

#### No. 386 November 2009

# Society Meetings and Events

#### 2009

Friday 20 November AGM, London [pages 1, 3]

#### 4–6 December

Joint meeting with the Belgian Mathematical Society, Leuven

#### 2010

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Friday 26 February Mary Cartwright Lecture, Durham

#### Friday 2 July

Hardy Lecture London

#### Monday 13 September

Midlands Regional Meeting, Nottingham

# 2009 ELECTIONS TO COUNCIL AND NOMINATING COMMITTEE

The ballot papers for the November elections to Council and Nominating Committee were circulated with the October Newsletter. Nominating Committee has put forward names for each Officer post; in addition members have proposed candidates for two posts: General Secretary and Education Secretary. A total of 15 candidates have been proposed (9 by Nominating Committee, 6 by members) for the 7 vacancies in Members-at-Large of Council. Four names have been proposed (all by Nominating Committee) for 2 vacancies in the membership of the Nominating Committee.

Please note that completed ballot papers must be returned by **Thursday 12 November 2009.** 

Members should have received the following: a pink (A4) ballot paper for the elections to Council; a blue (A5) ballot paper for elections to Nominating Committee; a white (A5) booklet of biographical details of candidates; a white return envelope. If you are missing any of these items please contact Leanne Marshall at DMH (leanne. marshall@lms.ac.uk).

A separate form for suggesting names to the Nominating Committee for potential candidates for the 2010 elections was also included. Members are also able to make direct nominations; details will be given in the April and May *Newsletters* next year.

# ANNUAL GENERAL MEETING

The Annual General Meeting of the Society will be held at 3.00 pm on Friday 20 November 2009 at the Institute of Education, London. The business shall be:

- (i) the adoption of the Annual Report for 2008/09
- (ii) the report of the Treasurer
- (iii) appointment of Auditors
- (iv) elections to Council and Nominating Committee
- (v) presentation of certificates to Prize winners

I hope that as many members as possible will be able to attend.

Peter Cooper Executive Secretary

# RESIGNATION OF THE EXECUTIVE SECRETARY

Council has received with regret notice of the resignation of Peter Cooper as Executive Secretary with effect from 31 December 2009. Council has already begun the process that will lead to the appointment of a new Executive Secretary; further details will appear in due course.

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#### NEWSLETTER

## **EDITORIAL ADVISERS' MEETING**

The triennial meeting of the Editorial Advisers for the LMS *Bulletin, Journal* and *Proceedings* took place at De Morgan House on Friday 25 September 2009. Many members of the Advisory Board attended, some of whom had travelled a considerable distance, together with all the Editors of the three journals.

There was lively discussion on a range of topics, including communication between editors and advisers, policy on the rejection of papers, and the subject coverage of the journals. The meeting discussed the report of the working group on the future structure of the journals and advisory boards. This was a valuable part of the meeting as the Advisory Board provided genuinely constructive criticism of the draft proposal that may lead to a simpler structure for the journals.

There was also a presentation by the consultants, Rightscom, who are advising the Society on upgrading the paper-handling database, which is central to the smooth operation of the journals. There followed a useful discussion on the features of the database that advisers felt were important. The helpful and constructive views from the meeting will be of great value to the Publications Committee in planning future developments of the journals.

> Kenneth Falconer Publications Secretary



Participants at the 2009 LMS Editorial Advisory Board Meeting

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# LONDON MATHEMATICAL SOCIETY ANNUAL GENERAL MEETING

### Friday 20 November 2009

#### Jeffery Hall, Institute of Education, Bedford Way, London WC1

- 3.00–3.15 Annual General Meeting
- 3.15–3.45 Roger Heath-Brown (Oxford) The most important problem in mathematics (?)
- 3.45–4.15 Tea
- **4.15–4.45** Leif Abrahamsson (Uppsala) Support for mathematics in developing countries
- **4.45–5.15 Rosemary Bailey** (QMUL) Teaching mathematics: satnav or map?
- 5.15–5.45 Ken Brown (Glasgow) The Research Excellence Framework and issues arising from it

Followed by a Reception at De Morgan House.

The AGM will include the presentation of certificates to the 2009 LMS prize winners.

There are funds available to contribute in part to the expenses of members of the Society or research students to attend the meeting. Requests for support, and any other queries about the AGM, should be sent to Isabelle Robinson (isabelle.robinson@lms.ac.uk).

### **ANNUAL DINNER**

The 2009 Annual Dinner will be held after the Annual General Meeting at 7.30 pm on Friday 20 November at The Park Hotel, London WC1. The cost for members and their guests is £43 per person. A booking form was enclosed with the October *Newsletter* and should be returned together with payment to Leanne Marshall at the Society's offices by **Monday 9 November**.

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#### NEWSLETTER

### LONDON MATHEMATICAL SOCIETY PRIZES 2010

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In 2010, Council expects to award the De Morgan Medal, Senior Berwick Prize, Fröhlich Prize, and up to four Whitehead Prizes.

Nominations should be made by completing the designated form, which is available to download from the Society's website (www.lms.ac.uk) or can be obtained by contacting the Secretary to the Prizes Committee (email: prizes@lms.ac.uk). Nominations should be received no later than Friday 22 January 2010.

The Prizes Committee is keen to increase the number of nominations it receives, and would like to draw attention to the disproportionately low numbers of women nominated for prizes each year. The prize regulations refer to the concept of 'academic age' – rather than date of birth – in order to take account more fully of broken career patterns. Also, in order to encourage proposals for candidates, nominations need not describe in detail the candidate's work, as detailed references for those shortlisted will be sought; what is important is that the 'Case for Award' section of the nomination form should be completed in approximately 500 words. Council has emphasised that the scope of the Society's Prizes includes all aspects of mathematics, and that this includes applied mathematics, mathematical physics and mathematical aspects of computer science.

Brief descriptions of the criteria for each Prize are given below. Council reserves the right not to make an award of any particular Prize in the event that no candidate of sufficient merit is recommended by the Prizes Committee. Nominators should note that, in each case, current Members of Council or the Prizes Committee may not be considered for the prize, and that no one may be awarded the same prize more than once. A list of

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previous winners appears in the Handbook and on the Society's website. The full regulations for each prize can be obtained from the Society (contact details as above).

The **De Morgan Medal** is the Society's premier award; the only grounds for the award of the Medal are the candidate's contributions to mathematics. The Medal is awarded every third year (in years numbered by a multiple of 3), in memory of Professor A. De Morgan, the Society's first President. The De Morgan Medal for 2010 can only be awarded to a mathematician who is normally resident in the United Kingdom of Great Britain and Northern Ireland on 1 January 2010.

The Senior Berwick Prize, for 2010, is awarded in respect of an outstanding piece of mathematical research actually published by the Society during the period 1 January 2001 until 31 December 2009. The award is named after Professor W.E.H. Berwick, a former Vice-President of the Society, and is awarded in even-numbered years. The Senior Berwick Prize for year 2010 can only be awarded to a mathematician who is a member of the Society on 1 January 2010. The Senior Berwick Prize may not be awarded to any person who has previously received the De Morgan Medal, Pólya Prize, Senior Whitehead Prize or Naylor Prize.

The Fröhlich Prize is awarded for original and extremely innovative work in any branch of mathematics. The Prize is awarded in even-numbered years in memory of Professor Albrecht Fröhlich. The Fröhlich Fund for this purpose was based on a generous donation from Mrs Fröhlich, reflecting Professor Fröhlich's great enthusiasm for, and gratitude to, the London Mathematical Society. The 2010 awarding of this prize is restricted to mathematicians who, on 1 January 2010, are either (i) normally resident in the United Kingdom of Great Britain and Northern Ireland, or (ii) members of the Society mainly educated in the United Kingdom. The Prize can only be awarded to a mathematician

who has fewer than 25 years (full-time equivalent) of involvement in mathematics at post-doctoral level, allowing for breaks in continuity, or who in the opinion of the Prizes Committee is at an equivalent stage in their career. The Fröhlich Prize may not be awarded to any person who has received the De Morgan Medal or the Pólya Prize.

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The Whitehead Prizes are awarded on arounds which include work in and influence on mathematics, and are in memory of Professor J.H.C. Whitehead, a former President of the Society. The awards are restricted to mathematicians who, on 1 January 2010: (i) are either normally resident in the United Kingdom or members of the Society mainly educated in the United Kingdom, (ii) are not already Fellows of the Royal Society, and (iii) either have fewer than 15 years (fulltime equivalent) of involvement in mathematics at post-doctoral level, allowing for breaks in continuity, or, in the opinion of the Prizes Committee, are at an equivalent stage in their career.

#### **COMPOSITIO PRIZE 2009**

The first Compositio Prize for the best paper in *Compositio Mathematica* has been awarded to D. Maulik, N. Nekrasov, A. Okounkov and R. Pandharipande: 'Gromov–Witten theory and Donaldson–Thomas theory. II', *Compositio Mathematica* **142** (2006) no. 5, 1286–1304.

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

The actual prize consists of a model of the Cayley surface and will be handed to the authors during a festive colloquium featuring talks by the authors in the spring of 2010. ()

#### NEWSLETTER

# MATHEMATICAL SOCIETY OF JAPAN

The 2009 Mathematical Society of Japan (MSJ) prizes were awarded as follows:

The Spring Prize is awarded to an MSJ member, below the age of forty, who has made outstanding contributions to mathematics in the highest and broadest sense. The Prize has been awarded to Narutaka Ozawa, Associate Professor of the University of Tokyo for his outstanding contribution to Discrete Group and Operator Algebra. He has introduced very novel methods for the classification of operator algebras and has solved many important unsolved problems; in particular, in a series of papers with S. Popa, he has proved the uniqueness of tensor decomposition of tensor products of von Neumann group-rings of various discrete groups and determined the structure of Cartan subrings of classes of von Neumann algebras, which provides very strong information on the structure of von Neumann algebra.

The Algebra Prize has been awarded to Professor Keiji Oguiso (Keio University) for his fundamental and outstanding contribution to the theory of generalized Calabi–Yau manifolds, the most important subject of present algebraic geometry, and to Akihiko Yukie for his fundamental and outstanding contribution to the theory of pre-homogeneous vector spaces, in particular for his novel geometric methods for studying orbits in pre-homogeneous vector spaces and applying them to number theory.

The **Publication Prize** has been awarded to the following individual and two series of books:

Professor Masahito Takase of Kyushu University for his contribution to popularizing mathematical culture by translating important classical books including those of Euler, Gauss and Legendre and by his writings on mathematics.

- Suuri wo Tanoshimu Sirizu (Series for Joy of Mathematical Sciences) by Hayakawa Shobou Publishing Co. for its contribution to popularizing mathematical sciences by publishing many new and good old mathematics books in the popular science genre in a reader-friendly manner.
- Chikuma Gakugei Bunko, Math & Science (Chikuma Library on Arts and Sciences, Math & Science) by Chikuma–Shobou Publishing Co. for its contribution to popularizing more serious mathematical sciences by publishing many good books on the motive and the philosophy behind the development of mathematical sciences.

# PARTNERSHIPS FOR PUBLIC ENGAGEMENT

#### **Call for Proposals**

The EPSRC Partnerships for Public Engagement (PPE) scheme provides opportunities for researchers to undertake public engagement projects related to their research interests. Awards are aimed at active researchers, and their research groups, in partnership with outside specialists or partner organisations that can provide the necessary expertise.

EPSRC is particularly interested in projects that not only increase the public's awareness of science and engineering, but also include some level of dialogue between members of the public and scientists or engineers. EPSRC would also encourage projects to consider the wider context of the research area, particularly in reference to societal and ethical issues.

The deadline is **4 pm on Wednesday 11 November 2009.** For further and more detailed information visit the website at www. epsrc.ac.uk/CallsForProposals/ppe14.htm.

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#### NEWSLETTER

# LMS DURHAM RESEARCH SYMPOSIA

The LMS Research Meetings Committee is responsible for the planning of the LMS Durham Symposia, which have been running successfully each July and August since 1974, with 90 symposia to date, in a wide range of mathematical disciplines. In 2009 there were two Durham Symposia, both supported by EPSRC.

- 6-16 July: Combinatorial and geometric structures in representation theory (organisers: J. Brundan, J. Chuang, I. Gordon, B. Leclerc)
- 20-30 July: New directions in the model theory of fields (organisers: D. Macpherson, A. Pillay, M. Prest, A. Wilkie)
- The Durham website (www.maths.dur.ac.uk/ events/Meetings/LMS/) gives information about the above, and all previous symposia including, in many cases, a list of participants, abstracts of talks, a symposium photograph (the earliest surviving photograph is from 1976), lecture notes and, for more recent symposia, videos of the talks.

The symposia in 2008 and 2007 were as follows.

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- Mathematical aspects of graphical models (P. Dawid, S. Lauritzen)
- Computational linear algebra for partial differential equations (A. Ramage, D. Silvester, A. Wathen)
   2007
- Recent developments in random walks (B. Hambly, L. Saloff-Coste, P. Tarrès),
- Twistors, strings and scattering amplitudes (Z. Bern, P. Candelas, X. de la Ossa, L. Mason) The LMS Research Meetings Committee (RMC) welcomes ideas for symposia, for 2012 and later, from potential organisers and others, who should contact the Chairman of the Committee, Professor N.S. Manton (manton@ Ims.ac.uk). The EPSRC has recently agreed to fund the Durham Symposium programme

until at least 2013, and the RMC is able to approve proposals (after an external refereeing process) and commit substantial funding, including full economic costs of the organisers, the subsistence costs of all invited participants, and some travel support. Considerable assistance is available in preparing the scientific and financial case for the proposals, and in the running of the symposium itself.

More information concerning the Durham Symposia is available on the LMS website (www.lms.ac.uk/activities/rmc/).

#### LMS Research Workshops

As well as the successful series of Durham Research Symposia, the Research Meetings Committee supports research workshops. These may be held anywhere in the UK, and are an opportunity for a small group of active researchers to work together for a concentrated period, on a specialised topic. Possible aims could include:

- to understand an important new piece of mathematics in an area where the participants hope to make further progress;
- to make progress on a particular problem;
- to combine expertise to shed new light on a specific area.

There is no prescribed format for an LMS research workshop, but it is expected that the number of participants will be usually no more than 40, and could be as low as 10, meeting for a period of a week or more. All participants should be actively involved in the programme, and should be identified in the proposal; the participation of appropriate postdocs and graduate students is encouraged. Applications to support development of research in an area not ready for a largerscale application (either to LMS or EPSRC) are welcomed. All proposals are refereed, and the Committee will offer support only if it believes that the benefits to UK mathematics are likely to be significant.

Requests for support (for travel and subsistence of participants, and reasonable

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ubble associated costs) in the range £4k-£15k will be considered by the Committee. Applications for partial support for larger events will only exceptionally be supported. The primary purpose of the scheme is to support new research initiatives, and the Committee may take this into account in considering support for meetings which form part of an established series. Grant requests for conferences should be made to the Society's Programme Committee instead, which has funds for this purpose.

Applications should be sent by email to manton@lms.ac.uk; there is no application form. Proposals should contain a description of the research area, the aims and format of the workshop, a list of participants and a budget, as well as details of the proposed location and timing. Applicants are advised to consult Nick Manton (manton@lms.ac.uk) informally about their proposed programme and timescale before making an application. Applications should normally be made 8–12 months before the proposed workshop.

### JIM WIEGOLD

Professor James Wiegold, who was elected a member of the London Mathematical Society on 13 June 1957, died on 4 August 2009, aged 74. He was LMS *Journal* Secretary 1975–77, *Proceedings* Editor 1986–92 and Deputy Editor on *Sbornik*.

John Lennox writes: Jim Wiegold was a gifted and passionate mathematician. At Manchester he gained a BSc (1st class) in 1954, MSc 1955 and PhD 1958 on Nilpotent products of groups with amalgamations, supervised by Bernhard Neumann.

He was Assistant Lecturer at the University College of North Staffordshire (1957–60) and Lecturer, Faculty of Technology, Manchester University (1960–63). In 1963 family considerations drew him back to Wales to what is now Cardiff University. He rose rapidly through the ranks of Senior Lecturer and Reader and was awarded a personal chair in 1974 and a University of Wales DSc in 1976. During 1968–70 he visited the ANU to work with Hanna Neumann, a visit of great importance to his mathematical development. He was also a Member of the Mathematical Sciences Subcommittee of the University Grants Committee.

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But first and foremost Jim was a gifted research mathematician, prolific and gregarious. Two-thirds of his 126 papers were written jointly with others. His joy in collaborative work sprang from a rare intellectual generosity. He had 14 research students in all of whom he took great pride. He was also a gifted communicator whose lectures were a model of fluency, logical clarity and, somewhat rare among mathematicians, legibility – and that, incidentally, whether he wrote with his right hand or his left. He was much in demand as a plenary speaker.

In 1981 Jim contributed a series of celebrated lectures (published by the LMS) on his seminal and elegant work on the Schur multiplicator to the first ever Groups St Andrews conference. In their history of that conference Colin Campbell and Edmund Robertson write: "Despite our planning of the 1981 dates, the wedding of Prince Charles and Princess Diana was announced to take place during it... However, Jim Wiegold, the 'Mathematical Prince of Wales', provided our own star attraction." It was fitting that at the 29th Groups St Andrews conference in Bath that ended last week, participants were called upon by Charles Leedham-Green to stand in silence in tribute to that Mathematical Prince of Wales.

Jim, though small in stature, was a big man in every other way making it impossible to separate the personal from the professional. Peter Neumann wrote: "Jim's professional record is excellent; his personal record the same, and he had the uncanny knack of combining the two in such a way that everyone who came across him professionally, loved him personally." ( )

#### NEWSLETTER

### **PETER RADO**

Dr Peter Rado who was elected a member of the London Mathematical Society on 16 November 1972, died on 25 June 2009, aged 66.

Norman Biggs writes: Peter was born into mathematics, because his father Richard Rado was for many years Professor at Reading University. At the age of 15 he was diagnosed to be suffering from kidney failure, and the prognosis was bleak. Despite spending many hours on dialysis in a hospital bed, he graduated from Cambridge in 1966, and in 1970 he became a lecturer at Royal Holloway. Not surprisingly, his lifestyle at that time was rather complicated, although he managed to pursue his interest in choral singing. In due course he was able to have dialysis at home, and in 1976 he married Jo Headley, a fellow member of the BBC Symphony Choir, who brought some order and normality into his life. Peter and Jo started a family, and in 1988 a kidney transplant was successful. In 1989 he took up a post at Leighton Park School in Reading, but he remained in touch with the mathematical community and was often to be seen at the annual Reading Combinatorics Colloguia.

## EU INFRASTRUCTURE IN MATHEMATICS

After considerable efforts by the European Mathematical Society, the European Union has agreed to acknowledge infrastructures in Mathematics. At the end of July Brussels published a €10M call on 'Infrastructures for Mathematics and its interfaces with science, technology and society at large'. On 24 September there was an infrastructure meeting in Brussels where Jean-Pierre Bourguignon, Mario Promicerio, Thibaut Lery (ESF) and Ari Laptev (EMS President) met Lorenza Saracco of the EU. It has been preliminarily agreed that, if it is approved, the administration of the project will be run by the European Science Foundation. Thibaut will assist with writing the proposal, so it satisfies all necessary Brussels' requirements. The ESF will be responsible for the administration but not for the scientific content of the project. Work is proceeding on the text of the proposal in coordination with the ESF (Thibaut), ERCOM (Jean-Pierre) and the EMS Applied Mathematics Committee (Mario). There will be a further meeting in October in Strasbourg.

#### **NEWS FROM THE IMU**

#### African Mathematical Union

At the General Assembly of the African Mathematical Union which took place in Yamoussoukro (Ivory Coast) on 2 August 2009, the following new Executive Committee members were elected:

- President: Professor Saliou Touré (Ivory Coast)
- Secretary General: Professor Oluwole Daniel Makinde (South Africa)
- Treasurer: Professor Moussa Ouattara (Burkina Faso)
- Regional Vice-Presidents: Vice-President for North Africa: Professor Chikh Bouzar (Algeria)
  - Vice-President for West Africa: Professor Sam Ale (Nigeria)
  - Vice-President for Central Africa: Professor Juma Shabani (Burundi) Vice-President for East Africa:
  - Verdiana Masanja (Tanzania) Vice-President for Southern Africa:
    - Edward Lungu (Botswana)

For more information, contact Professor Makinde (makinded@cput.ac.za or dmakinde@ yahoo.com).

The above item is taken from the 37th issue of the IMU electronic newsletter *IMU Net* (see www.mathunion.org/ IMU-Net).

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#### NEWSLETTER

### **MATHEMATICS POLICY ROUND-UP**

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#### **Setting Research Funding Priorities**

The Council for the Mathematical Sciences has responded to the House of Lords Science and Technology Committee's recent call for evidence on the setting of research funding priorities. The CMS response was strong in its defence for funding fundamental research. It argued that the balance between targeted and response-mode research has shifted so far towards the former as to threaten the viability of basic science in this country. Citing the recent cuts to the Engineering and Physical Sciences Research Council's annual budget for mathematical sciences (down from £21 million in 2006/7 to just £14 million in 2009/10), the CMS wrote: "We believe that the budget is now below the minimum needed to sustain mathematical sciences research. The effects of 'turning the tap off' will be felt for a long time... a decision to decrease investment in fundamental research now is a decision to limit innovation further downstream, even in the targeted areas that the Research Councils are aiming to support." The enquiry was launched in the context of public debate on cuts in public spending, looking at how these will affect science and technology spending. To read the full CMS response, visit www.cms.ac.uk/submissions. html.

#### General Election planning

LMS staff attended workshops at the Campaign for Science and Engineering (CaSE) to ensure that the views of the mathematical sciences community are represented in the CaSE's forthcoming general election campaign. The workshops covered the machinery of science and engineering in government and government departmental R&D, education, skills and the research base. The mathematics community was also represented by the IMA's education officer and the secretariat of the Advisory Committee on Mathematics Education. CaSE is working with its members (learned and professional societies, universities and institutes, charities and business) to produce a document on behalf of the science, technology, engineering and mathematics community which will be used in the coming few months to inform the political parties in the run up to the next general election.

#### The Big Bang Young Scientists and Engineers Fair

Jeremy Buckle, event director of the Big Bang Fair, addressed a well-attended meeting of the Mathematics Promotion Network at the end of September. The fair aims to attract over 20,000 visitors, predominantly aged 9 to 19, celebrating STEM and ultimately looking to show them what sort of careers are available to them from studying STEM subjects. The fair will pull together over 70 organisations from business and industry, government and the STEM community, with stands, competitions, workshops and large-scale high-tech shows. Mr Buckle is keen to see activities from the mathematical sciences well represented at the event. which will take place in Manchester from 11 to 13 March 2010. He invited the mathematical sciences to submit proposals for the fair, underlining his understanding of the unique nature of these subjects and encouraging the community to work with the fair to develop suitable resources. The fair first took place earlier this year in London. It grew from a proposal in Lord Sainsbury's 2007 report Race to the Top. To find out more about the fair, visit www.thebigbangfair. co.uk and to submit proposals go to www. thebigbangfair.co.uk/activities.cfm.

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#### **REF consultation**

The Higher Education Funding Council for England launched a consultation on its proposals for the Research Excellence Framework, which is due to replace the Research Assessment Exercise from 2012. The new system will see each university department submit evidence to be rated, with 60% of marks awarded for the quality of their research as judged by academic panels, 25% according to the impact the research makes and 15% according to the guality of the department. The Council for the Mathematical Sciences is planning to respond to the consultation and will examine the potential benefits and possible drawbacks of having a combined panel and Unit of Assessment covering all pure mathematics, applied mathematics and statistics. It will also consider the weighting of the 'impact' component of the assessment and the extent to which the assessment of this will take account of particular features of mathematical sciences. The CMS had been concerned that reliability of citation measures in the mathematical sciences would be a problem in the new system, but the consultation document suggests that individual panels will be able to decide on the extent to which metrics will inform their peer review process and other matters such as possible sampling methods for reviewing outputs. To view the consultation, which closes on 16 December 2009, visit www.hefce.ac.uk/news/hefce/2009/ref.htm.

> Caroline Davis Mathematics Policy and Promotion Officer

#### EUROMATH 2010

The EUROMATH 2010 Student Conference in Mathematics for students aged 12–18 will be held in Bad Goisern, Austria, from 25 to 28 February 2010. Please visit the website www.euromath.org for more information.

# **NEWS FROM ICMS**

#### **Calls for proposals**

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The International Centre for Mathematical Sciences (ICMS) is inviting proposals for workshops to take place in 2011. Proposals can be submitted up to the end of November 2009 for consideration by the Programme Committee in January 2010. Potential organisers should contact Irene Moore, Centre Manager at ICMS (irene.moore@icms.org.uk) to discuss ideas and timetables before submitting a firm proposal.

Proposals are also invited for the ICMS Research-In-Groups (RiGs) programme. This programme enables researchers to spend a short period in intensive research collaboration at ICMS, in Edinburgh, away from teaching and administration. The primary aim of this flexible programme is to support top-quality international research in the mathematical sciences. Therefore ICMS encourages adventurous proposals involving novel groupings of researchers, especially in interdisciplinary areas, involving overseas collaborators. Proposals can be submitted at anytime. Forthcoming workshops:

- Mixture estimation and applications 3–5 March 2010
- Numerical solution of the Painlevé equations 10–14 May 2010
- Uncertainty guantification 24–28 May 2010
- Hodge-theoretic reflections on the string landscape 14–18 June 2010
- Mathematical challenges and modelling of hydroelasticity 22–25 June 2010
- Symplectic geometry and transformation groups 5–9 July 2010
- Reconstructing and understanding climate change over the last few millennia and the Holocene 12–13 July 2010
- Multivariate approximation and interpolation with applications 6–10 September 2010
- Oscillatory integrals in harmonic analysis
   25–29 July 2011

Further information on both programmes is available at www.icms.org.uk/forthcoming Workshops.php.

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### **ALAN TURING**

Alan Turing gets an apology as the centenary of his birth approaches.

It is not often mathematicians feature in the international media, still less get an apology from a head of government. But the petition asking for an apology from the UK Prime Minister for the prosecution of Alan Turing that led to his untimely death (see the October *Newsletter*) rapidly attracted over 31,000 signatures. It was rewarded with a full and obviously sincere statement of regret for Turing's treatment from Gordon Brown, with the petition still having four months to run (it closes on 20 January 2010).

The next step, it is hoped, will be wider recognition of the unique impact of Turing's scientific work on the modern world. Turing was one of only two mathematicians to feature in 2000 in Time Magazine's 100 *Most Important People of the Century*, those who "most influenced the last 100 years". Apart from Turing's key code-breaking work at Bletchley Park during WWII, he also made seminal contributions to artificial intelligence, the development of the computer, and the mathematical analysis of morphogenesis, complexity and incomputability in the world.

The 2012 Turing Centenary is now less than three years away, and people from many spheres of activity are working together to prepare for a 2012 'Alan Turing Year' worthy of the great man and mathematician. Already the BMC committee has confirmed the dates (16–19 April 2012) for the British Mathematical Colloquium at the University of Kent, with unanimous agreement to include a suitable celebration of Turing's birthday. There are also a number of other major Turing-related conferences planned for 2012. For more information go to www.turingcentenary.eu.

> Barry Cooper University of Leeds

# IBNI OUMAR MAHAMAT SALEH

Ibni Oumar Mahamat Saleh was kidnapped from his home in N'Djamena on 3 February 2008, and almost certainly murdered soon after. Saleh was a French-trained mathematician, academic administrator and politician, and was very active in Chadian mathematics and science and in scientific contacts between Chad and France. In September 2008 the authorities in Chad published a report on the events of February 2008, concluding that the crime was the work of elements of the Chad army, but without giving any details.

A number of French colleagues of Saleh have set up a petition demanding the truth on Saleh's disappearance, supported by Société Mathématique de France among many other organisations and individuals. Looking to the future, they are also setting up a scientific prize to keep his memory alive, and to foster his scientific work and international collaboration. For details, or to subscribe to the prize fund, please go to http://smf.emath.fr/PetitionSaleh/ and http:// prisonniers-politiques.over-blog.com/article-27611897.html.

> Miles Reid University of Warwick

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# VISIT OF PROFESSOR P. GORKIN

Professor Pamela Gorkin (Bucknell University, Lewisburg, USA) will be visiting the UK and Ireland from 16 to 29 November 2009. She will give talks on Blaschke products and related topics at:

- Leeds, 17 November
- Lancaster, 20 November
- Maynooth, 25 November
- Belfast, 27 November

For further information contact Dr Martin Mathieu (m.m@qub.ac.uk). This visit is supported by an LMS Scheme 2 grant.

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#### NEWSLETTER

#### **GOOD PRACTICE AWARD**

#### Advancing women's careers in the mathematical sciences

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GOOD PRACTICE AWARD

It is well documented that although nearly 40% of graduates in the mathematical sciences are female, there is a severe drop-off in the proportion of women who become academic mathematicians. Only about 4% of professors of mathematics in the UK are female. This is a general story across STEM subjects, although the drop-off rate is particularly bad

for mathematics.

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The LMS Women in Mathematics Committee (WiM), working with the Committee of Heads of Departments of Mathematical Sciences (HoDoMS), has launched a new scheme, called the Good Practice Award, which aims to address this problem. All UK university mathematical science departments should have now received information about the scheme.

The Good Practice Award aims to advance women's careers in these departments. The process is intended not

to be overly bureaucratic or onerous, but to focus on the real issues and produce actual benefits to the departments and those who work in them. It is based on five principles.

HoDoMS

1: A robust organisational framework to deliver equality of opportunity and reward.

2: Appointment, promotion and selection processes and procedures that encourage men and women to apply for academic posts at all levels.

3: Departmental structures and systems that enable men and women to progress and continue in their careers.

4: Departmental organisation, structure, management arrangements and culture that are open, inclusive and transparent and



encourage the participation of all staff.

5: Flexible and sensitive employment arrangements that enable individuals, at all career and life stages, to maximise their contribution to mathematics, their department and institution.

A number of initiatives have been developed to try and improve the culture in

> science and technology departments - specifically for women, but such cultural changes often benefit the working lives of all. For example, the Institute of Physics recently launched 'Project Juno', a code of practice for university physics departments following a series of audit visits to university departments. The Royal Society of Chemistry also has an active scheme. and there is an overarching code of practice for STEM faculties, the Athena SWAN Charter.

The Good Practice Award committee benefited from the expertise of the IoP, who have been happy to share their experience, and from links with the RSC and Athena SWAN.

It is hoped that all departments will sign up to the five principles and become 'GPA Supporters', before working their way through action plans to become 'GPA Champions'. Departments which would like to be considered will be asked to submit a report and action plan and would then be visited by a small panel from the Award Steering Committee.

For more information or a copy of the brochure please see the LMS website www.lms.ac. uk or contact goodpracticeaward@lms.ac.uk. IC

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#### Second Announcement

The International Conference of Women Mathematicians (ICWM) will take place from 17 to 18 August 2010 at the University of Hyderabad over the two days immediately before the International Congress in 2010. The meeting is aimed principally at women mathematicians attending the ICM (though men are also very welcome to attend), and in particular at young women mathematicians and women from Asia and from developing countries. The talks will be colloquium-style lectures aimed at a general mathematical audience, and it is hoped that participants will be provided with an opportunity to meet other women mathematicians about to take part in the ICM and to find out about some of the areas of research to be covered at the ICM. There will be nine lectures of 45 minutes each from the following speakers:

- Julie Deserti (Paris, France)
- Frances Kirwan (Oxford, UK)
- Maryam Mirzakhani (Stanford, USA)
- Neela Nataraj (IIT Bombay, India)
- Raman Parimala (Atlanta, USA)
- Mythily Ramaswamy (TIFR Bangalore, India)
- Maria Saprykina (KTH Stockholm, Sweden)
- Nathalie Wahl (Copenhagen, Denmark)
- Di Yana (CAS Beijing, China)

In addition to the lectures there will be a discussion forum and a conference dinner on the evening of 17 August. Registration will begin on 1 January 2010. More information (on the venue, programme, accommodation etc) will be available on the website by then.

ICWM 2010 is being organised with the support of European Women in Mathematics (http://www.math.helsinki.fi/EWM/), the European Mathematical Society (http://www. emis.de/) and the Association for Women in Mathematics (http://www.awm-math.org/). Financial support is being provided by the National Board for Higher Mathematics (NBHM), India, and by Schlumberger. There will be some funding available to support the travel and accommodation costs of women participants from Asian and developing countries, and women from these countries are encouraged to apply to the local organizing committee. The local organising committee (set up by the ICM Executive Organizing Committee) is:

 Shobha Madan (Indian Institute of Technology, Kanpur), chair

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- Mahuya Datta (Indian Statistical Institute, Kolkata)
- S.G. Dani (Tata Institute of Fundamental Research, Mumbai)
- Jaya N. Iyer (Institute of Mathematical Sciences, Chennai)
- B. Sri Padmavathy (University of Hyderabad, Hyderabad)
- Rahul Roy (Indian Statistical Institute, Delhi)
- Geetha Venkataraman (St. Stephen's College, Delhi)

The scientific programme has been planned by the EWM/EMS Scientific Committee, coopting two mathematicians from India. The scientific committee is:

- Ulrike Tillmann (Oxford, UK), chair
- Viviane Baladi (ÉNS, Paris, France)
- Eva Bayer (Lausanne, Switzerland)
- Christine Bernardi (Paris VI, France)
- Christine Bessenrodt (Hannover, Germany)
- Antonella Grassi (U. Penn., USA)
- Ursula Hamenstädt (Bonn, Germany)
- Dusa McDuff (Stony Brook, USA)
- Ragni Piene (Oslo, Norway)
- Mythily Ramaswamy (TIFR Bangalore, India)
- Sujatha Ramadorai (TIFR Mumbai, India)
- Vera Sos (Rényi Institute, Budapest, Hungary)
- Nina Uraltseva (St Petersburg, Russia)
- Michèle Vergne (École Polytechnique, Paris, France)

For more information contact the chair of the organising committee Shobha Madan (madan@iitk.ac.in). \_

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#### NEWSLETTER



FROM THE INVENTION OF THE ZERO TO THE ASSEMBLY OF THE WORLD'S MOST EMINENT MATHEMATICIANS IT'S BEEN AN EXCITING JOURNEY.

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The Indian mathematical community is happy to invite you to the International Congress of Mathematicians, 2010. From the invention of the decimal place value system and the fundamentals of calculus to the work of Ramanujan and Harish-Chandra this ICM is as much a celebration of our mathematical tradition as it is an occasion to interact with the finest minds in the field today. Please join us in the historic city of Hyderabad, a beautiful blend of modernity and heritage, at the state-of-the-art Hyderabad International Convention Centre.

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



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## ICM 2010 INVITED SPEAKERS

The International Mathematical Union prepares the list of invited speakers of an International Congress with extreme care. The PC/OC Guidelines (www.mathunion.org/fileadmin/IMU/PC-OC-Guidelines.pdf) state in the beginning: "Every ICM should reflect the current activity of mathematics in the world, present the best work being carried out in all mathematical subfields and different regions of the world, and thus, point to the future of mathematics. The invited speakers at an ICM should be mathematicians of the highest quality who are able to present current research to a broad mathematical audience."

The IMU President chooses the chair of the programme committee (Hendrik Lenstra for ICM 2010), then the IMU Executive Committee selects, together with the PC chair, the other members of the programme committee, which then decides on the structure of the next ICM (sections and their definition, number of lectures, etc.), and selects panels for each section, which recommend the persons to be invited to speak. The PC then composes the scientific ICM programme taking such issues as gender balance, geographical/ regional distribution, representation of developing countries and of subfields of mathematics into account (as long as these considerations do not compromise mathematical guality).

This complicated process has now ended. The ICM 2010 Organizing Committee has invited all mathematicians selected by the PC, and almost all have accepted this very special honour. There are two types of Invited Lecturers: Plenary Speakers who will speak for one hour without any parallel activity and Sectional Speakers lecturing for 45 minutes with five to seven of such lectures in parallel. There will be twenty plenary lectures:

- David Aldous (USA)
- Artur Avila (Brazil and France)
- R. Balasubramanian (India)
- Jean-Michel Coron (France)
- Irit Dinur (Israel)
- Hillel Furstenberg (Israel)
- Thomas J.R. Hughes (USA)

- Peter Jones (USA)
- Carlos Kenig (USA)
- Ngo Bao Chau (USA)
- Stanley Osher (USA)
- R. Parimala (USA)
- A. N. Parshin (Russia)
- Shige Peng (P.R. China)
- Kim Plofker (USA)
- Nicolai Reshetikhin (USA)
- Richard Schoen (USA)
- Cliff Taubes (USA)
- Claire Voisin (France)
- Hugh Woodin (USA)

For the list of Sectional Speakers and Panel Discussions visit the website at www.icm2010. org.in/speakers.php.

## BSHM SPECIAL DECEMBER LECTURE

The British Society for the History of Mathematics (BSHM) Special December Lecture will be given by Dr Volker R. Remmert (Mainz University) on Visual representations of the mathematical sciences in the early modern period. The early modern mathematical sciences were embedded in a rich visual culture and mathematicians drew heavily on it. To promote their individual career, particular results and theories, or their specific discipline they would design elaborated visual statements. Thus the iconography of frontispieces or scientific instruments often highlighted the antiquity, the nobility and the utility of the mathematical sciences. The talk affords an insight into such visual strategies – often overlooked today, but essential to early modern mathematicians.

The lecture will take place at 2.00 pm on Saturday 12 December 2009 in the Hardy Room at De Morgan House, 57–58 Russell Square, London WC1B 4HS. Admission is £5 (free to students) including tea/coffee after the lecture. Payment should be sent with your name, address and email to Raymond Flood, Kellogg College, 62 Banbury Road, Oxford OX2 6PN..

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#### NEWSLETTER

# **BMC/BAMC 2010**

The 2010 combined meeting of the British Mathematical Colloquium and British Applied Mathematics Colloquium is being organised by the Maxwell Institute for Mathematical Sciences in Edinburgh. It will be held from 6 to 9 April (begins mid-morning, Tuesday 6 April, ends at 12.30 pm on Friday 9 April) in Edinburgh and will feature talks by the following plenary speakers:

- Emmanuel Candes (Stanford University) Stewartson Lecture
- Darryl Holm (Imperial College) Lighthill Lecture
- Robert MacKay (University of Warwick)
- L. Mahadevan (Harvard University)
- Maciej Zworski (Univ. of California, Berkeley)
- Christopher Hacon (University of Utah)
- Jeffrey Lagarias (University of Michigan)
- Gigliola Staffilani (MIT)

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- Philip Maini (Oxford University)
- Eric Vanden-Eijnden (New York University)
- Paul Embrechts (ETH) Public Lecture Targeted special sessions and mini-symposia
- of this meeting include
- Algebraic Geometry
- Dynamical Systems
- Financial Mathematics
- Geophysical Fluid Dynamics
- Liquid Crystals
- Mathematical Neuroscience
- Mathematical Medicine
- Mathematics of Information
- Mathematics of String Theory
- Numerical Analysis
- PDEs and Applications
- Spectral Theory

As always, contributed talks in all areas of pure and applied mathematics are welcomed. Registration opens on 1 December 2009 and closes on **12 February 2010**. For further information visit the website at www.maths2010.org.uk or email enquiries@ maths2010.org.uk. This meeting is supported by an LMS Conference grant.

# BCS-FACS EVENING SEMINAR

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The British Computer Society – Formal Aspects of Computing Science (BCS–FACS) will be holding a joint event with the London Mathematical Society on Tuesday 1 December 2009 at 5.45 pm. The speaker will be Professor Michael J. C. Gordon, FRS (University of Cambridge) with a talk entitled *Forward with Hoare*.

Refreshments will be available from 5.30 pm. The seminar will be held at De Morgan House, 57–58 Russell Square, London WC1B 4HS. The seminar is free of charge and open to everyone. If you would like to attend email Paul Boca (Paul.Boca@googlemail.com). Information is also available on the BCS-FACS website at www.bcs-facs.org/events.

Abstract. Hoare's celebrated paper entitled 'An Axiomatic Basis for Computer Programming' appeared in 1969, so the Hoare formula P{S}Q is now forty years old! That paper introduced Hoare Logic, which is still the basis for program verification today, but is now mechanised inside sophisticated verification systems. My talk aims to give an accessible introduction to methods for proving Hoare formulae based both on the forward computation of postconditions and on the backwards computation of preconditions. Although precondition methods are better known, computing postconditions provides a verification framework that encompasses methods ranging from symbolic execution to full deductive proof of correctness.

#### LMS CONFERENCE FACILITIES

Organising a seminar in central London? Meeting rooms and catering are available in De Morgan House. For terms and availability, please call 020 7927 0800 or email roombookings@demorganhouse.co.uk.

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## **CHISWELL SYMPOSIUM**

On Monday 9 November 2009, there will be three lectures and a dinner to celebrate the career and mark the retirement of Ian Chiswell from Queen Mary, University of London. The lectures will be given by:

- Martin Dunwoody (Southampton)
  - Finitely presented groups acting on trees
- Jim Howie (Heriot-Watt) Residually free groups

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 Peter Kropholler (Glasgow) Soluble groups and their classifying spaces

Please email Peter Cameron (p.j.cameron@ qmul.ac.uk) for further details, or to register your interest in attending the lectures and/ or the dinner.

### JUST INFINITE PROFINITE BRANCH GROUPS

A one day meeting on Just Infinite Profinite Branch Groups will be held on 12 December 2009 at Royal Holloway, University of London. The meeting will introduce newcomers to self-similar groups. It will then move on to recent results and open problems from a profinite perspective. There will be three talks and one problem session with breaks for discussions. The provisional programme is:

- Branch groups: theory and practice (John Wilson)
- Some branch group constructions (Dan Segal)
- Profinite groups generated by automata (Laurent Bartholdi)
- Open Problems (Laurent Bartholdi, Dan Segal, John Wilson et al.)

The meeting is part of the 'South England Profinite Groups Meetings' which are funded by an LMS Scheme 3 grant. Limited funds are available to reimburse travel expenses of UKbased students and young mathematicians. For more details see www.ma.rhul.ac.uk/ profinite\_groups/meetings.html or contact Y. Barnea and B. Klopsch (profinitegroups@ googlemail.com).

# GROUP REPRESENTATION THEORY AND RELATED TOPICS

An international conference Group Representation Theory and Related Topics will take place from Tuesday 22 to Friday 25 June 2010, in Lausanne, Switzerland. The aim of the conference is to stimulate activity in and enhance interaction between representation theory and related areas of mathematics. The meeting is also held in honour of Professor Jacques Thévenaz. The main speakers are:

Paul Balmer (UCLA)

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- David Benson (Aberdeen)
- Serge Bouc (Amiens)
- Michel Broué (Paris 7)
- Steve Donkin (York)
- Meinolf Geck (Aberdeen)
- Jesper Grodal (Copenhagen)
- Lacri lancu (Aberdeen)
- Radha Kessar (Aberdeen)
- Markus Linckelmann (Aberdeen)
- Nadia Mazza (Lancaster)
- Bob Oliver (Paris 13)

- Jérôme Scherer (Lausanne)
- Peter Symonds (Manchester)
- Peter Webb (Minneapolis)

In addition to the invited lectures, there will be contributed talks, mainly for young participants.

More information, including registration process and organiser's contact details can be found at http://grt.epfl.ch. 21

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#### NEWSLETTER

# MATHEMATICAL NEUROSCIENCE

A three-day Mathematical Neuroscience conference will take place from 19 to 21 April 2010 at the ICMS (15 South College Street, Edinburgh EH8 9AA). The conference will provide an overview of the current state of research in mathematical approaches to neuroscience, bringing together both physical and life scientists. Drawing together the field in this way will allow for a critical discussion of the relevant experimental facts and of various mathematical methods and techniques that have been successfully applied to date. Importantly, it will draw attention to, and help develop, those pieces of mathematical theory which are likely to be relevant to future studies of the brain.

The meeting will consist of invited speakers and registered participants, though will be limited to 100 people. The schedule will allow for a number of poster presentations. The Invited Speakers are:

- Paul Bressloff (University of Oxford)
- Romain Brette (École Normale Supérieure, Paris)
- Peter Dayan (University College, London)
- Bard Ermentrout (University of Pittsburgh)
- Kevin Gurney (University of Sheffield)
- Yixin Guo (Drexel University)
- Arjen van Ooyen (VU University Amsterdam)
- Alex Roxin (Columbia University)
- Steven Schiff (Penn State University)
- Eric Shea-Brown (University of Washington)
- Louis Tao (Peking University)
- Paul Tiesinga (Radboud University Nijmegen)
- Xiao-Jing Wang (Yale University)
- John White (University of Utah)
- Si Wu (Shanghai Institute for Biological Sciences)



The registration fee for the conference is £80. On 18 April, prior to the meeting, there will be a oneday training workshop for PhD students and post-docs entitled An introduction to Mathematical Neuroscience. Some financial assistance is available to assist araduate students who attend **both** the training workshop and the conference. Registration will open on 1 December 2009. Further details can be found at www.icms.org. uk/workshops/neuro2010. Enquiries should be addressed to Irene Moore: irene.moore@icms.org.uk.

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#### NEWSLETTER

# INSTITUT DES HAUTES ÉTUDES SCIENTIFIQUES

The Institut des Hautes Études Scientifiques (IHÉS), located in Bures-sur-Yvette (France), welcomes each year up to 250 mathematicians and theoretical physicists from all over the world for research periods ranging from two to three weeks up to one or two years.

Created in 1958, IHÉS is an international research institute, registered as a Foundation in the public interest since 1981. Its mission is to support and develop theoretical research in mathematical sciences, physics and more recently, at the interface with biology and medicine. Support for IHÉS comes from several sources: the French Ministry of Research, several European research agencies among which are the Engineering and Physical Sciences Research Council (EPSRC), the US National Science Foundation, the Max-Planck-Gesellschaft, the Swiss National Science Foundation, and also some private foundations and companies.

EPSRC has been supporting IHÉS for a number of years, fostering closer links between British and French mathematical research centres. British mathematicians and theoretical physicists are invited to apply to IHÉS for visits (for more information, please go to www.ihes.fr). Their visit can be an opportunity to work with researchers from other research groups in the Paris area.

**Director:** Jean-Pierre Bourguignon

Permanent Professors: Thibault Damour, Mikhael Gromov, Maxim Kontsevich, Laurent Lafforgue, Nikita Nekrasov

Honorary Professor: David Ruelle

Léon Motchane Chair: Alain Connes

Louis Michel Chairs: Michael Douglas, Samson Shatashvili, Ali Chamseddine

Long-term CNRS visitors: Christophe Breuil, Ofer Gabber, Dirk Kreimer, Christophe Soulé **External Members of the Scientific Council:** George Papanicolaou, Gerd Faltings, Gabriele Veneziano, Bertrand Duplantier

#### William Hodge Fellowships 2010/2011

In 2000 the EPSRC committee reviewing IHÉS suggested that the EPSRC and IHÉS offer each year two one-year fellowships bearing the name of Sir William Hodge, the eminent British mathematician. The fellowships enable outstanding young mathematicians and theoretical physicists to spend time at IHÉS. Fellows are encouraged to have a UK-based mentor and to be in contact with the UK mathematics community.

Applicants must have a PhD in Mathematical Sciences or Theoretical Physics obtained in 2008, 2009 or in early 2010. One of the two grants will be awarded to an applicant who has spent at least the preceding nine months at a UK academic institution or has just graduated from a UK institution Applications will be reviewed and selection made based on the sole criterion of excellence in research by the IHÉS Scientific Council in December 2009. The Committee consists of the Permanent Professors, the Director, and the external members (the list can be found above). The fellowships would start in the Autumn of 2010.

Applications should be made on the IHÉS website (www.ihes.fr) and should include: the application form, a cover letter, a CV, a publication list, a research project, two or three letters of recommendation, and a proposal for a UK mentor.

Deadline for applications: 16 November 2009.

For more information contact: IHÉS – 35, route de Chartres, F-91440 Bures-sur-Yvette (France), tel: +33 1 6092 6605, fax: +33 1 6092 6609, email: hodge@ihes.fr, website: www.ihes.fr.

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# BRIAN DAVIES 65TH BIRTHDAY CONFERENCE

A two-day conference to mark Professor E. Brian Davies's 65th birthday will take place in London from 8 to 9 December 2009. The conference will be followed by a special session of the London Analysis Seminar on 10 December. The conference speakers are:

- Albrecht Böttcher (Chemnitz)
- Nick Higham (Manchester)
- Frederic Klopp (Paris 13)
- Vladimir Maz'ya (Liverpool)
- Barry Simon (Caltech)
- John Toland (Bath)
- Nick Trefethen (Oxford)
- Maciej Zworski (Berkeley)
- The seminar speakers are:
- Lyonell Boulton (Heriot-Watt)
- Gerassimos Barbatis (Athens)

The event is organised by A. Pushnitski and E. Shargorodsky (King's College London). Some limited support for PhD students is available; please contact the organisers. To register and for further information visit the website at www.mth.kcl.ac.uk/ ~pushn/ebd65. The conference is supported by an LMS Conference grant.

# PARIS-LONDON ANALYSIS SEMINAR

A group of analysts working in London and Paris are organizing joint seminars, supported by an LMS Scheme 3 grant. These newly created Paris-London Analysis Seminars will occur four times a year in Paris and London. The next session will take place on 4 December 2009 at the Institut Henri Poincaré in Paris. For further information visit the website at http://people.math. jussieu.fr/~lerner/index.plans.html.

# INTERNATIONAL MATHEMATICAL OLYMPIAD

#### Report

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This July the 50th annual International Mathematical Olympiad was held in Bremen, Germany. Each member of the UK team earned a medal by coming in the top half of the competitors. Tim Hennock of Christ's Hospital, Horsham secured a gold medal. Silver medals were awarded to Luke Betts of Hills Road Sixth Form College, Cambridge, Peter Leach of Monkton Combe School, Bath, and Preeyan Parmar of Eton College. Bronze medals were awarded to Sean Moss of Havering Sixth Form College and Chris Bellin of Queen Mary's Grammar School, Walsall. The only team member who will not be going to university this year is Luke Betts who was only one mark short of a gold medal. Luke will be available for IMO 2010 in Astana, Kazakhstan.

At the pre-IMO camp, held in Trinity College Cambridge, the IMO faced the Australian side in the annual Mathematics Ashes. In a performance which may have inspired our cricketers, the UK won the Ashes from Australia by 67–60. The funerary urn (containing the burnt scripts from the first competition) and the associated cup are now safe in the northern hemisphere for the coming year.

A special 50th birthday celebration day included short lectures by some IMO stars from the past who have gone on to make important contributions to mathematical research: Béla Bollobás, Tim Gowers, László Lovász, Stanislav Smirnov, Terence Tao and Jean-Christophe Yoccoz.

As well as lecturing, the speakers took part in a very successful 'meet the students' session, and many autographs were obtained.

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#### NEWSLETTER

These days the United Kingdom Mathematics Trust also sends teams to participate in the Romanian Master of Mathematics Competition and the Balkan Mathematical Olympiad, and from August 2010 onwards we hope to send teams to the China Girls Maths Olympiad, joining the USA which already sends both East-Coast and West-Coast teams as guest competitors.

Full reports, together with leader's diaries, are available at www.imo-register. org.uk/reports.html.

> Geoff Smith Chair, British Mathematical Olympiad University of Bath

He argued that, while a small number of formulae have a proper mathematical foundation, for the most part PR companies cynically manipulate the press and that this reinforces the public's impression that scientists and mathematicians are "bonkers" and will deliver results according to whoever is paying.

Before Simon's session, the Section held its Presidential Reception which was extremely well attended. Simon had kindly provided signed copies of his books which were sold to help finance the Section.

Other sessions were: The Magic of Computer Science, in which Peter McOwan from Queen Mary, University of London, led a demonstration of magic card tricks which depend on simple mathematics having application to computer science; Mathematics

# BRITISH SCIENCE FESTIVAL 2009

#### Report

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This year's *British Science Festival* (formerly the British Association's *Festival of Science*) took place at the University of Surrey in Guildford from 5 to 10 September. The Mathematical Sciences Section organised a busy programme with six scheduled sessions ranging from paper folding to space travel, from the financial collapse to magic tricks.

This year's Section President was Simon Singh, writer of popular books on mathematics, journalist and documentary maker. His session dealt with the media's apparent passion for pseudomathematical formulae claiming to calculate everything from the "perfect boobline" and the best day for doing Christmas Shopping, to the best method for kicking a penalty in football.



An origami session unfolding



and Meltdown: How Financial Svstems Collapse, organised by the Royal Statistical Society; From Flapping Birds Space Telescopes: The Modern Science of Origami, organised by the British Origami Society (sessions were also run for the Festival's schools programme); and Fly Me to the Moon (and beyond), organised by the University of Surrey in cooperation with the Surrey Space Centre, a world leader in the design and pro-

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Peter Giblin, Recorder of the BSA Mathematical Sciences Section (left), with the LMS Education Secretary Chris Budd and Simon Singh, Section President

duction of small satellites. After describing the work of the Centre, the speakers talked about current and future missions to the outer planets, using gravity or the pressure of sunlight to power the space vehicles.

There was plenty of coverage in the media of this year's programme, in particular of Simon Singh's session and the *Fly Me* to the Moon session.

Next year's Science Festival will be held in Birmingham from 14 to 19 September hosted by Aston University. The Mathematical Sciences Section President will be Professor David Spiegalhalter, who is a specialist in the public understanding of uncertainty and risk, Bayesian methods, biostatistics and performance assessment at the University of Cambridge's Statistical Laboratory.

Proposals for sessions at the 2010 Festival have already been submitted, and plans are under way for another impressive programme in the mathematical sciences.

Caroline Davis Mathematics Policy and Promotion Officer

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### A TRIP TO BEIJING Report

At the end of last year I received an invitation to give a course of lectures at the recently established Beijing International Center for Mathematical Research (BICMR), set up by the Chinese Ministry of Education in Peking University (Beijing). There was to be a summer school and a workshop on group theory from 1 May to 31 August 2009 covering permutation groups, algebraic combinatorics, the representation theory of groups, the abstract group theory, especially finite *p*-groups, the computational group theory, and their applications.

The invitation said that I could give a series of lectures on any topic that interested me. The invitation came from Huiling Li (Zhejiang University) whom I knew and had visited in Hangzhou in the past. So I chose as the topic for my course *Automorphism groups of linear spaces*. This topic was one which I had first worked on in 1984 and which Professor Li and his students have developed so I knew there

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would be interest in the topic.

Graduate students came from all over China, so although I had lectured in China before it had never been to such a mixed audience. There were about 20 students, none of whom was at Peking University, and I had no details of where they were from or what they were studying for their research degrees. The assumption (given the title of the course) was that it was either in group theory or combinatorics, so I prepared some lecture notes in advance and sent them to two of the colleagues who had invited me. Fortunately one had circulated them to all the supervisors of the students who were going to attend so the students had my printed lecture notes in advance.

This was very helpful since some of the students were not that proficient in spoken English and given my tendency to speak both quickly and colloquially it can sometimes be difficult to follow me. I try very hard but when discussing interesting sums it is easy to get carried away. The two Chinese colleagues had been through the manuscript quite carefully and as the lecture course proceeded, and explanations were developed to suit the audience, updated versions were placed on the BICMR website. The worry about such websites is that, once something is there, anyone has access and might believe that this is the final version.

A mixture of difficulty with English and a cultural unwillingness to challenge the lecturer left me uncertain how the students reacted so it was hard to know how much the students enjoyed and learnt from the course. I tried to encourage them to ask questions and find errors in the notes, though I did not go as far as a colleague at my home university who once offered a pint for every mistake: this turned out to be quite expensive! One interesting difference between British and Chinese students came at the end of the course. It was due to end at noon on a Wednesday, so at the previous lecture I asked if the students would like to do something to celebrate and mentioned that in Britain we would go to the pub for a drink. No, they wanted to take pictures, so that is what we did. It was a pleasure to celebrate with them and gave me a chance to understand what had been happening in China in this branch of mathematics. We are dependent on the reviews to know what has been proved in papers written in Chinese.

People might be interested in more about the Center. The following is taken from their website, www.bicmr.org (Peter Shiu kindly gave me some help as most of the site is in Chinese).

The purpose of the BICMR is to nurture and sustain the best mathematicians in the country. Meanwhile, its other aim is to build a bridge for the many talented overseas scholars with inclination or intention to return to the country.

In each year the Center will select several important themes in some areas from basic mathematics or applied mathematics in order to carry out some in-depth research. This will include the organising of workshops, conferences and symposiums with invited distinguished individuals as participants. At the same time, in each year the Center will also select certain problems of particular importance and having good prospects for breakthough; various relevant distinquished individuals in the country will then be invited to the Centerto carry out the research. All projects and main problems will be vetted by international experts, and the decision on the final selections is the responsibility of the mathematics committee of the Center.

For the programme I was invited to take part in there was a separate organizing committee whose members were Xingui Fang (Peking University), Rongquan Feng (Peking University), Huiling Li (Zhejiang University), Jie Wang (Peking University), Lizhong Wang (Peking University), Mingyao Xu (Peking University), Jiping Zhang (Peking University) and Qinhai Zhang (Shanxi Normal University).

> Alan Camina University of East Anglia

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### ISAAC NEWTON INSTITUTE FOR MATHEMATICAL SCIENCES

#### **STOCHASTIC NETWORKS**

#### 22-26 March 2010

in association with the Newton Institute programme entitled Stochastic Processes in Communication Sciences (11 January – 2 July 2010)

Workshop organisers: Takis Konstantopoulos (Heriot-Watt) and Kavita Ramanan (Carnegie Mellon).

Scientific theme: Stochastic networks is a multifaceted area of research dealing with the stability, control, performance, approximations and design of stochastic models of networks. It gives rise to challenging and often subtle mathematical problems, whose solution often requires a combination of ideas and techniques from several branches of mathematics, including probability theory, stochastic processes, analysis, optimization, combinatorics and graph theory. Research in this area receives a strong impetus from important applications in diverse areas, ranging from the traditional areas of telecommunications and manufacturing to service operations, biological and social networks and revenue management.

The aim of this workshop is to bring together experts in this area to survey recent developments and identify future research directions. The workshop has been structured so as to maximize interactions between speakers and participants and to facilitate a fruitful exchange of ideas.

This week-long international workshop continues a tradition that was started in 1987 and that has now become a bi-annual event.

#### Preliminary list of invited speakers:

- Venkat Anantharam (UC Berkeley)
- David Anderson (Wisconsin)
- Rami Atar (Technion)
- Francois Baccelli (ÉNS and INRIA)
- Maury Bramson (Minnesota)
- Jennifer Chayes (Microsoft Research, Cambridge, USA)
- Steve Evans (UC Berkeley)
- Pablo Ferrari (Cornell)
- Peter Glynn (Stanford)

- Carl Graham (École Polytechnique)
- Bruce Hajek (Illinois)
- Marc Lelarge (ÉNS and INRIA)
- Marty Reiman (Bell Laboratories)
- Phillipe Robert (INRIA)
- Sebastien Roch (Microsoft Research, Cambridge, USA)
- R. Srikant (Illinois)
- Ruth Williams (UC San Diego)
- Bert Zwart (CWI)

Further information and application forms are available from the website at: www.newton.ac.uk/programmes/SCS/scsw02.html.

Closing date for the receipt of applications is 30 November 2009.

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#### **REVIEWS**

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# THE TRIBES OF SCIENCE: THE MATHEMATICIANS BBC Radio 4, 6 September 2009.

Mathematicians' public image is a sensitive issue. Recent films, such as A Beautiful Mind, Enigma, Good Will Hunting and Proof, have portrayed us as brilliant but psychologically damaged, and despite Marcus du Sautoy's valiant efforts to project himself as an ordinary footballing bloke who happens to be good at algebra, the general public see us as a rather weird bunch. I therefore approached this programme, the last of a series of five on different groups of scientists, with both interest and trepidation.

The programme was a 15-minute collage of interviews by Peter Curran with administrators and visiting mathematicians at the Isaac Newton Institute. Advance publicity had concentrated on mathematicians' unusual dress sense, and my fears were confirmed when the programme began with the Institute's Administrator, Christine West, criticising "wild hair" and "wearing the same T-shirt for six months, sometimes inside out". (I confess to listening in shorts and T-shirt, but they were recently washed and correctly oriented.) The Director, Sir David Wallace, started comparing the INI building to Dr Who's Tardis when a bell announced the beginning of a seminar, prompting a rather far-fetched analogy by Peter Curran, comparing mathematical seminars to religious rites, with "incantations of algebra".

Participants in the Algebraic Lie Theory and Discrete Integrable Systems programmes provided sound-bites, while in the background one heard snatches of mathematical jargon and the unmistakable sound of chalk on blackboard. There was little attempt to investigate the nature of the mathematics going on, probably wisely given the programme's scheduling in the soporific post Sunday-lunch slot between Gardeners' Question Time and The Classic Serial. More disappointingly, there was little discussion of the usefulness of mathematics: it might have been interesting for the general audience (and politicians) to hear mathematicians justifying public expenditure on basic research.

What came across clearly was the participants' passion for mathematics, and the INI's value in creating critical masses of researchers, temporarily free from teaching. A recurring theme was how mathematical research can dominate one's thinking: Meinolf Geck admitted himself lucky to have his hobby as a profession, while Gerhard Röhrle provoked a giggle from my wife by confessing that mathematicians' spouses are not always guaranteed complete attention in conversation. Christine West explained how she encourages visitors to unwind through receptions and punting. She clearly finds some groups easier to cope with than others: pure mathematicians apparently "sometimes struggle to deal with day-to-day life", and are often defeated by keys, washing machines, TV sets and staplers. Frank Nijhoff and Reinout Quispel, on the other hand, impressed the presenter by "passing for normal human beings".

Despite its weaknesses, this was an interesting and entertaining programme, giving a vivid sound picture of "this sanctuary of white walls and blond wood", even if it did reinforce some untypical stereotypes.

> Gareth Jones University of Southampton

The Mathematical Coloring Book: Mathematics of Coloring and the Colorful Life of its Creators by Alexander Soifer, Springer, 2009, 610 pp, \$59.95, ISBN 978-0-387-74640-1.

This is a most unusual book – or, more accurately, several books rolled into one. For the mathematician, it contains a range tai ria ٦ ma ne any fer int inc (hc ou tw dif or to as, est of wit tai K<sub>k</sub> un 1 col of an we aco a n - v lov yea ma nat bet B.L int cho de ٦ pre bu as

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of combinatorial colouring problems, while those interested in the recent history or the sociology of mathematics will be entertained by lively accounts of the combinatorialists who created and worked on them.

The problems range from the well-known map colour problem (how many colours are

needed to colour a plane map so that any two neighbouring countries are differently coloured? - answer: 4), via the intriguing 60-year-old problem of finding the chromatic number of the plane (how many colours are needed to colour the points of the plane so that any two points at unit distance apart are differently coloured? - answer: 4, 5, 6 or 7, but no-one has any idea which), to various Ramsey-type problems (such as, for each integer k, what is the smallest number *n* such that every colouring of the edges of the complete graph  $K_p$ with colours red and blue always contains a monochromatic complete graph

 $K_k$ ? – answer: 6 for k = 3, 17 for k = 4, and unknown for k > 4).

Interspersed with these (and many other) colouring problems are detailed accounts of their history - how they were created and why, who worked on them, how they were generalized, and so on. Many of these accounts are fascinating and revealing, and a number of rare photographs are included writing the book was clearly a labour of love for the author, taking him eighteen years and involving a great deal of mathematical and historical research. Unfortunately, his enthusiasm sometimes gets the better of him - for example, the algebraist B.L. van der Waerden is only of tangential interest in this area, yet the author bizarrely chooses to spend over one hundred pages describing his life.

The book is generally well written and presented, with good diagrams and layout, but has not been proof-read as carefully as one would wish. Infelicities of grammar (especially in the use of the definite and indefinite articles), some silly off-colour remarks, and rather too many typos tend to mar what is otherwise a useful and engaging book.

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Robin Wilson, Open University

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Mythematics: Solving the 12 Labors of Hercules by Michael Huber, Princeton University Press, 2009, 169 pp, £16.95, ISBN13: 978-0-691-13575-5.

Exactly how the mythical Greek hero accomplished his twelve labours depends on which classical version you read. Michael Huber offers further variations, by endowing Hercules with skill at mathematics as well as superhuman strength; Huber hopes that mathematics undergraduates might be entertained, even enlightened, by this offering. He has tweaked some labours in order to bring in more interesting mathematics, and, imitating Paul Halmos, confesses that "I wrote this book for fun, and I hope you will read it the same way".

The twelve chapters take the labours as described by Apollodorus. In each chapter, that labour is reformulated into several linked mathematical problems, followed by their solutions. Various asides explore other aspects of Ancient Greece, and the

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Appendices delve further into the legend of Hercules, but most of the book is mathematical, at the level of early undergraduate years.

Differential and integral calculus, including simple differential equations, appear frequently, with a smattering of difference equations, geometry and trigonometry, vectors, combinatorics, probability and statistics. Algebraic structures as such are absent, but some ideas of physical applied mathematics – the flight of an arrow (aimed at the Nemean lion), work done (in carrying home the Cerynitian hind), harmonic oscillators (to scare off the Stymphalian birds), water pressure (on the walls of the Augean stables) – find places. Excel spreadsheets and Monte Carlo methods also make brief appearances.

One aspect of the layout is annoying: the full wording of every problem is given again prior to its solution. This intrusive repetition is sometimes on the page facing its first appearance, and always within a few pages. My only major mathematical quibble is that the approach used to analyse the interaction between the hydra generating new heads, and Iolaus assisting his uncle by cauterising the necks, is not consistent with the background given. There are other lapses, of a minor nature, but they will not seriously mislead. In the spirit of the book, readers should take their cue from the author, and offer their own variations and generalisations.

The figures and diagrams are well chosen, the mathematics is presented attractively, the pace is appropriate. Unobtrusively, the general level of mathematical sophistication tends to rise as the book progresses. This book offers ideas to teachers seeking topics on which to pin some abstract maths, and could encourage students to think imaginatively about their subject, and where it might arise in unexpected circumstances. John Haigh

Sussex University

# **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).

#### **NOVEMBER 2009**

5 Mathematical Curiosities and Treasures from Professor Stewart's Cabinet, Public Lecture, The Royal Society, London (384)
9 Chiswell Symposium, Queen Mary, University of London (386)
9-11 Dynamics of Outer Planetary Systems Conference, INI, Cambridge (382)
20 LMS AGM, London (386)
24 The Maths of Sorting Things Out, Gresham College Public Lecture, Museum of London (384)
30-10 Dec De Brún Workshop in Computational Algebra, Galway (384)

#### DECEMBER 2009

1 Forward with Hoare, Joint LMS/BCS–FACS Evening Seminar, London (386) 4 Paris–London Analysis Seminar, IHÉS, Paris (386) 4-6 LMS–Belgian Mathematical Society joint meeting, Leuven 8-9 Brian Davies 65<sup>th</sup> Birthday Conference, London (386) 8-12 Operators and Operator Algebras Conference, Edinburgh (382) 10 London Analysis Seminar, London (386) 12 Visual Representations in the Mathematical Sciences in the Early Modern Period, BSHM Lecture, London (386) 12 Just Infinite Profinite Branch Groups Meeting, Royal Holloway (386) 14-18 Non-Abelian Fundamental Groups in Arithmetic Geometry: Final Workshop, INI, Cambridge (386)

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#### **JANUARY 2010**

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4-8 Stochastic Partial Differential Equations Workshop, INI, Cambridge (383)

11-15 New Topics at the Interface Between Probability and Communications Workshop, INI, Cambridge (383)

**12** *Code Breaking in Everyday Life*, Gresham College Public Lecture, Museum of London (384)

#### **FEBRUARY 2010**

9 Trains and Boats and Planes, Gresham College Public Lecture, Museum of London (384)

25-28 EUROMATH 2010 Student Conference, Bad Goisern, Austria (386)

26 LMS Mary Cartwright Lecture, Durham

#### **MARCH 2010**

3-5 Mixture Estimation and Applications
ICMS Workshop, Edinburgh (386)
9 Maths and Sport, Gresham College Public Lecture, Museum of London (384)
22-26 Stochastic Networks Workshop, INI, Cambridge (386)

#### **APRIL 2010**

6-9 BMC/BAMC 2010, Edinburgh (386)
6-9 BCME7, Manchester (385)
6-9 Spatial Network Models for Wireless
Communications, INI, Cambridge (386)
19-21 Mathematical Neuroscience Conference, ICMS, Edinburgh (386)

#### **MAY 2010**

10-14 Numerical Solution of the Painlevé Equations ICMS Workshop, Edinburgh (386)

24-28 Uncertainty Quantification ICMS Workshop, Edinburgh (386)

#### **JUNE 2010**

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14-18 Hodge-theoretic Reflections on the String Landscape ICMS Workshop, Edinburgh (386)

22-25 Group Representation Theory and Related Topics Conference, Lausanne, Switzerland (386)

22-25 Mathematical Challenges and Modelling of Hydroelasticity ICMS Workshop, Edinburgh (386)

#### JULY 2010 2 LMS Hardy Lecture, London

5-9 Symplectic Geometry and Transformation Groups ICMS Workshop, Edinburgh (386) 12-13 Reconstructing and Understanding Climate Change over the Last Few Millennia and the Holocene ICMS Workshop, Edinburgh (386)

#### AUGUST 2010

17-18 International Conference of Women Mathematicians 2010, Hyderabad, India (386)

19-27 International Congress of Mathematicians 2010, Hyderabad, India (386)

#### SEPTEMBER 2010

6-10 Multivariate Approximation and Interpolation with Applications ICMS Workshop, Edinburgh (386)
13 LMS Midlands Regional Meeting, Nottingham

#### **NOVEMBER 2010**

19 LMS Annual General Meeting, Naylor Lecture, London

#### **DECEMBER 2010**

6-10 Australian Statistical Conference 2010, Fremantle, Australia (383)

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# H. MARTIN LMS member 1867–72 and 1874



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Rev. Hugh Martin, MA Examiner in Mathematics and Natural Philosophy in the University of Edinburgh

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