research** The International Council of Industrial and Applied Mathematics (ICIAM), the Institute of Mathematics and Statistics (IMS), and the International Mathematical Union (IMU) have formed a Committee of *Quantitative Assessment of Research* that will investigate various aspects of the quantitative assessment of research in mathematics. The Committee will, in particular, look into impact factors and similar ways to measure research output.

The Committee consists of: Robert Adler (Haifa, Israel), appointed by IMS; Peter Taylor (Melbourne, Australia), appointed by ICIAM; John Ewing (Providence, USA), appointed by IMU. The Committee is expected to create a summary of its findings to be endorsed by the Executive Committees of ICIAM, IMS, and IMU and to be published afterwards.

ICIAM, IMS, and IMU have formulated an aspirational charge to help set direction rather than prescribe the final outcome of the committee's work; see the IMU website [www.mathunion.org](http://www.mathunion.org).

**The Shaw Prize** in Mathematical Sciences has been awarded on 12 June 2007. The Shaw Prize goes in equal shares to Professor Robert Langlands (Institute for Advanced Study, Princeton) and Professor Richard Taylor (Harvard University) for initiating and developing a grand unifying vision of mathematics that connects prime numbers with symmetry. More details on the website [www.shawprize.org](http://www.shawprize.org).

**ICMI Awards** The International Commission on Mathematical Instruction (ICMI) has created two awards in mathematics education research: the Hans Freudenthal Award, for a major programme of research on mathematics education, and the Felix Klein Award, for lifelong achievement in mathematics education research.

An ICMI Awards Committee has been appointed under Professor Mogens Niss (Denmark) and the Committee welcomes suggestions coming from the mathematics education community. Nominations must be accompanied by summaries presenting the persons nominated and the reasons for the nomination as well as the names and coordinates of two or three persons whom the committee may contact for further information. All proposals must be sent by e-mail to Mogens Niss ([mn@ruc.dk](mailto:mn@ruc.dk)) no later than by **15 November 2007**.

The above items are taken from the 24th issue of the IMU electronic newsletter IMU Net (see [www.mathunion.org/Publications/Newsletter](http://www.mathunion.org/Publications/Newsletter)).



## A DISAPPEARING NUMBER

A play *A Disappearing Number* about Ramanujan and Hardy will be performed at the Barbican from 5 September to 6 October. Further information is available at: [www.barbican.org.uk](http://www.barbican.org.uk).

## INDUSTRIAL MATHEMATICS INTERSHIPS LAUNCH

The Industrial Mathematics Knowledge Transfer Network (KTN) is delighted to introduce an exciting new initiative connecting business with the mathematical skills base in the UK's universities: Industrial Mathematics Internships.

Industrial Mathematics Internships involve a doctoral research student in a university department taking time out from their existing research to work within a company. Industrial Mathematics Internships are a new opportunity with a threefold advantage: for companies, university departments and the Interns themselves.

As an industrialist, you will explore new horizons or improve existing operations by bringing mathematical expertise and cutting-edge techniques into your company. As a university faculty member, you will use Internships as a seed for growing new industrial collaborations and relationships.

As an Intern, you will use your expertise to address industrial challenges, and gain first-hand experience of the business environment.

We believe that Industrial Mathematics Internships will develop into a major engine for innovation. A pilot phase of the initiative will run between September 2007 and August 2008, assisted by the support of the Engineering and Physical Sciences Research Council (EPSRC). Each Internship will last between 3 and 6 months and will be supported by one of the KTN's Technology

Translators, who will assist in establishing the projects, building the relationships and exploiting follow-on opportunities. Please find further details on Industrial Mathematics Internships on the KTN website at [www.industrialmath.net/content/internships.html](http://www.industrialmath.net/content/internships.html).

Industrial Mathematics Internships will be launched at the Institute of Engineering and Technology (IET), Savoy Place, London, on the evening of 18 September 2007. The launch will be attended by industrialists, academics, and representatives from government and the public sector. If you wish to join us for the launch of this exciting initiative, please register your intention by emailing Gillian Hoyle ([gillian.hoyle@smithinst.co.uk](mailto:gillian.hoyle@smithinst.co.uk)) at the Smith Institute.

## MATHEMATICAL THINKING

An interdisciplinary workshop will be held from 21–22 November at the University of Nottingham. The aim is to bring together educators, mathematicians, philosophers and psychologists who are interested in understanding mathematical thinking better. The main goal is to share the findings and ideas from our various disciplines, and to identify whether there are areas where we would benefit from an interdisciplinary approach. Keynote speakers are:

- Alexandre Borovik (School of Mathematics, University of Manchester)
- Peter Bryant (Department of Psychology, Oxford Brookes University)
- Marcus Giaquinto (Department of Philosophy & Institute of Cognitive Neuroscience, University College London)
- Terezinha Nunes (Department of Educational Studies, University of Oxford)
- David Tall (Institute of Education, University of Warwick)

For full details of how to register and opportunities for participation visit: [www.lsri.nottingham.ac.uk/mtw](http://www.lsri.nottingham.ac.uk/mtw).

## TUTORIAL WORKSHOP ON MATHEMATICAL FOUNDATIONS FOR THE INTERNET

**Monday 17 September 2007**  
**The London Mathematical Society**

This event forms part of an LMS initiative of activities at the interface between Mathematics and Computer Science. The event will showcase a range of mathematical topics that are helping to build our understanding of how the Internet behaves and how the protocols that it uses can be designed to perform better. The LMS especially welcomes participation by research students from both the Computer Science and Mathematics communities.

### SPEAKERS (timings to be confirmed)

**Dr Ayalvadi Ganesh** (Microsoft Research, Cambridge)  
*Random Graphs and Computer Networks*

**Professor Doug Leith** (Hamilton Institute, National University of Ireland Maynooth)  
*Positive Matrices and the Internet: TCP Dynamics, Fairness and Efficiency*

**Professor Michel Mandjes** (Korteweg-de Vries Institute, University of Amsterdam)  
*Large Deviations for Gaussian Queues*

**Dr Damon Wischik** (Computer Science, University College London)  
*Queueing in Switched Networks*

Full abstracts can be found at:  
[www.lms.ac.uk/activities/comp\\_sci\\_com/cs\\_day07.html](http://www.lms.ac.uk/activities/comp_sci_com/cs_day07.html).

**REGISTRATION:** required with limited availability; please contact Isabelle Robinson ([isabelle.robinson@lms.ac.uk](mailto:isabelle.robinson@lms.ac.uk)) to register to attend

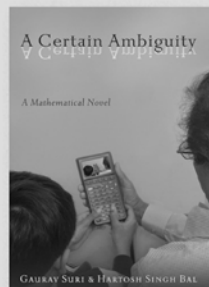
**COST:** free subject to registration

**TRAVEL GRANTS:** limited funds are available to help with the travel costs of students attending the event; contact Isabelle Robinson (details above) for information

**ORGANISERS:** Dr Richard Gibbens (Computer Laboratory, Cambridge University)  
Dr Peter Key (Microsoft Research, Cambridge)

**LOCATION:** The London Mathematical Society  
De Morgan House, 57-58 Russell Square  
London WC1B 4HS

# Do the Math



## A Certain Ambiguity

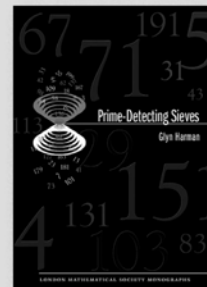
A Mathematical Novel

Gaurav Suri & Hartosh Singh Bal

"A *Certain Ambiguity* is a veritable history of mathematics disguised as a novel. Starting with the Pythagorean theorem, it moves through number theory and geometry to Cantor's alephs, non-Euclidean geometry, Gödel, and even relativity."

—Martin Gardner

Cloth \$27.95 £16.95 978-0-691-12709-5



## Prime-Detecting Sieves

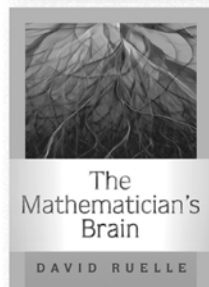
Glyn Harman

*Prime-Detecting Sieves* breaks new ground by bringing together several different types of problems that have been tackled with modern sieve methods and by discussing the ideas common to each, in particular the use of Type I and Type II information.

London Mathematical Society Monographs

Martin Bridson, Terry Lyons & Peter Sarnak, series editors

Cloth \$65.00 £38.95 978-0-691-12437-7

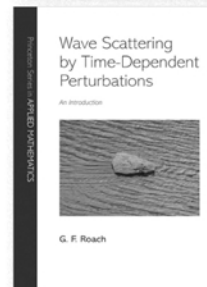


## The Mathematician's Brain

David Ruelle

In this thought-provoking and entertaining book, David Ruelle, the well-known mathematical physicist who helped create chaos theory, gives us a rare insider's account of the celebrated mathematicians he has known—their quirks, oddities, personal tragedies, bad behavior, descents into madness, tragic ends, and the sublime, inexpressible beauty of their most breathtaking mathematical discoveries.

Cloth \$22.95 £13.50 978-0-691-12982-2



## Wave Scattering by Time-Dependent Perturbations

An Introduction

G. F. Roach

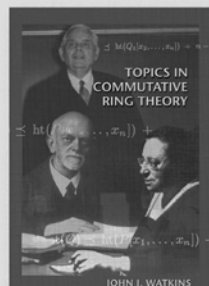
"*Wave Scattering by Time-Dependent Perturbations* is a significant contribution to the mathematical literature—there are no similar books."

—Paul Martin, executive editor of *The Quarterly Journal of Mechanics and Applied Mathematics*

Princeton Series in Applied Mathematics

Ingrid Daubechies, Weinan E, Jan Karel Lenstra & Endre Süli, series editors

Cloth \$65.00 £38.95 978-0-691-11340-1 Due October



## Topics in Commutative Ring Theory

John J. Watkins

"A very elementary introduction to commutative ring theory, suitable for undergraduates with little background. It is written with great care, in a conversational and engaging style that I think will appeal to students."

—Karen Smith, University of Michigan

Cloth \$55.00 £32.95 978-0-691-12748-4



## Benjamin Franklin's Numbers

An Unsung Mathematical Odyssey

Paul C. Pasles

"This is the first book to comprehensively treat Franklin's mathematical work. . . . There is no comparable book on the mathematics of Benjamin Franklin."

—Victor J. Katz, University of the District of Columbia

Cloth \$26.95 £15.95 978-0-691-12956-3 Due December

## NUMERICAL ANALYSIS

The conference on *Numerical Analysis: Multiscale Methods, Adaptivity and Complexity* will be held at the Bath Institute for Complex Systems, University of Bath from 4–7 September. The themes of this conference will be: Numerical analysis for multiscale problems, Stochastic and high-dimensional problems, Adaptive methods, Inverse problems and applications, Numerical methods for wave propagation problems. Invited speakers include:

- H. Ammari (Ecole Polytechnique, Paris)
- D. Bird (Bath)
- M. Burger (Münster)
- S.N. Chandler-Wilde (Reading)
- M. Cullen (UK Met Office)
- W. Dahmen (Aachen)
- C.M. Elliott (Sussex)
- T.-Y. Hou (Caltech)
- W. Huang (Kansas)
- P.K. Jimack (Leeds)
- I.G. Kevrekidis (Princeton)
- M. Kirkilionis (Warwick)
- C. Mitchell (Bath)
- R. Potthast (Reading)
- C. Reisinger (Oxford)
- C. Schwab (ETH, Zürich)
- V.P. Smyshlyaev (Bath)
- I.H. Sloan (New South Wales)
- E. Suli (Oxford)
- R. Tempone (Florida State)

As well as the invited talks the conference will feature a limited number of contributed talks. The conference will not have any parallel sessions. The registration fee is set at £30 plus the cost of accommodation and meals during the meeting. For further information visit the website [www.bath.ac.uk/mathsci/BICS/nammac/](http://www.bath.ac.uk/mathsci/BICS/nammac/). For scientific enquiries contact I.G. Graham ([I.G.Graham@bath.ac.uk](mailto:I.G.Graham@bath.ac.uk)) or R. Scheichl ([R.Scheichl@bath.ac.uk](mailto:R.Scheichl@bath.ac.uk)), and for administrative enquiries contact Mrs Ann Linfield ([bics@maths.bath.ac.uk](mailto:bics@maths.bath.ac.uk)). The meeting is supported by an LMS conference grant.

## MATHEMATICS AT THE BRITISH ASSOCIATION FESTIVAL OF SCIENCE 2007

The BA Festival of Science is the largest such event in Europe and celebrates science, technology engineering and mathematics and their impact on society. This year's BA Festival is being held in York from 9–15 September and will see sessions being held at venues around the City and the university. The Mathematics Section has organised three events:

- 11 September, 5:30pm–8.00pm *Microworld Adventures: A Symmetry-Approach to Viruses* (lecture by the University of York's Dr Reidun Twarock followed by a reception sponsored by the *more maths grads* project)
- 12 September, 6.00pm–8.00pm *How Mathematics Changed my Life!* (various speakers on how mathematics is applied in the real world and careers in mathematics)
- 13 September, 2.00pm–4.00pm *Leonhard Euler: the Legacy!* (celebration of the 300th anniversary of Euler's birth, introduced by Euler himself with help from his friend Professor Robin Wilson of the Open University, plus Professor Keith Moffat of the University of Cambridge and Professor Chris Budd of the University of Bath)

In addition, on Friday 14 September, Professor Chris Budd is leading a session *Eat, drink and be merry with mathematics* as part of the Young People's programme.

## INDUCTION COURSE

An induction course for Lecturers New to Teaching Mathematics & Statistics in UK HE will be held on Thursday 13 to Friday 14 September at the University of Birmingham. This induction course is aimed at people who have started teaching mathematics in UK higher education institutions within the last three years, whether they are new graduates

or coming from industry or from outside the UK. In the past, attendance has been recognised as contributing towards some introductory institutional programmes in learning and teaching for new staff (certificated or otherwise and depending on institution).

The course will start with lunch and an afternoon session on 13 September and finish at lunchtime on 14 September. Topics will include:

- Teaching and supporting learning
- Design and planning of learning activities
- Assessment and feedback
- Systems to support learning
- The computer environment
- Sharing experience

The course will take place in the School of Mathematics in the University of Birmingham with accommodation within easy walking distance. The full residential rate is £90 – including accommodation, evening meal (13th) and lunch on both days. For further details please see: <http://mathstore.ac.uk/workshops/induction2007/index.shtml> or contact: [info@mathstore.ac.uk](mailto:info@mathstore.ac.uk).

## SCOTTISH COMPUTATIONAL MATHEMATICS SYMPOSIUM

The 16th Scottish Computational Mathematics Symposium (SCMS) will be held on Tuesday 11 September at the University of Strathclyde, Glasgow. The object of the SCMS is to bring together mathematicians and others who develop, analyse and use computer algorithms to solve mathematical problems that arise in the modelling of practical problems. Participants will hear keynote lectures on various aspects of computational mathematics including stochastic PDEs, the use of scattered data techniques, the computation of hypersonic and micro-scale gas flows, and adaptive finite element methods. The meeting will be structured such that attendees will have time between talks and during coffee breaks to discuss the topics with the speakers

and other participants. The speakers are a mixture of established and potential future leaders of numerical analysis and computational mathematics, and there are significant overlaps in the themes of the programme with applied analysis and PDEs. The invited speakers are:

- Mike Baines (Reading)
- Gabriel Barrenechea (Strathclyde)
- Catherine Powell (Manchester)
- Jason Reese (Strathclyde)
- Holger Wendland (Sussex)

Anyone interested is welcome. The meeting is supported by the London Mathematical Society, and funding is available for travel for UK-based PhD students (apply as soon as possible please). Registration, student funding and other details can found at [www.ma.hw.ac.uk/scms](http://www.ma.hw.ac.uk/scms) or by contacting John Mackenzie ([jam@maths.strath.ac.uk](mailto:jam@maths.strath.ac.uk)). The organisers are John Mackenzie and Dugald Duncan.

## TECHNICAL PUBLISHING IN NEW AND OLD MEDIA

### From TeX notation to MathML

A meeting on *Technical publishing in new and old media – from TeX notation to MathML* will be held on Monday 22 October from 10.30am to 5pm at the Open University. The speakers are:

- Kaveh Barzargan of River Valley Technologies
- Tim Lowe of the Mathematics Online Project at The Open University
- Jonathan Fine of MathTran and the Open University
- Mike Pearce of the Millennium Mathematics Project
- a speaker from the publishers of *Geometry and Topology*.

If you wish to attend (registration is required) email [J.Fine@open.ac.uk](mailto:J.Fine@open.ac.uk) or visit <http://uk.tug.org>. The one-day meeting is organised by the UK TeX Users Group.



## FIFTH EUROPEAN CONGRESS OF MATHEMATICS



The *Fifth European Congress of Mathematics* (5ECM) will be organized in Amsterdam, from 14–18 July, 2008, under the auspices of the European Mathematical Society. This congress is the next in a series of successful four-yearly European congresses that cover the whole range of the mathematical sciences, from pure to applied. The series started in Paris in 1992, followed by meetings in Budapest (1996), Barcelona (2000) and Stockholm (2004). The ECM congresses alternate with the IMU international congresses, organized every (2 mod 4) year.

Next year's ECM will be organized under the special patronage of the Koninklijk Wiskundig Genootschap (Royal Dutch Mathematical Society, KWG), and will include the yearly meeting of the members of KWG. The 5ECM Local Organizing Committee consists of André Ran (Free University Amsterdam, chairman), Herman te Riele (CWI Amsterdam, secretary), and Jan Wiegerinck (University of Amsterdam, treasurer).

An outstanding Scientific Committee with representatives from all over Europe, chaired by Lex Schrijver (CWI and University of Amsterdam), has composed an interesting scientific program consisting of ten Plenary lectures, three (also plenary) Science lectures, about thirty (parallel) invited lectures, and twenty-one (parallel) Minisymposia. In addition, ten Prize lectures will be presented by outstanding young European mathematicians, selected by a Prize Committee chaired by Rob Tijdeman (Leiden University).

The ten Plenary lectures will be presented by

- Luigi Ambrosio (Scuola Normale Superiore di Pisa)
- Christine Bernardi (Université Paris VI)
- Jean Bourgain (IAS Princeton)
- Jean-François Le Gall (ENS & Paris VI)
- François Loeser (ENS Paris)

- László Lovász (Eötvös Loránd University, Budapest)
- Matilde Marcolli (Max Planck Institut Bonn)
- Felix Otto (Universität Bonn)
- Nicolai Reshetikhin (UC, Berkeley)
- Richard Taylor (Harvard University)

and the three Science lectures by

- Ignacio Cirac (Max-Planck-Institut für Quantenoptik, Garching, Germany) *Quantum Information Theory*
- Tim Palmer (ECMWF Reading, UK) *Climate Change*
- Jonathan Sherratt (Heriot-Watt University, Edinburgh, UK) *Mathematical Biology*

The topics and the organizers of the Minisymposia are:

- Advances in Variational Evolution (Alexander Mielke, Ulisse Stefanelli)
- Algebra in Optimization (Jan Draisma, Monique Laurent)
- Applications of Noncommutative Geometry (Gunter Cornelissen, Klaas Landsman)
- Applied Algebraic Topology (Michael Farber)
- Combinatorics of Hard Problems (Josep Diaz, Oriol Serra, Jaroslav Nesetril)
- Coupled Cell Networks (Peter Ashwin, Ana Dias, Jeroen Lamb)
- Discrete Structures in Geometry and Topology (Dmitry Feichtner-Kozlov)
- Galois Theory and Explicit Methods (Bart de Smit)
- Global Attractors in Hyperbolic Hamiltonian Systems (Andrew Comech, Alexander Komech)
- Graphs and Matroids (Bert Gerards, Hein van der Holst, Rudi Pendavingh)
- Hypoellipticity, Analysis on Groups and Functional Inequalities (W. Hebisch, B. Zegarlinski)
- Mathematical Challenges in Cellular Systems (Frank Bruggeman, Mark Peletier)
- Mathematical Logic (Peter Koepke, Benedikt Löwe, Jaap van Oosten)

- Mathematical Finance (Hans Schumacher, Peter Spreij)
- Mathematics of Cryptology (Ronald Cramer)
- Representation Theoretical Methods and Quantization (Stefaan Caenepeel, Jürgen Fuchs, Alexander Stolin, Christoph Schweigert, Freddy van Oystaeyen)
- Rough Path Theory (Peter K. Friz)
- Singular Structures in Variational PDEs (Matthias Roeger, Mark Peletier)
- Spectral Problems and Hilbert Spaces of Entire Functions (Joaquim Bruna, Hakan Hedenmalm, Kristian Seip, Mikhail Sodin)
- Spectral Theory (E.B. Davies, T. Weidl, F. Klopp, T. Hoffmann-Ostenhof)
- Weak Approximations of Stochastic Differential Equations (Dan Crisan)

Special activities, organized by the KWG, are the Brouwer medal ceremony (an event organized every three years in memory of the Dutch mathematician L.E.J. Brouwer, consisting of a *laudatio*, a lecture and a medal presentation, followed by a reception), a historical lecture on Brouwer's life and work (by Dirk van Dalen), and the so-called Beeger lecture (an event organized every two years in memory of the Dutch high-school teacher and mathematician N.G.W.H. Beeger, with a talk on algorithmic and/or computational number theory). The names of the Brouwer and Beeger lecturers will be announced later.

For more information on the conference, such as grants, up-to-date information on the program, and for registration, please visit our website at [www.5ecm.nl](http://www.5ecm.nl).

The organizers are proud that the EMS has selected Amsterdam to be the host city for its fifth congress, and we look forward to meeting you all next year in Amsterdam. Do not miss this opportunity to learn about the latest developments in mathematics, to meet old friends, and make new acquaintances, while enjoying a charming city with many 'do-not-miss-this' sights!

The 5ECM Local Organizing Committee

## EUROMECH FLUID MECHANICS

The 7th EUROMECH Fluid Mechanics Conference will be held at the University of Manchester, organised by the School of Mathematics/Manchester Institute of Mathematical Sciences, University of Manchester, 14–18 September 2008.

The conference aims to provide an international forum for exchange of information of all aspects of fluid mechanics, including instability and transition, turbulence, multiphase and non-Newtonian flows, bio-fluid mechanics, reacting and compressible flows, numerical and experimental methods, as well as applications. A number of prominent scientists will give keynote lectures in their respective fields of expertise:

- A. Dowling (UK) *Aeroacoustics*
- J. Eggers (UK) *The role of singularities in hydrodynamics*
- E. Guazzelli (France) *Particulate flows*
- D. Henningson (Sweden) *Flow control applied to transitional flows*
- P. Hosoi (USA) *Low Reynolds number locomotion*
- A. Thess (Germany) *Electromagnetic flow measurement*
- R. Verzicco (Italy) *Numerical simulations of high Rayleigh number thermal convection*

Furthermore, four mini-symposia are scheduled to provide training to early stage researchers in the following topics: Subcritical flow instability, Internal bio-fluids, Granular flows and Nature-inspired fluid mechanics.

Abstract submission deadline: 14 February 2008. For enquiries (and to be added to the mailing list) contact Peter Duck (chairman) or Richard Hewitt (secretary) at: [efmc@ma.man.ac.uk](mailto:efmc@ma.man.ac.uk). For further information visit [www.mims.manchester.ac.uk/EFMC](http://www.mims.manchester.ac.uk/EFMC).

## GROUPS AND SYMMETRIES

A conference in celebration of Rob Curtis' 60th birthday will be held at the University of Birmingham from 20–22 September. The speakers will be:

- John Bray (Queen Mary)
- Arjeh Cohen (Eindhoven)
- Paul Flavell (Birmingham)
- Sasha Ivanov (Imperial)
- Wilhelm Plesken (Aachen)
- Johannes Siemons (UEA)
- Chiara Tamburini (Brescia)
- Richard Weiss (Tufts)
- Rob Wilson (Queen Mary)
- Francois Zara (Amiens)

The conference is supported by the LMS and there are funds available to support participation of UK-based research students. Further information can be found on the conference web page at <http://web.mat.bham.ac.uk/S.M.Goodwin/curtisconference>. Contact Rebecca Waldecker ([R.Waldecker@bham.ac.uk](mailto:R.Waldecker@bham.ac.uk)) if you would like to attend. The organisers are: Simon Goodwin, Corneliu Hoffman, Chris Parker and Rebecca Waldecker.

## APPLICABLE FLUID DYNAMICS

A meeting on the fundamentals and techniques in applicable fluid dynamics will be held at the School of Mathematics, University of Leeds, on 21 September. The meeting is being held to mark the retirement of Professor Derek Ingham. The speakers are:

- T. Pedley, FRS (University of Cambridge)
- F.T. Smith, FRS (University College, London)
- B. Spalding, FRS (Imperial College, London)
- A. Williams (University of Leeds)
- G. Wilks (University of Keele)
- N. Mera (Evolutionary Technologies LLP, London)

For further information contact John Mertin ([amtjhm@maths.leeds.ac.uk](mailto:amtjhm@maths.leeds.ac.uk)). The meeting is supported by an LMS conference grant.

## GRESHAM COLLEGE LECTURES 2007/08

Gresham College, founded by Sir Thomas Gresham in 1597, is an independently funded educational institution based in Barnard's Inn, Holborn, in the centre of London. It provides free public lectures by its eight professors and holds other events. The current Gresham Professor of Geometry is Robin Wilson, who is giving the following lectures:

- *4000 years of geometry*  
3 October 2007, 1 pm and 6 pm
- *4000 years of algebra*  
17 October 2007, 1 pm and 6 pm
- *4000 years of numbers*  
7 November 2007, 1 pm and 6 pm
- *Squaring the circle and other impossibilities*  
16 January 2008, 1 pm and 6 pm
- *A millennium of mathematical puzzles*  
6 February 2008, 1 pm and 6 pm
- *From Hilbert's problems to the future*  
27 February 2008, 1 pm and 6 pm
- *400 years of geometry at Gresham College* (Special Geometry Lecture)  
4 May 2008, 1 pm and 6 pm.

For information see [www.gresham.ac.uk](http://www.gresham.ac.uk).

## CRYPTOGRAPHY AND CODING

The 11th IMA international conference on Cryptography and Coding will take place from 18–20 December at the Royal Agricultural College in Cirencester. The conference concerns the mathematical theory and practice of cryptography and coding theory. The invited speakers are

- Whit Diffie (Sun Microsystems) *tba*
- Jonathan Katz (University of Maryland) *Efficient cryptographic protocols based on the hardness of learning parity with noise*
- Patrick Solé (École Polytech Nice-Sophia) *Galois rings and pseudo-random sequences*

Further information about the conference and registration details can be found at: [www.isg.rhul.ac.uk/~sdg/cirencester.html](http://www.isg.rhul.ac.uk/~sdg/cirencester.html).

## CETL-MSOR CONFERENCE

The *Continuing Excellence in the Teaching & Learning of Maths, Stats & OR* conference 2007 (CETL-MSOR) will take place at the University of Birmingham from Monday 10 – Tuesday 11 September.

The aim of this conference is to promote, explore and disseminate emerging good practice and research findings in Mathematics and Statistics support, teaching, learning and assessment. The conference will appeal to all those teaching Mathematics, Statistics or Numeracy, whether this is to specialist mathematics students or students studying components of mathematics within

their degree programmes (such as bioscience, chemistry, computer science, economics, engineering, nursing, physics, psychology, social work, etc.).

The conference will explore not only the issues at the transition to university, but any issues throughout the entire student learning experience – from foundation year through to post-graduate level. This will be achieved by a combination of keynote speeches, plenary sessions, hands-on demonstrations, workshops, poster sessions and discipline-specific discussion sessions.

Full residential rate (includes all conference fees, B&B, lunches and refreshments throughout the two days and the conference dinner) £129. Non-residential rate on application. For further details please see <http://mathstore.ac.uk/conference2007/index.shtml> or contact: [info@mathstore.ac.uk](mailto:info@mathstore.ac.uk).



The Fields Institute  
invites applications and nominations  
for the position of Director, effective July 1, 2008.

For further information:  
[www.fields.utoronto.ca/](http://www.fields.utoronto.ca/)

Director Search, Fields Institute  
222 College Street, Toronto, Ontario M5T 3J1 Canada

## UK-JAPAN WINTER SCHOOL 2008

The UK-Japan Winter Schools have been held since 1999. Every year the focus is on a special topic. For the next Winter School the topic will be *Algebraic and Symplectic Geometry*. The aim of the School is to bring together Japanese and UK scientists, in particular young researchers and students from mathematics and mathematical physics, in a relaxing and stimulating atmosphere. It will be held 7–11 January 2008 at the Mathematics Research Centre, University of Warwick. For further information please visit the website <http://euclid.ucc.ie/pages/staff/berndt/conferences/UK-Japan08/ws2008home.html>.

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## MATHEMATICS AND ITS APPLICATIONS IN INFORMATION TECHNOLOGY

The Second LUMS international conference on *Mathematics and its Applications in Information Technology* will be held in collaboration with SMS, Lahore at the LUMS campus from 9–12 March 2008. It will be attended by various world leaders in mathematics and by postgraduate students. This conference will provide a forum for researchers and educators from around the world to present their results and exchange ideas and information in the latest developments in all areas of Mathematics. The conference features 45 minute talks by keynote speakers, 30-minute talks by invited speakers and 20-minute talks by paper presenters. Faculty members are encouraged to suggest to their PhD students that the LUMS Conference on Mathematics is an appropriate place to present their research papers.

The conference will cover a broad range of topics in Mathematical research. The topics include, but are not limited to: Applied Mathematics, Pure Mathematics, Industrial

Mathematics, Financial Mathematics, Actuarial Mathematics, Information Technology for Mathematics, Discrete Mathematics. Key note speakers are:

- Aleksander Malnic (Slovenia)
- Ari Laptev (Imperial College, London)
- Bernd Wegner (Germany)
- Dato Rosihan M. Ali (USM, Malaysia)
- Dorin Popescu (University of Bucharest, Romania)
- Edy Tri Baskoro (Institute Teknologi Bandung, Indonesia)
- Esmail Babolain (Teacher Training University, Iran)
- Genghua Fan (Fuzhou University, China)
- Jin Ho Kwak (Pohang U. of Sci. & Tech, Republic of Korea)
- Juergen Herzog (University of Essen, Germany)
- Michel Marie Deza (Ecole Normale Supérieure, France)
- Peter Wild (University of London, UK)
- Ulrich Knauer (Carl von Ossietzky University, Germany)

Invited speakers include: Carlos Martins da Fonseca (University of Coimbra, Portugal), Christian Mauduit (Université de la Méditerranée, France), Eraldo Giuli (University of L'Aquila, Italy), Faiz Ahmad (King Abdulaziz U., Saudi Arabia), Jafar Baizar (Guilan University, Rasht, Iran), Matt Davison (University of Western Ontario, Canada), M. Akram Javaid (U. of Eng. and Tech, Taxila, Pakistan), Ng Wee Leng (NTU, Singapore), Sang-Gu-Lee (Sungkyunkwan University, Korea), Sheng Bau (China), S.M. Aqil Burney (U. of Karachi, Pakistan), Sohaib A. Khan (LUMS, Pakistan), Tasawar Hayat (Quaid-i-Azam U., Islamabad, Pakistan).

For further details contact Faqir M. Bhatti, Convener, LICM08, Lahore University of Management Sciences, DHA, Cantt Lahore – 54792, Pakistan (tel: +92 -42 5722670 – 79, Ext. 2121 or 2123; email: [fmbhatti@lums.edu.pk](mailto:fmbhatti@lums.edu.pk)) or see <http://web.lums.edu.pk/licm08>.

## LONDON MATHEMATICAL SOCIETY

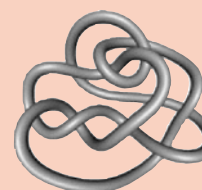
### POPULAR LECTURES 2007

University of Birmingham – Tuesday 18 September

Dr Hinke Osinga

#### *Chaos and Crochet*

'Maths predicts things – so why is the weather forecast often wrong? The intricacies of chaos theory can be explained with a surface that you can make by crochet.'



Dr Stephen Huggett

#### *Knots*

'The mathematical theory of knots is a weird and wonderful world. It is easy to enter, but surprisingly difficult to answer some of its most obvious questions!'

Commences at 6.30 pm, refreshments at 7.30 pm, ends at 9 pm. Admission is free. Enquiries to Dr Simon Goodwin, School of Mathematics, University of Birmingham, Birmingham B15 2TT ([goodwin@maths.bham.ac.uk](mailto:goodwin@maths.bham.ac.uk)).

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.

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## RECORDS OF PROCEEDINGS AT MEETINGS

### ORDINARY MEETING

held on *Friday 22 June 2007* at University College London. About 30 members and visitors were present for all or part of the meeting.

The meeting began at 3.30pm, with the President, Professor J.F. TOLAND, FRS, FRSE, in the Chair. On a recommendation from Council it was agreed to elect Professor A.R. Camina and Professor P.T. Saunders as scrutineers in the forthcoming Council elections.

The President, on Council's behalf, proposed that Professor Ingrid Daubechies of Princeton University and Professor Dusa McDuff, FRS, of SUNY New York be elected to Honorary Membership of the Society. The 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 2007:

<b>De Morgan Medal</b>	Professor Bryan Birch (University of Oxford)
<b>Senior Whitehead Prize</b>	Professor Béla Bollobás (University of Cambridge)
<b>Naylor Prize and Lectureship in Applied Mathematics</b>	Professor Michael Green (University of Cambridge)
<b>Whitehead Prizes</b>	Dr Nikolay Nikolov (University of Oxford and Imperial College London)
	Dr Oliver Riordan (University of Cambridge)
	Dr Ivan Smith (University of Cambridge)
	Dr Catharina Stroppel (University of Glasgow)

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

Two people were elected to Ordinary Membership: M.L. Langer, S.L. Lauritzen; and four were elected to Associate Membership: S.J. Elliott, S.C. Perera, S.E. Rose, D. Szotten.

The President introduced a lecture given by Professor Angus Macintyre on *Current  $p$ -adic model theory and its debt to Paul Cohen*.

After tea, the President then introduced a lecture given by Professor Hugh Woodin on *Current set theory and its debt to Paul Cohen*.

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

### LMS MEETING

Friday 22 June

Both speakers chose their topics from within their own specialities in mathematical logic with the aim of clarifying the great debt that this subject owes to Paul J. Cohen, who died unexpectedly on 23 March 2007. His obituary, written by Professor Macintyre, appeared in the June *Newsletter*. The attendance of about 30 members and visitors was disappointingly small considering the quality of the speakers and, especially in Professor Woodin's case, the effort they had made to get there on time.

Professor Macintyre devoted the first half of his lecture to a beautiful and clear account of the content and context of Cohen's 1969 paper on  $p$ -adic model theory. Although the results contained in it were already known in qualitative form since the work of Ax-Kochen and Ersov in 1964, Professor Macintyre pointed out that it was Cohen's 'hands on', constructive methods that were so innovative. Indeed, the change of perspective, from syntactic logical niceties and the effective axiomatization of theories in strict logical form to the understanding of geometric, analytic and topological properties of definable sets, can be traced back to Cohen's work, and this has remained the emphasis in the model theory of fields to the present day.

In particular, Cohen stressed explicit procedures for isolating roots of polynomials (over both the real and  $p$ -adic fields), and for saying significant things about them in terms of the coefficients, and thereby established the elimination procedure so crucial for the understanding of definable sets. Of course, Tarski achieved this for the real field many years earlier, but such a constructive analysis was missing for the  $p$ -adics until Cohen's paper, and from it flows the constructive elimination procedure for each particular  $p$ -adic field. Whether or not there is such a procedure that is uniform in the prime  $p$

comes later in the story, but in any case one now had sufficiently many tools to solve Artin's problem on the zeros of forms in many variables over  $p$ -adic fields (which had been the motivation for the earlier Ax-Kochen and Ersov work) and for seeing how the first-order theory of each  $p$ -adic field could be obtained from those of the value group and the residue field.

Professor Macintyre then went on to discuss more recent developments, beginning with his own elimination result from 1976. Now for Tarski's theorem (also known as the Tarski-Seidenberg algorithm) one only has to add a predicate for the squares, i.e. the non-negative real numbers, to carry out the elimination procedure. This allows one, for example, to distinguish algebraically the two sides of a planar curve. In a remarkable piece of ' $p$ -adic geometric' intuition, Professor Macintyre observed that for planar curves over the  $p$ -adics, the 'sides' are distinguished by multiplicative residues modulo  $n$ 'th powers (for each  $n > 1$ ) and then showed that Cohen's ideas could be adapted for a language where one just adjoins a predicate for the  $n$ 'th powers (for each  $n > 1$ ). It is this elimination result that has been used and applied in the subject ever since.

The talk concluded with brief look at several such applications, including Denef's proof of Serre's conjecture on the rationality of Poincaré series and more general theorems on the evaluation of  $p$ -adic analytic integrals, where the question of uniformity in the prime  $p$  was also discussed. None of this, Professor Macintyre stressed, would have been possible without the original insights of Paul Cohen.

After a break for tea, Professor Toland introduced Professor Hugh Woodin (Berkeley) who had arrived only just in time for the meeting owing to a 24-hour delay in his flight.

Paul Cohen was awarded the Fields Medal in 1966 for his proof of the independence of

the generalised continuum hypothesis from the generally accepted axioms for set theory (ZFC) and Professor Woodin began his talk by noting that Cohen's technique, known as forcing, had become ubiquitous in set theory over the last 40 years and had completely transcended its original applications. It challenges the possibility of any meaningful conception of the universe of sets and it was Professor Woodin's aim in this talk to present a conjecture – the Omega conjecture – that, he would argue, identifies the mathematical essence of this challenge. At any rate, the issue of the Omega conjecture will have to be resolved if we are to understand the nature of set-theoretical truth, and its resolution will have a profound effect on the mathematical conception of infinity.

The precise statement of the Omega conjecture is highly technical, but Professor Woodin made it accessible to the audience by explaining it in terms of a completeness theorem for a certain logic – Omega logic – whose formulas are geared to express statements of higher order number theories and whose rules incorporate a certain invariance under Cohen's forcing constructions. Now the continuum hypothesis is a statement of third order number theory (one needs to quantify over sets of sets of natural numbers in order to express it) and Professor Woodin first spent some time reviewing the situation for first and second order number theory. In the first order case, where one is only allowed to quantify over natural numbers, it is generally accepted that the Peano Axioms (PA) provide the correct and, at least for most 'natural' mathematical statements, complete axiomatization. The second order case (quantification over both numbers and sets of numbers allowed) is much more problematic, but by accepting Gödel's philosophy that the most natural and uncontroversial way to extend ZFC is by adding stronger and stronger axioms of infinity (and this is now universally accepted by set theorists), an

axiomatization has been found. It is the axiom of projective determinacy (PD) and is formulated using certain games related to the logically definable sets of second order number theory. Professor Woodin gave convincing arguments showing that PD plays the same role for second order number theory as PA does for first order number theory. Further, PD is known to follow from a strong axiom of infinity (precisely, the existence of infinitely many Woodin cardinals).

Unfortunately, the Omega conjecture implies that there is no generalization of PD for third order number theory. However the investigation of the conjecture has revealed strong evidence that there is a notion of truth that is guided by a considerably more rigid principle than mere consistency. In particular, the continuum hypothesis would be settled one way or the other. Whatever the outcome, Professor Woodin concluded, Cohen's method of forcing will play a central role.

Alex Wilkie  
University of Oxford

## REVIEWS

**Crimes and Mathdemeanors** by Leith Hathout, Massachusetts: A K Peters Ltd, pp 196, paperback 2007, £7.55, ISBN 978-1-56881-260-1;

Dr Rosmoynne, a consultant obstetrician, has been found dead in Dr Arden's study after a Sunday afternoon barbecue. Killed with a single shot to the head, his body was discovered lying next to a telephone receiver left dangling from its cord. No one claims to have seen anything suspicious and neither Dr or Mrs Arden nor any of the other four guests seem to have a motive. A classic case of whodunit for any would-be M. Poirot or Miss Marple but with no obvious motive or suspect the local police are baffled. Enter Ravi, a fourteen year old mathematician, who solves the crime instantly based on how many hands were shaken by each person as

the guests left. Intrigued? So you should be.

Crimes and Mathdemeanors is the brainchild of an American high school student, Leith Hathout. Leith has very cleverly put together a selection of fourteen short stories each recounting a different crime or mystery to solve; the first case is described above. The scenarios are all seemingly obscure and difficult to unravel until Ravi reveals the mathematics behind his reasoning and then instantly all becomes clear and obvious. Each chapter contains a brief description of the basic facts of the crime, the analysis containing Ravi's clever mathematical reasoning as to how the case is solved and then the solution which elaborates on this in more detail. Most chapters also include an extension which either consists of a relevant proof in a simple form or another application of the mathematics in question.

This is an excellent book for the able sixth form student studying mathematics. However, the description, of the mathematics involved can be lengthy and more in-depth than required. It will probably appeal more to those students who are well on their way to becoming mathematicians rather than those who might need some persuading.

This book could also be used as an excellent resource for the secondary school mathematics teacher. Either for those odd, end of term, 'fun' lessons or for a novel way of presenting possible applications of aspects of the A-level syllabus.

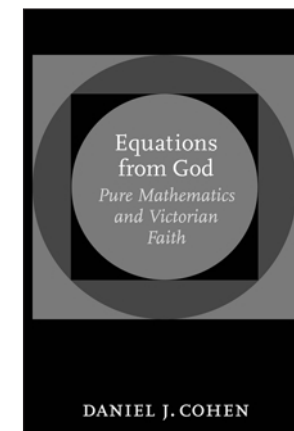
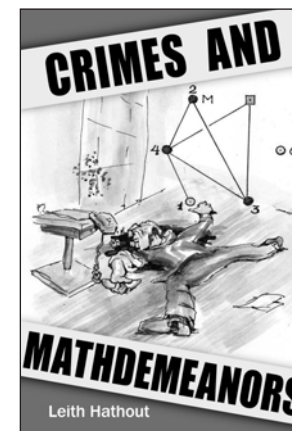
Among the mathematical concepts used to solve the crimes are probability, combinatorics, proof, geometry, co-ordinate geometry, mechanics and integration along with plenty of logic and algebra thrown in for good measure. The crux of the problems will be familiar to any mathematician but the treatment of

them is unique. All in all I would recommend this book to any youngster enjoying studying mathematics at A-level or above, as well as all those involved in maths education.

Noel-Ann Bradshaw  
University of Greenwich

**Equations from God: Pure Mathematics and Victorian Faith**, Daniel J. Cohen, 2007, 256 pp. Johns Hopkins Studies in the History of Mathematics. History and Philosophy of Mathematics, \$50.00, ISBN-13:978-0-8018-8553-2

The two opening chapters of this book describe the well-known way in which the early Victorians in Britain and the United States connected the discoveries of mathematics with the wonders of religion. The discovery of Neptune, for example, elicited raptures about the divine quality of mathematics, the purity of its reasoning and the profundity of its insights. The scientist William Whewell in Cambridge (England) and the mathematician Benjamin Peirce in Cambridge (Mass.) placed mathematics where they did in the high enterprise of education on grounds that overlapped with their theological beliefs. Daniel Cohen therefore investigates the religious roots of Victorian



work on symbolic logic, and proposes that although the standard Whig history of the subject is wrong to proclaim a secularising intent from the start it is nonetheless true that as the Victorian era wore on mathematics and logic were recast as earthly creations.

Two chapters follow, on the contrasting figures of Boole and de Morgan. Cohen documents the religious controversies they were drawn into, Boole in Cork and de Morgan at the (in principle) ecumenical University College London. Boole saw a path from logic to the divine and, as the numerous religious arguments in his *Laws of Thought* of 1854 indicate, hoped for a more tolerant and universal Christianity than he found around him in Cork. De Morgan drifted away from organised religion, became unduly convinced by the fraudulent claims of spiritualists, and wound up advocating a modest philosophy of mathematics that separated mathematics and theology.

The final chapter traces the way later Victorians distanced themselves to varying extents from theology and the practice of religion as they professionalised their subject, excluded cranks and circle-squarers from their midst and imposed upon themselves a self-denying ordinance: no more glib identifications of the truths and methods of mathematics and religion.

It should be clear that the book is about the religious or spiritual lives of Boole and de Morgan in particular, and of some other mathematicians and scientists as well. It is not primarily about their mathematics, and it does not make any claims that their religion influenced their mathematics. It does claim that theology influenced the kinds of claims that were made about mathematics, from its value for society to the nature of its knowledge, and that these claims gradually deflated as the decades passed. However, this deflation is not much analysed, and it is hard to see that Cohen says much more than it was a prudent retreat from controversy. His book

lacks the trenchant force of Joan Richards' belief that mathematics fell behind at Oxford, by comparison with Cambridge, because of the intensity of the theological movement in Oxford.

Cohen's narrative begins to fall apart in the final chapter of the book. The later Victorian period was dominated by Cayley, who said little about his faith, Sylvester, who as a Jew kept away from specifically Christian debates, and Clifford, a polemicist who died young. None of these figures help the author to spell out his thesis about the growing secularisation of mathematics, correct though it is, and important theologians are missing. Some mathematicians one might expect to find are also not here. After a chapter on Benjamin Peirce it is strange to find nothing on his son, the brilliant logician Charles Sanders Peirce. Equally, the absence of scientists begins to imperil the analysis. If we are to have Whewell at the start (no fan of mathematics for its own sake) then we should surely have Lord Kelvin at the end, another utilitarian about mathematics but one with no problems finding the benign hand of the deity in this or that scientific discovery. The book should also be read with the blanket observations that it applies securely only to Britain and America and not to the far more mathematically active domain of Continental Europe, and in particular generalities about mathematics in this book are to be understood as applying only to mathematical or mathematised logic as practised in Britain and America.

But if we do not get a rich and deep story we do get many interesting details, and in particular we get a book sensitive to a much larger piece of the intellectual contexts in which mathematics was done and mathematicians lived than is generally the case in the history of mathematics. The book is part of a series of studies in the history of mathematics produced by Johns Hopkins, the

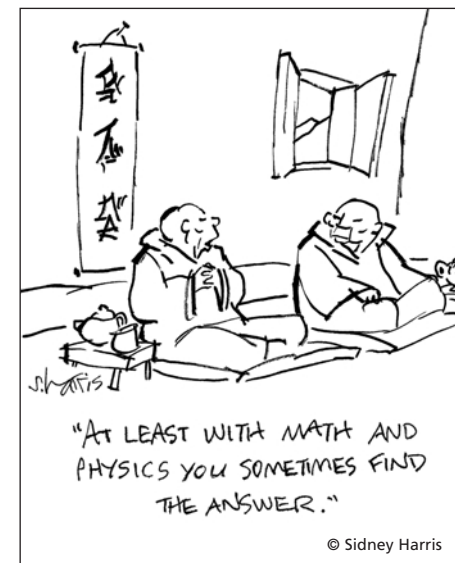
publisher that has previously brought us Crilly's book on Cayley and Parshall's on Sylvester, which, as good biographies must, do provide that context. Cohen's short, readable book is a study in the history of ideas, and can be welcomed as pointing the way to important new directions in the history of mathematics.

Jeremy Gray  
The Open University

#### References

Tony Crilly, *Arthur Cayley: Mathematician Laureate of the Victorian Age*, Johns Hopkins University Press, 2006 (reviewed in April 2007 Newsletter, issue no. 358)

Karen Hunger Parshall, *James Joseph Sylvester: Jewish Mathematician in a Victorian World*, Johns Hopkins University Press, 2006 (reviewed in December 2006 Newsletter, issue no. 354)



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## Crimes and Mathdemeanors

by Leith Hathout

ISBN: 978-1-56881-260-1;  
Paperback; 150 pp.; £9.50

"Leith Hathout, drawing on a great love of mathematics, has with incredible ingenuity embedded fourteen lovely problems within fourteen mystery yarns."

—Martin Gardner

"This is a truly delightful book that should inspire many a high school student ... The more so if they realize that the author is, like them, a high school student! In Leith Hathout's talented writing I detect the next Martin Gardner."

—Keith Devlin, author of *The Math Instinct*



## LONDON MATHEMATICAL SOCIETY

### SPITALFIELDS DAY

in association with the Isaac Newton Institute for Mathematical Sciences programme entitled *Strong Fields, Integrability and Strings*

#### Gauge Theory, String Theory and Unification

Monday 8 October 2007, Isaac Newton Institute, Cambridge

- 13:30–14:30** Professor Nick Evans (University of Southampton)  
*LHC – The greatest experiment on earth and the search for the origin of mass*
- 14:30–15:30** Professor Mikhail Shifman (University of Minnesota)  
*Supersymmetry and how it helps us to understand our world*
- 15:30–16:00** Tea
- 16:00–17:00** Professor Alexander Gorsky (ITEP, Moscow)  
*The different faces of integrability in Gauge theories*
- 17:00–18:00** Professor David Gross (KITP, Santa Barbara)  
*The coming revolutions in fundamental physics*
- 18:00–18:45** Wine and beer reception

The talks are aimed at final year undergraduate/beginning postgraduate students in particle physics or mathematics, and will review prospects for learning more about fundamental physics at the smallest scales, via both collider experiments at LHC, and recent dramatic progress in gauge field theory and string theory which promises to unify our understanding of particle physics and gravity.

Anyone interested is welcome to attend; talks will be aimed at a general mathematical audience. Please let Tracey Andrew at the Institute know by **Friday 28 September** if you intend to come: telephone (01223) 760992; fax: (01223) 330508; email: t.andrew@newton.cam.ac.uk.

There are limited funds available to assist research students to attend, please apply by **Friday 28 September** to Tracey Andrew by email (t.andrew@newton.cam.ac.uk) or post at the Newton Institute, 20 Clarkson Road, Cambridge CB3 0EH. Scientific enquiries may be addressed to Simon Hands (s.hands@swansea.ac.uk).

## 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 2007

- 2-7** Hydrodynamic Stability Theory LMS-EP SRC Short Course, Keele (361)
- 3-7** Current Challenges and Problems in Phylogenetics INI Workshop, Cambridge (357)
- 3-7** The Riemann–Hilbert Problem and Toeplitz Operators ICMS Workshop, Edinburgh (358)
- 3-7** Theory and Applications of the Hyperbolic Metric Workshop, Bristol (360)
- 4-7** Numerical Analysis Conference, Bath (362)
- 6** European Women in Mathematics Meeting, Cambridge (354)
- 6-8** British Logic Colloquium, London (360)
- 7-12** Mathematics Education in a Global Community Conference, North Carolina, USA (352)
- 9-14** Asymptotic Methods in Infinite Group Theory LMS-EP SRC Short Course, Oxford (361)
- 9-15** BA Festival of Science, York (362)
- 10-11** CETL-MSOR Conference, Birmingham (362)
- 10-12** British Topology Meeting, Sheffield (360)
- 13-14** Induction Course, Birmingham (362)
- 11** Scottish Computational Mathematics Symposium, Strathclyde University (362)
- 11-14** Vortex Dynamics from Quantum to Geophysical Scales EUROMECH Colloquium, Exeter (358)
- 13-14** Homotopy Theory and Lie Groups Meeting, Aberdeen (360)
- 16-20** Numerical Analysis and Applied Mathematics, Corfu, Crete (357)

- 17** Mathematical Foundations for the Internet Tutorial Workshop, DMH, London (362)
- 17-21** Solving Polynomial Equations and Structured Matrix Methods for Approximate GCD Computations, Summer School, Oxford (360)
- 17-27** Gauge Fields and Strings INI Workshop, Cambridge (358)
- 18** LMS Popular Lectures, Birmingham (362)
- 18** Industrial Mathematics Internships Programme, London (362)
- 19-21** Dynamics and Stability of Thin Liquid Films and Slender Jets Workshop, Imperial College London (360)
- 20-21** Mathematical Models in Evolution and Ecology Conference, Sussex (359)
- 20-22** Groups and Symmetries Conference, Birmingham (362)
- 21** Fundamentals and Techniques in Applicable Fluid Dynamics, Leeds (362)
- 21-22** Heilbronn Institute Annual Conference, Bristol (361)
- 25-26** PDEs Workshop, Cardiff (361)

### OCTOBER 2007

- 3** 4000 Years of Geometry, Gresham College Lectures, London (362)
- 7-11** Pacific Rim Conference, Hong Kong (353)
- 8** Gauge Theory, String Theory and Unification, LMS Spitalfields Day, INI Cambridge (362)
- 17** 4000 Years of Algebra, Gresham College Lectures, London (362)
- 22** Technical Publishing in New and Old Media, Open University (362)
- 24** LMS Northern Regional Meeting, Sheffield (362)

### NOVEMBER 2007

- 1-5** Recent Advances in Functional and Delay Differential Equations Workshop, Halifax, Canada (361)
- 7** 4000 Years of Numbers, Gresham College Lectures, London (362)

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LMS member 1875-1890



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