LONDON MATHEMATICAL SOCIETY
EST. 1865

NEWSLETTER

No. 456 March 2016

LMS 150TH ANNIVERSARY CLOSING RECEPTION

Following an extraordinary 12 months of anniversary celebrations, the Society's 150th year ended on 15 January 2016 with a closing reception at De Morgan House for past and current officers.

The Officers Reception opened with a welcome from the President of the London Mathematical Society, Simon Tavaré FRS, who thanked all the guests for the contributions they'd made to the LMS over the years. The guests ranged from Past Presidents, General Secretaries, Treasurers, Secretaries and other Members of Council, whose dedication and hard work deserved recognition for helping to steer the Society to its 150th year and ensure its longevity into the future.

The President's welcome was followed by talks from the Society's 2015 Associate Artists, Mark Francis and George Legendre. Both artists talked in depth about the work they had produced for the 150th Anniversary. Mark Francis, a painter and sculptor, said he had, "furthered his interest in graphic interpretations by exploring the visual representation of mathematics." The Artist Associates Scheme, he said, "provided a unique opportunity to enter into dialogue with geometers and others to enhance his burgeoning interest and research with abstract dimensions of mathematics."

Mark Francis went on to allude to a new direction in his work, particularly with regard to his painting, which had been spurred on by his ongoing conversations with mathematicians Dr Iain Moffatt and Dr Dorothy Buck, who'd given their time generously on behalf of the Society to enter into creative conversation with the artist. Their conversations, the

LMS President Simon Tavaré with Associate Artists Mark Francis and George Legendre

Heidi Morstang, Martin Hyland, Simon Tavaré

SOCIETY MEETINGS AND EVENTS

- 21 March: Society Meeting at the BMC, Bristol *page 23*
- 21–25 March: LMS Invited Lectures, Loughborough *page 22*
- 20 April: Hirst Lecture & Society Meeting, St Andrews *page 18*
- 23 June: Northern Regional Meeting, Manchester
- 8 July: Graduate Student Meeting, London
- 8 July: Society Meeting, London
- 21 July: Society Meeting at the 7ECM, Berlin
- 11 November: Graduate Student Meeting, London
- 11 November: Annual General Meeting, London
- 20 December: South West & South Wales Regional Meeting, Bath

Contents

No. 456 March 2016

6

12

Society is pleased to report, will continue for the foreseeable future and inform the next phase of Francis' work. George Legendre, a London-based architect and sculptor, later spoke about his personal experience of the Scheme and expressed similar thanks to the Society for its support. Legendre produced a series of intricate sculptures during the Anniversary, titled *30 Pieces*. He described them collectively as "an installation combining the power of mathematical notation, diagramming and numerically-aided fabrication." "In honour of the 150th Anniversary of the LMS" he followed, "the collection of 30 sets teases the relationship between mathematical formulae, drawing and physical model, pitching the familiarity of the everyday against the uncanniness of the mathematical."

Following the artists' talks, Heidi Morstang, an artist and film director, then gave a talk about her documentary *Thinking Space*, which was commissioned by the Society as part of its 150th Anniversary. The documentary comprises a number of insightful interviews with prominent mathematicians: Kevin Buzzard, Peter Donnelly, Tim Gowers, Martin Hairer, Roger Penrose, Caroline Series, Richard Thomas, Reidun Twarock and Karen Vogtmann, and presents each in an unfamiliar context such as walking through the woods (Series), sitting and writing in a coffee shop (Thomas) and even ruminating in the bath (Buzzard).

Following her talk and introduction, the Society's guests were then invited to watch a screening of *Thinking Space*, which premiered at the LMS/Science Museum Mathematics Festival 'What's Your Angle: Uncovering Maths' back in December 2015.

The documentary was well received and a number of guests commented on the originality of the videography and content, saying it was rare that such prominent mathematicians and such complex mathematics are documented so clearly and creatively.

A wine reception followed the talks and the documentary screening, which allowed the Officers a chance to speak to the artists and to raise a glass to the continued health of the Society. Over 60 guests attended and enjoyed happy reminiscences over many years with their colleagues, making the Reception a fitting end to what has been a hugely successful and memorable year.

Jesse Garrick
LMS Anniversary Communications Assistant

Editorial team

http://newsletter.lms.ac.uk

Editorial office
London Mathematical Society, De Morgan House, 57–58 Russell Square, London WC1B 4HS
(t: 020 7637 3686;
f: 020 7323 3655)

Events calendar
Updates and corrections to calendar@lms.ac.uk

Articles
Send articles to newsletter@lms.ac.uk

Advertising
For rates and guidelines see newsletter.lms.ac.uk/rate-card

General Editor
Mr A.J.S. Mann
(a.mann@gre.ac.uk)

Reports Editor
Professor I. A. Stewart
(i.a.stewart@durham.ac.uk)

Reviews Editor
Professor D. Singerman
(d.singerman@soton.ac.uk)

Administrative Editor
S.M. Oakes
(newsletter@lms.ac.uk)

Typeset by the LMS at De Morgan House; printed by Holbrooks Printers Ltd.

Publication dates and deadlines

Published monthly, except August. Items and advertisements by the first day of the month prior to publication, or the closest preceding working day. Notices and advertisements are not accepted for events that occur in the first week of the publication month.

Charity registration number: 252660.

OUTCOMES FROM THE SPECIAL GENERAL MEETING

At the Special General Meeting held on Friday 5 February 2016, the motion put before the membership was:

Instruct the Council to continue publication of the LMS Journal of Computation and Mathematics as a charitable activity, thus reversing the Council's decision to close down the Journal.

The motion was not carried. Votes were 158 against the motion, 131 for the motion, and one abstention.

The President invites suggestions for how the Society might best support the discipline around the interface between mathematics and computation, in the light of these decisions. Such proposals should be sent to the President at President@lms.ac.uk.

Fiona Nixon
Executive Secretary

ANNUAL ELECTIONS TO LMS COUNCIL

The Nominating Committee is responsible for proposing slates of candidates for vacancies on Council and vacancies on its own membership. The Nominating Committee actively welcomes suggestions from the membership.

Anyone who wishes to suggest someone for a position as an Officer of the Society or as a Member-at-Large of Council (now or in the future) is invited to send their suggestions to Professor John Toland, the current Chair of Nominating Committee (nominations@lms.ac.uk). Please provide the name and institution (if applicable) of the suggested nominee, his/her mathematical specialism(s), and a brief statement to explain what s/he could bring to Council/Nominating Committee.

Nominating Committee seeks to maintain a balance in gender, subject area and geographical location when drawing up its list of prospective nominees, and LMS members should bear in mind that it is to the benefit of the Society that Council is balanced and represents the full breadth of the mathematics community. Further details about the work of the Nominating Committee are on the LMS website at www.lms.ac.uk/about/nominating-committee.

Nominations should be received by **Friday 29 April 2016** in order to be considered by the Nominating Committee.

In addition to the above there exists the option for members to make direct nominations for election to Council or to the Nominating Committee. Direct nominations must be sent to the Executive Secretary's office (nominations@lms.ac.uk) to arrive before **noon on 1 September 2016**. Nominations can be submitted in hard copy or via email. All nominations must bear the signatures of the nominator and three seconders and of the nominee. For hard copy, a letter with the relevant names and signatures is sufficient or submissions can be made via a form available from the LMS website at http://tinyurl.com/q28lrvp. For email submissions nominations and statements from seconders must be sent from a verifiable email address to nominations@lms.ac.uk. Members considering making a direct nomination are asked to bear in mind the desirability of Council being balanced with regard to the full range of mathematical specialisms, UK regions and gender.

The slate proposed by Nominating Committee, together with other direct nominations received up to that time will be posted on the LMS website in early August for members to see before deciding whether they wish to make any further direct nominations.

Further nominations will be posted onto the website as they are received.

BJPT EDITORIAL ADVISORY BOARD MEETING 2016

The Editorial Advisory Board of the *Bulletin, Journal, Proceedings* and *Transactions of the LMS* met at De Morgan House on 14 January 2016, for one of its triannual meetings. Nineteen of the 43 Editorial Advisers were present (some travelling even from the US or the South of Italy) and five of the seven Editors of the four journals reported on their policies and news from the journals. They were joined by the Publications Secretary, Professor John Hunton, who chaired the meeting, and the LMS publications staff. In addition, two representatives (Rachel Smith and Steve Raywood) of the new publisher, Wiley, took part and offered insight into the opportunites they offer, e.g. helping to increase the impact of the four journals.

The main purposes of these meetings are to enhance the flow of communication between editors and editorial advisers and between editors and authors, to provide information to all seven editors and 43 editorial advisers about submission numbers, acceptance rates etc., and to discuss changes or future developments of the present publication policies. Special attention was paid to the *Transactions*, launched in March 2013, and the geographical differences in submissions owing to its fully open access status. Feedback of authors to editorial advisers and editors showed that there is a need to emphasise the two-stage decision process, in which the editorial adviser is asked only to advise and not to decide.

The most lively discussions focused on the consequences that an alteration of the page limits might have, whether shifting papers among the four different journals should be suggested if applicable, who is the 'owner' of a referee's report, how to attract high-quality survey papers for the *Bulletin*, and whether or not papers should be solicited in general. Concerning the main editors, the advantages and disadvantages of collective decisions of a larger set of editors, and the necessity of having the (currently) two editors in the same city (with video conference calls being so easy these days) were considered.

Overall, the atmosphere was very constructive, the interactions fruitful, and the meeting perfectly organised by the LMS staff. Very special thanks go to the LMS Publisher, Susan Hezlet; she was the one who deserved the delightful dinner most, given that the meeting actually took place on her birthday!

Christiane Tretter
University of Bern, Switzerland

Attendees at the BJPT Editorial Advisory Board Meeting 2016

THINKING SPACE

Some notes on making the film

How do mathematicians think? This 60 minute documentary film features nine UK-based mathematicians offering insights into their mathematical thinking across a broad range of mathematical research fields.

Through explorations of their various thought processes, the film portrays mathematicians who are grappling with advanced mathematical ideas. We are presented with the concepts of imagination, intuition, and wonder, as well as rigorous mathematical deduction.

The film was commissioned by the London Mathematical Society for their 150th Anniversary celebrations, and the commission was to make nine interviews with nine prominent UK-based mathematicians. These interviews should reach a general audience whilst also appealing to the mathematical community. The mathematicians featuring in the film were identified by the LMS, and it features Kevin Buzzard, Peter Donnelly, Tim Gowers, Martin Hairer, Roger Penrose, Caroline Series, Richard Thomas, Reidun Twarock and Karen Vogtmann. The interviews were conducted and selected by Martin Hyland, and the film was directed and produced by Heidi Morstang.

I came to this project with an interest of finding out how mathematicians think, and not necessarily what they think about. Before this project, I had not known any mathematicians and it was exciting to embark on something so foreign to my knowledge and usual environment.

Heidi Morstang

It was important that complex mathematical thinking was central in the film, whilst portraying each individual as human as possible yet avoiding the portrayal of mathematicians as stereotypes that feature in many films. The biggest challenge was to make a film that would be interesting to an audience outside the mathematical community. Although advanced mathematical thinking needed to feature in film, it is important to understand that it is not an educational film that has the purpose of teaching mathematics.

What I really wanted to explore, was both interior and exterior spaces; physical as much as mental, imaginary places. The first mathematicians I met, set the tone for how the film further developed. Coming into Imperial College London and seeing the offices of Richard Thomas and Kevin Buzzard were

Professor Sir Roger Penrose

highly inspiring, as they could not be more different. One office was almost an extension of the exterior with open windows, plants, a view and a mathematician who seemed to look outwards, whilst the other office was closed with closed blinds and piles of papers, and a mathematician who perhaps represented an inner world of imagination. The two spaces worked as two opposite worlds, and these spaces became a starting point for looking towards physical spaces as much as *thinking* spaces.

In the pre-production phase, I visited each mathematician to get an initial idea of each person and their space. During these visits, each person was asked 'where and how do you think best?' Their answers differed and the locations vary from woods, the London Tube, office spaces, their home environment - all the locations in the film were suggested by each mathematician.

What I love the most about working with documentaries is the unpredictability of what might emerge during the process, and also working with non-actors. During the work with *Thinking Space*, I was constantly impressed by each individual in the film for his or her naturalness of talking or simply *being* for a length of time. In most of the sequences with the mathematicians, an awareness and appreciation of time and nature also come across as a significant element.

There were several moments that were very special to observe; some feature in the film and some conversations were not recorded but nevertheless informed the film. One of the unexpected moments is when one of the mathematicians encountering a dandelion seed head in a field. Instead of picking up this flower, he simply observed its beauty and let it stay in the field. For me, not only is this small observation a key image to what the film really is all about in terms of observations of the seemingly insignificant and hugely important aspect of time, but also a reminder that sometimes it is better to leave a thought until it is fully developed. What most mathematicians expressed in the film is that sometimes it is a very long process to find the answers – and sometimes it goes beyond a lifetime.

Heidi Morstang
www.hcmorstang.co.uk

Heidi Morstang is an artist working with moving image, photography and experimental documentary film. She works internationally through collaborations with historians and scientists. Her films have been screened at several international film festivals and her photographic works have been exhibited widely since 1995, and is represented in several private and public collections. She lectures in photography at Plymouth University, UK, where she co-convenes Land/Water and the Visual Arts Research Group.

SIR CHRISTOPHER ZEEMAN

Sir Christopher Zeeman, FRS, who was elected a member of the London Mathematical Society on 21 January 1954, died on 13 February 2016, aged 91.

Sir Christopher was LMS Vice-President from 1968-1969 and became the Society's 63rd President from 1986-88. He was awarded the Senior Whitehead Prize of the Society in 1982, and was the Society's first Forder lecturer, in 1987. Sir Christopher also presented the LMS Popular Lecture *The Discovery of Perspective in the Renaissance* in 1983.

Sir Christopher was the Founding Professor of Mathematics at the University of Warwick and was Principal of Hertford College, Oxford from 1988-96. Sir Christopher's contributions to mathematics range from geometric topology to dynamical systems, with applications across the sciences. He is known among the wider scientific public for his contribution to, and spreading awareness of, Catastrophe Theory, and for the 1978 televised Christmas Lectures at the Royal Institution (the first in Mathematics), from which grew the Mathematics Masterclasses for primary and secondary school children that now flourish around the UK.

Sir Christopher was elected as a Fellow of the Royal Society in 1975, and was awarded the Royal Society Faraday Medal in 1988. In 2006, the LMS and the IMA jointly awarded the David Crighton Medal to Sir Christopher in recognition of his long and distinguished service to mathematics and the mathematical community.

In 2008, Sir Christopher presented the first Christopher Zeeman Medal for Communication of Mathematics, named in Sir Christopher's honour and jointly awarded by the LMS and the IMA. The award aims to honour mathematicians who have excelled in promoting mathematics and engaging with the general public.

A private funeral will be held for the family. A service to celebrate Sir Christopher's life will be announced in due course, and there will also be an opportunity to donate to a fund to support young mathematicians, set up in Sir Christopher's name under the auspices of the LMS. He is survived by his wife, Lady Rosemary Zeeman, and his six children.

A full obituary will appear in a forthcoming issue of the *LMS Newsletter*.

MATHEMATICS POLICY ROUND-UP

February 2016

RESEARCH

Research Excellence Framework

The government has asked Lord Nicholas Stern to lead an independent review of the Research Excellence Framework (REF). The review is examining how university research funding can be allocated more efficiently so that universities can focus on carrying out world-leading research.

The review has already received many helpful inputs through the community's response to the Higher Education green paper consultation questions on the REF. A call for evidence has been announced to explore some of the issues raised and investigate ways in which a simpler, lighter-touch, system for the REF might be developed.

More information is available at http://tinyurl.com/jkd4xq3. The consultation closes on 24 March 2016.

HIGHER EDUCATION

Response to Higher Education green paper

The LMS has responded to the consultation on the Higher Education green paper Ful-

filling our Potential: Teaching Excellence, Social Mobility and Student Choice. The LMS response is available at http://tinyurl.com/grglwcp.

SCHOOLS AND COLLEGES

Response to Ofqual consultation

The LMS has responded to the AS and A level Mathematics and Further Mathematics: consultation on conditions and guidance. The LMS response is available at http://tinyurl.com/oj4rg3o.

OTHER

The science budget

The government has published its response to the House of Commons Science and Technology Committee report on the science budget. More information is available at http://tinyurl.com/h4lojp7.

Dr John Johnston
Joint Promotion of Mathematics

PROMYS EUROPE 2016

Following the success of last summer's inaugural PROMYS (Program in Mathematics for Young Scientists) Europe Summer School, plans are now well under way for PROMYS Europe 2016. PROMYS Europe is a partnership of PROMYS (the well-established programme in Boston), the Mathematical Institute at the University of Oxford, the Clay Mathematics Institute and Wadham College, Oxford.

PROMYS Europe 2015 participants

Mathematically ambitious school students (age 16+) will gather in Oxford in the summer for six weeks of stimulating and challenging mathematics. Through their intensive efforts to solve an assortment of unusually challenging and carefully crafted problems in number theory, participants practise the art of mathematical discovery. The problems encourage students to design their own numerical experiments and to employ their own powers of analysis to discover mathematical patterns, formulate and test conjectures, and justify their own ideas by devising their own proofs. Participants are supported and mentored by undergraduates, who also work on their own mathematics during the summer school. Mathematicians from Europe and beyond lead student seminars on advanced mathematical themes, and propose research projects for advanced participants. Visiting mathematicians also give occasional one-off lectures.

Applications are currently open (school students should apply via the website by **31 March**). Anyone interested in learning more about PROMYS Europe should check the website (www.promys-europe.org) and is welcome to get in touch (vicky.neale@maths.ox.ac.uk).

Vicky Neale, University of Oxford
Glenn Stevens, Boston University

LONDON MATHEMATICAL SOCIETY
EST. 1865

LMS 150TH ANNIVERSARY POSTDOCTORAL MOBILITY GRANTS

2016-17 AWARDS

The London Mathematical Society will award grants of up to £7,200 plus a travel allowance to mathematicians of excellent promise. The purpose of the grants is to support a period of study and research in mathematics between three and six months in the academic year 2016-17 at one or more institutions other than the holder's home institution (the holder's home institution may be included for applicants with circumstances that make moving impractical, please visit the website for the full guidelines). They are intended to support promising researchers during the transitional period between having submitted their thesis and the start of their first post-doctoral employment.

The value of the grant will be calculated at £1,200 per month plus a travel allowance.

At the time of the closing date applicants have to be UK residents. Successful candidates must have submitted their thesis within twelve months before the start of their grant period. Grant holders are allowed to teach up to three hours a week. Otherwise they are expected to spend their working time on study and research.

Please read the full guidelines before applying, these are available on the website: lms.ac.uk/grants/postdoc-mobility-grants

Candidates are asked to provide with their application:

- **a completed application form**
- a **cover letter**;
- a **CV** including a list of publications (maximal two A4 pages);
- a **research proposal** including a rationale for the choice of institution(s) to be visited (maximal three A4 pages);
- at least **two letters of reference**, which applicants should request that referees email directly to the LMS (to the email address below) by the closing date;
- and **letter(s) of support** from the host(s) at the institution(s) where the proposed visit will take place; it is expected that host institutions provide the grant holder with office space and access to computing and library facilities.

These grants have been established by the LMS to mark its 150th Anniversary.

Applications should be sent by Thursday 31 March 2016 by email to: pmg@lms.ac.uk

Queries should be referred to Katy Henderson:
pmg@lms.ac.uk
Tel.: +44 (0)20 7927 0809

Applicants will be notified of the outcome of their application in late May 2016.

LONDON MATHEMATICAL SOCIETY
EST. 1865

CECIL KING TRAVEL SCHOLARSHIP

The London Mathematical Society annually awards a £5,000 Cecil King Travel Scholarship in Mathematics, to a young mathematician of outstanding promise. The Scholarship is awarded to support a period of study or research abroad, typically for a period of three months. Study or research in all areas of mathematics is eligible for the award.

The award is competitive and based on a written proposal describing the intended programme of study or research abroad, and the benefits to be gained from such a visit. A shortlist of applicants will be selected for an interview during which they will be expected to make a short presentation on their proposal.

Applicants must be nationals of the UK or the Republic of Ireland, either registered for or having completed a doctoral degree within 12 months of the closing date.

Applications should be made using the form available on the Society's website (**www.lms.ac.uk/prizes/cecil-king-travel-scholarship**) or by contacting education@lms.ac.uk. The closing date for applications is **Monday 6 June 2016.** It is expected that interviews will take place in London in late June or early July.

The Cecil King Travel Scholarship was established in 2001 by the Cecil King Memorial Fund. The award is made by the Council of the London Mathematical Society on the recommendation of the Cecil King Prize Committee, nominated by the Society's Research Meetings Committee.

The London Mathematical Society is a registered charity for the promotion of mathematical knowledge.

THE SUBLIME SYMMETRY EXHIBITION

The De Morgan Foundation announces a new national touring exhibition for 2016 ***Sublime Symmetry:*** the mathematics behind William De Morgan's ceramic designs.

The *Sublime Symmetry* exhibition showcases the work of William De Morgan, the celebrated Victorian Arts and Crafts designer. The exhibition presents over 80 magnificent works, including ceramics from the De Morgan Collection and his designs on paper on loan from the V&A. The pieces have all been chosen to demonstrate the mathematical concepts which are the basis for his beautiful and colourful ceramic designs.

Children and whole families will be able to explore the patterns, shapes and symmetry in De Morgan's elaborately decorated tiles and pots. Making learning mathematics fun, there will be interactive games and a family trail that can be enjoyed by budding mathematicians young and old. The exhibition is supported by an exciting schools programme and teacher information pack aimed at Key Stage 2.

Entry to the family friendly exhibition is either free or included within the standard admission price at each venue.

Peacock Plate
Earthenware dish decorated with a symmetrical design of confronting crowned swans.

Tour venues

6 March to 5 June 2016 at Towneley Hall, Burnley

11 June to 4 September 2016 at Cannon Hall, Barnsley

10 September to 4 December 2016 at Torre Abbey, Torbay

10 December 2016 to 4 March 2017 at the New Walk Gallery, Leicester

12 March to 3 September 2017 at the William Morris Gallery, Walthamstow

The De Morgan Foundation is grateful to the Esmée Fairbairn Collections Fund, the London Mathematical Society and The Art Fund: Jonathan Ruffer Curatorial Grant, who have made the touring exhibition possible with their generous support. The LMS grant has been awarded for the production of a teachers' pack aimed at engaging KS2 mathematics pupils with William De Morgan's ceramic designs. This will be available for free download from the De Morgan Foundation website.

The De Morgan Collection and the De Morgan Foundation

The De Morgan Collection is an unparalleled collection of work by Arts and Crafts ceramicist William De Morgan and his artist wife Evelyn Pickering De Morgan. They were both highly esteemed in their fields. The De Morgan Collection was formed by William De Morgan's sister-in-law, Mrs Wilhelmina Stirling, who provided public access to the works at her home, Old Battersea House in London. After her death in 1965, the De Morgan Foundation was established to care for the collection. The Foundation's drawing and manuscripts archive can be viewed by appointment and access to the De Morgan Collection is provided through a programme of national and international exhibitions and loans.

The De Morgan Foundation is at Curator's House, Watts Gallery Estate, Down Lane, Compton, Guildford, Surrey GU3 1DQ (www.demorgan.org.uk).

William De Morgan

William De Morgan is the eldest son of notable mathematician and logician Augustus De Morgan who was the first President of the London Mathematical Society and from whom his son William inherited a flair for mathematics. William De Morgan is considered to be the most important ceramicist of the Arts and Crafts Movement. He began his artistic career working alongside William Morris and Edward Burne-Jones before opening his own pottery studio in 1872. De Morgan's experiments in ceramic glazes led him to rediscover the lost art of lustre decoration and he excelled at reproducing the brilliant colours associated with Islamic pottery, particularly the bright turquoise which features prominently in his ceramic work. De Morgan was especially inspired by Iznik work of the 16th century and was responsible for installing and repairing the magnificent Arab Hall at Leighton House (Royal Borough of Kensington).

Flamingo and Carnation Tiles

This pattern which dates from the earliest period of De Morgan's pottery is one of the most complex repeat patterns which he designed. The circular forms force the eye up through the pattern and around the individual forms.

WOMEN IN SCIENCE FELLOWSHIPS

Applications are now open for the 2016 L'Oreal-Unesco Women in Science Fellowships. Mathematics was included as an eligible discipline for these awards for the first time in 2015 and the organisers are keen to attract as many applications as possible from female mathematicians. I was asked to be on the judging panel last year in my role as Chair of the LMS Women in Mathematics Committee and will be on the panel again this year.

I was very impressed by the opportunities offered by these fellowships and by the organisation of the application process and the final shortlisting and award ceremony at the Royal Society. It would be fantastic to have more mathematicians applying this year so do consider applying yourself or encourage others to apply.

The fellowships are open to women without a permanent position who have less than 10 years postdoctoral full-time experience. They cover a period of 12 months and offer £15,000 to be used to support the applicant's research career. This money can be used very flexibly to cover a range of costs such as travel and childcare.

Applicants are judged on three criteria: their intellectual ability, the strength of their research proposal, and the difference that the fellowship will make to their career. Shortlisted candidates are invited to give presentations about their research to the judging panel on a day of events held at the Royal Society, culminating with an award ceremony in the evening. The judging is purely based on the three criteria listed above but the day is also great fun and carried out in style. Fellows are not only awarded with money, they also receive training and of course recognition which can be crucial to establishing a successful career.

More details can be found at www.womeninscience.co.uk. Note that the closing date for applications is **Friday 11 March 2016**.

Gwyneth Stallard
Open University

LONDON MATHEMATICAL SOCIETY
EST. 1865

LMS Women in Maths Days 2016

Cambridge and Edinburgh

Friday 15 April
Microsoft Research, 21 Station Road, Cambridge CB1 2FB

Register by contacting womeninmaths@lms.ac.uk (free for students, £5 for others)

This event will focus on mathematics in industry and will include:
- Talks from mathematicians working in and with industry
- Opportunities for early career researchers to give talks
- Poster competition
- Panel discussions on careers in mathematics
- Networking opportunities

For full details of the day please visit lms.ac.uk/womeninmaths

Any postgraduates, postdocs or research assistants interested in giving a talk or presenting a poster should contact Eugenie Hunsicker (E.Hunsicker@lboro.ac.uk).

Friday 22 April
International Centre for Mathematical Sciences, 15 South College Street, Edinburgh EH8 9AA

Register by visiting icms.org.uk (free for students, £5 for others)

This event will focus on mathematics in both academia and industry and will include:
- Talks from mathematicians working in academia and industry
- Opportunities for early career researchers to give talks
- Poster competition
- Panel discussions on careers in mathematics
- Networking opportunities

For full details of the day please visit lms.ac.uk/womeninmaths

Any postgraduates, postdocs or research assistants interested in giving a talk or presenting a poster should contact Tara Brendle (tara.brendle@glasgow.ac.uk).

Limited funds are available for both days to help students with travel costs. Please email womeninmaths@ac.uk for further details.

1865 - 2015

ICMS

Microsoft Research

MATHEMATICAL SCIENCES: DRIVING THE UK ECONOMY

The Council for the Mathematical Sciences (CMS) launched a new report at an event in the House of Commons on 26 January 2016 in the presence of a distinguished audience of MPs, mathematicians and representatives of other STEM organisations. *Mathematical Sciences: Driving the UK Economy* provides evidence from 30 reports published over the past five years from leading organisations such as the British Academy, Royal Society, Council for the Mathematical Sciences, Science Council, Department for Business Innovation and Skills, Institute of Physics, Engineering and Physical Sciences Research Council, Medical Research Council and National Endowment for Science, Technology and the Arts. The report highlights the overriding message of the imperative for increased investment in the Mathematical Sciences people pipeline to enable the UK to capitalise on potential growth and be a leading force in the global economy.

The event was hosted by Stephen Metcalfe MP and included a line-up of notable speakers introduced by Professor Sir Adrian Smith, Chair of the CMS. The speakers were Sir Andrew Dilnot, UK Statistics Authority; Dr Michael Lynch, Council for Science and Technology; Professor Dame Celia Hoyles, UCL Institute of Education; Sir Howard Covington, Chair of the Alan Turing Institute; and Professor Simon Tavaré, Director, Cancer Research UK Cambridge Institute and President, London Mathematical Society. Each presentation gave an eloquent description of the vital part the Mathematical Sciences play across a wide range of scientific areas and education.

The report is available on the CMS website at http://tinyurl.com/hfj2pep.

Professor Sir Adrian Smith, Council for the Mathematical Sciences

Chi Onwurah MP, Shadow Minister (Business, Innovation and Skills)

Sir Andrew Dilnott, UK Statistics Authority

Professor Dame Celia Hoyles, UCL institute of Education

RECORDS OF PROCEEDINGS AT LMS MEETINGS

ORDINARY MEETING, 28-29 NOVEMBER 2015

held in the Great Hall of the People's Palace, Queen Mary University of London, as part of a Joint Meeting with the Institute of Physics and the Royal Astronomical Society, which formed a part of *Einstein's Legacy: Celebrating 100 years of General Relativity* - a celebration of the centenary of the publishing of Albert Einstein's General Theory of Relativity.

The Saturday session began at 11.00 am with The Immediate Past President of the London Mathematical Society, Professor Terry Lyons FRS, in the Chair. An introductory welcome address was given by Professor Malcom MacCallum of Queen Mary University of London. There were over 300 members and visitors in attendance.

There were no members elected to Membership at this Society Meeting.

Five members signed the Member's Book and were admitted to the Society.

There were no Records of Proceedings to approve at this meeting.

Professor Malcom MacCallum introduced a lecture given by Andrew Robinson on the subject of *Not So Sudden Genius* – an overview of the life and circumstances of Albert Einstein.

Dr Richard Staley of Cambridge then gave a lecture regarding *On Thought Experiments, Principles and Their Limits on the Path to General Relativity*.

Lunch was held in The Curve for all those present.

Following lunch, Professor Bangalore Sathyaprakash of Cardiff gave a lecture on *Gravitational Waves: A New Tool for Observing the Cosmos*.

Professor Jim Hough of Glasgow gave a lecture on *The Challenges and Controversies of Experimental Gravity*.

Professor Pedro Ferreira of Oxford then gave a lecture on the subject of *Cosmology for the 21st Century*.

A poster exhibition was held in the People's Palace following Professor Ferreira's lecture, and coffee was hosted in the Senior Common Room of the Queen's Building.

Following the coffee break, Professor John Barrow of Cambridge gave the penultimate lecture of the evening on the subject of *Einstein's Universe of Universes*.

The final lecture of the Saturday session was presented by Professor Sir Roger Penrose of Oxford on *Light Cones, Black Holes, Infinity and Beyond*.

The Sunday session began at 10.25 am, and was opened by Dr Timothy Clifton of Queen Mary University of London, who spoke on behalf of the IOP Gravitational Physics Group AGM.

The first lecture of Sunday was presented by Dr Katy Price of Queen Mary University of London, who spoke on the subject of *First Class Travel in Einstein's Train*.

Professor Ramesh Narayan of Harvard then gave a lecture on *Black Hole Astrophysics*, which was then followed by lunch held in The Curve.

Following lunch, Professor Mihalis Dafermos of Cambridge and Princeton gave a lecture on *The Contribution of Mathematics to General Relativity: Past, Present and Future*.

Professor Mike Duff of Imperial College London gave the penultimate lecture of the Sunday session, on the subject of *M-Theory*.

The final lecture of the Sunday session was presented by Professor Harry Collins of Cardiff, based on the subject of *General Relativity's Sociological Spin Offs*.

RECORDS OF PROCEEDINGS AT LMS MEETINGS

ORDINARY MEETING, 10 DECEMBER 2015

held at the International Centre for Mathematical Sciences (ICMS) in Edinburgh as a joint Meeting with the Edinburgh Mathematical Society to mark 150 years of London Mathematical Society. Over 80 members and visitors were present for all or part of the meeting.

The meeting began at 10.15 am with the Edinburgh Mathematical Society's President, Professor Ian Strachan, in the Chair.

Professor Strachan welcomed guests and handed over to the President of the London Mathematical Society, Professor Simon Tavaré FRS, for the formal business of the LMS.

Professor Tavaré signed the Records of Proceedings of the previous Society Meeting in September 2015.

No members were elected to Membership.

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

Professor Tavaré then handed over to Professor Strachan for the formal business of the EMS.

Professor Strachan then introduced a lecture given by Professor Eva Tardos titled *Learning, inference, and efficiency in games*.

Professor Strachan, President of the Edinburgh Mathematical Society, presenting a silver Quaich to Professor Simon Tavaré, President of the London Mathematical Society

There were further lectures during the day by Jacek Brodzki *Joining the dots: mathematics of data;* Ilias Diakonikolas *Algorithmic aspects of inference;* Marian Scott *Size is not all that matters - scale, variety and complexity of BIG data* and Igor Rivin *Zeolites, experimental mathematics, and other potential applications of data science.*

Later that evening, a reception was hosted by the Edinburgh Mathematical Society in The Chapterhouse at the ICMS.

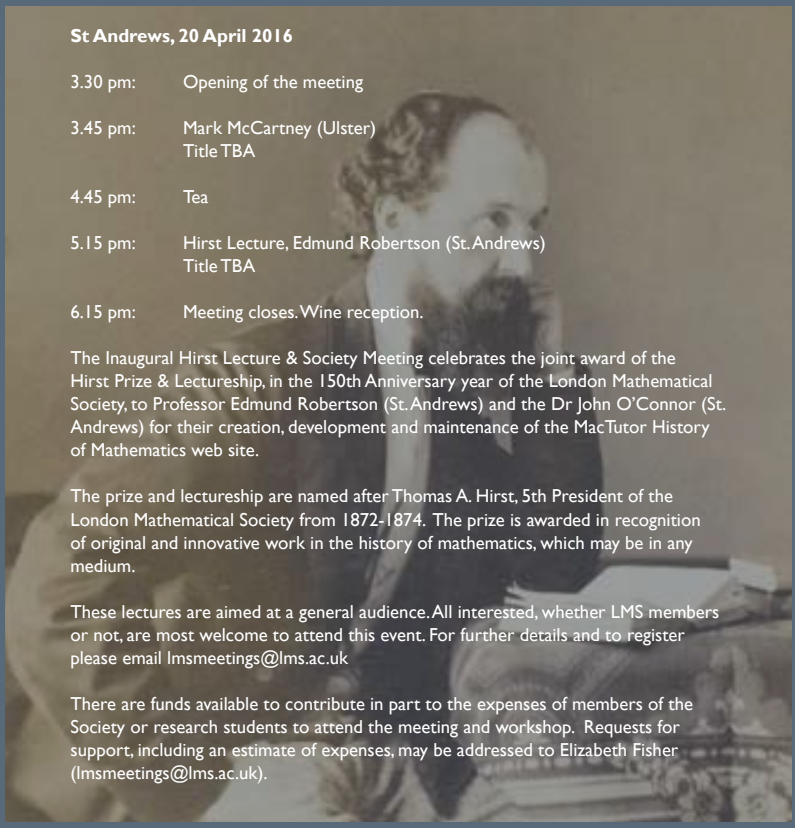
During the reception, the Edinburgh Mathematical Society's President, Professor Ian Strachan, presented a silver Quaich to the President of the London Mathematical Society, Professor Simon Tavaré, on the occasion of the 150th Anniversary of the London Mathematical Society.

The Society dinner was held at the Magnum Restaurant.

The Joint Meeting closed on Friday 11 December 2015.

LONDON MATHEMATICAL SOCIETY
EST. 1865

Inaugural Hirst Lecture & Society Meeting



St Andrews, 20 April 2016

3.30 pm:	Opening of the meeting
3.45 pm:	Mark McCartney (Ulster) Title TBA
4.45 pm:	Tea
5.15 pm:	Hirst Lecture, Edmund Robertson (St. Andrews) Title TBA
6.15 pm:	Meeting closes. Wine reception.

The Inaugural Hirst Lecture & Society Meeting celebrates the joint award of the Hirst Prize & Lectureship, in the 150th Anniversary year of the London Mathematical Society, to Professor Edmund Robertson (St. Andrews) and the Dr John O'Connor (St. Andrews) for their creation, development and maintenance of the MacTutor History of Mathematics web site.

The prize and lectureship are named after Thomas A. Hirst, 5th President of the London Mathematical Society from 1872-1874. The prize is awarded in recognition of original and innovative work in the history of mathematics, which may be in any medium.

These lectures are aimed at a general audience. All interested, whether LMS members or not, are most welcome to attend this event. For further details and to register please email lmsmeetings@lms.ac.uk

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 Elizabeth Fisher (lmsmeetings@lms.ac.uk).

LONDON MATHEMATICAL SOCIETY
EST. 1865

GRESHAM COLLEGE
Founded 1597

THE LONDON MATHEMATICAL SOCIETY
JOINTLY WITH GRESHAM COLLEGE

Tuesday, 24 May 2016

6:00pm at The Museum of London

Mathematics, Measurement and Money

Professor Norman Biggs

London School of Economics

Throughout its brief history, mathematics has been closely linked with measurement and money. In the ancient settlements the rules of arithmetic and geometry were used to solve problems about the allocation of food and resources. When life became more complex, the use of coined money led to computational problems that required good algorithms for their solution.

Nowadays we rely on mathematics for security, and the links between information and money have become blurred. Can mathematics keep us safe?

ADMISSION FREE

NO RESERVATIONS REQUIRED – FIRST COME, FIRST SERVED

Museum of London, London Wall, London EC2Y 5HN
Nearest underground stations: Barbican, St Paul's, and Moorgate

020 7831 0575 enquiries@gresham.ac.uk www.gresham.ac.uk

PLÜCKER COLLECTION

The London Mathematical Society possesses a series of 14 wooden models of quartic surfaces constructed under the direction of Professor Julius Plücker, in illustration of the theory developed in his posthumous work, *Neue Geometrie des Raumes gegründet auf die Betrachtung der geraden Linie als Raumelemente, Leipzig,* 1869.

The circumstances surrounding the donation of the boxwood models are described in letters from Julius Plücker to Thomas Archer Hirst written during 1866 and 1867 (http://tinyurl.com/jts33jg). The models themselves are described by Arthur Cayley in his paper *On Plücker's Models of certain Quartic Surfaces,* published in the *Proceedings of the London Mathematical Society* (1869) s1-3 (1): 281-285.

Images of all 14 of the Plücker boxwood models are shown below. They are currently on display at the Society's Headquarters; De Morgan House, 57-58 Russell Square.

The photographs are shown with permission of the Science Museum, where the models were on display until 2015.

LONDON MATHEMATICAL SOCIETY
EST. 1865

LMS Invited Lecturer 2016

Professor Edgar Knobloch (UC Berkeley)
Dynamics, Patterns and Spatially Localised Structures

21-25 March 2016
Loughborough University, Department of Mathematical Sciences

In a series of 10 lectures Professor Knobloch will describe and illustrate recent progress in understanding the origin and properties of spatially localised structures formed in dissipative, pattern-forming systems such as the Swift-Hohenberg equation. He will provide a mathematical and a physical explanation of homoclinic snaking of stationary states and related results for spatially localised temporal oscillations. He will use the theory to develop an understanding of similar phenomena observed in fluid dynamics, reaction-diffusion systems and nonlinear optics.

There will also be supplementary lectures by:

Daniele Avitabile (Nottingham), *Numerical computation of coherent structures in spatially-extended systems*
Claude Baesens (Warwick), *Bifurcations of flows on the two-torus*
Thomas Bartsch (Loughborough), *Introduction to transition state theory*
Anatoly Neishtadt (Loughborough), *Slow-fast dynamical systems*
Alastair Rucklidge (Leeds), *Introduction to pattern formation*
Uwe Thiele (Münster), *Dynamics of soft matter systems: evolution equations and the bifurcations of depinning transitions*

Participants are invited to contribute further lectures or posters.

University accommodation will be available. Also, limited financial support is available with preference given to UK research students. Please contact one of the organisers for further details: Thomas Bartsch (T.Bartsch@lboro.ac.uk), Andrew Archer (A.J.Archer@lboro.ac.uk) or Anatoly Neishtadt (A.Neishtadt@lboro.ac.uk). Deadline for funding: 19 February 2016

For further details on the 2016 Invited Lectures please visit www.lms.ac.uk/events/lectures/forthcoming-lms-invited-lecturer and www.lboro.ac.uk/lms-2016

LONDON MATHEMATICAL SOCIETY
EST. 1865

Society Meeting at the BMC 2016

University of Bristol, 21-24 March
5:15pm Society Meeting (21 March)
Public Lecture: Kirsten Lauter (Microsoft Research)
This Society Meeting is part of the British Mathematical Colloquium 2016. The full conference will also include a special lecture by Hendrik Lenstra and plenaries given by Robert Adler, Luigi Ambrosio, Maria Chudnovsky, Alex Lubotzky, Peter Sarnak and Amie Wilkinson.

Workshops (Tue & Wed afternoon)
Algebra (organisers: Tim Burness, Jeremy Rickard)
Analysis (organisers: Michiel van den Berg, John Mackay)
Combinatorics (organisers: Thomas Bloom, Julia Wolf)
Ergodic Theory (organisers: Thomas Jordan, Corinna Ulcigrai)
Number Theory (organisers: Andrew Booker, Tim Browning)
Probability (organisers: Márton Balázs, Bálint Tóth)

Speed talks (Wed 5-6pm) & posters
In the spirit of Radio 4's 'Just A Minute', there will be a session of 5-minute talks, allowing early career researchers, including PhD students, to showcase some of their mathematics. If you would like to give a speed talk, please apply at http://ow.ly/VmRkO. If you would like to present a poster at the BMC, please apply at http://ow.ly/VmRsD.

Satellite meetings (Thu afternoon), Research Groups supported by LMS Scheme 3 grants
Ergodic theory, organisers Thomas Jordan, Corinna Ulcigrai
COW Algebraic Geometry, organiser Hamid Ahmadinezhad
BLOC Representation Theory, organisers Neil Saunders, Jason Semeraro, Nicole Snashall
For further details and registration, please visit http://www.maths.bris.ac.uk/~matyd/BMC/ Early bird registration is now open and closes on 1 February 2016. The cost of registration will be £75 and £40 for students. The venue and time of the dinner is to be confirmed.

Accommodation in Bristol is also available, but it is advised you book early to avoid disappointment. A list of hotels can be found here: http://ow.ly/VmRA3

Institute of mathematics & its applications

LONDON MATHEMATICAL SOCIETY EST. 1865

The David Crighton Lecture

Professor Frank Kelly CBE FRS

Thursday 12 May 2016 at 6.15 p.m. followed by a reception at The Royal Society, Carlton House Terrace, London, SW1Y 5AG

Registration will open at 5.45 p.m.

Mathematics and Financial Markets

Abstract: *A substantial proportion of mathematics graduates, at both first degree and doctoral level, enter the financial services sector. This is hardly surprising given the importance of the sector to the economy, and the role of mathematical modelling in the valuation of instruments and the assessment of risk. What is striking is that, with some notable exceptions, few mathematicians have been actively engaged in the design of financial markets. This is undoubtedly a serious challenge with parallels from other large-scale complex networks: to design a distributed system, linking self-interested and intelligent agents, so that the outcome is effective and efficient.*

How would an ideal market operate, to allow liquidity between long-term investors to be provided by short-term traders? In the second part of the talk I outline some preliminary work, joint with Elena Yudovina, on this question. I describe a simplified and analytically tractable model of a limit order book where the dynamics are driven by stochastic fluctuations between supply and demand. The model has a natural interpretation for a highly traded market on short time scales where there is a separation between the time scale of trading, represented in the model, and a longer time scale on which fundamentals change.

There has been considerable discussion recently of the effects of competition between multiple high-frequency traders, and of proposals aimed to slow down markets. A key issue is that traders may compete on the speed with which they can snipe an order rather than compete on price, and a proposed regulatory response is to use frequent batch auctions. Our model is clearly a caricature of a real limit order book, but it does provide insight into various high-frequency trading strategies (for example market-making, sniping and mixtures of these) and the impact on Nash equilibria when a market in continuous time is replaced by frequent batch auctions.

Professor Frank Kelly will be presented with the David Crighton Medal which is awarded biennially, for services both to mathematics and to the mathematical community, by the Institute of Mathematics and its Applications, and the London Mathematical Society.

Admission to the lecture and reception is by ticket only.
For tickets please contact Alison Penry at the IMA, Catherine Richards House, 16 Nelson Street, Southend-on-Sea, SS1 1EF or email alison.penry@ima.org.uk by 24 April 2016. Tickets are free of charge and will be allocated on a first come, first served basis.
Please confirm whether you wish to attend the lecture and reception, or the lecture only.

Heilbronn Institute for Mathematical Research

2016 Distinguished Lecture Series

Peter Sarnak IAS

Titles to be confirmed

Tue 15 March
16.30 Colloquium

Lecture Theatre Two
Chemistry Building

Followed by a wine reception in the Chemistry Foyer from 17.30

Wed 16 March
16.30

Lecture Theatre Two
Chemistry Building

Preceded by coffee in the Chemistry Foyer from 16.00

Thu 17 March
16.30

Lecture Theatre Three
Chemistry Building

Preceded by coffee in the Chemistry Foyer from 16.00

Travel for PhD Students
Support for travel for UK PhD students may be available. Please contact us using the email below with any requests by 29 February 2016.

Funding for Child Care
We are pleased to announce that we are able to award funding to support child care costs for dependents under the age of 14. Please contact us using the email below for further details.

heilbronn-coordinator@bristol.ac.uk
bristol.ac.uk/maths/events

University of BRISTOL

VISIT OF DANA SCOTT

Professor Dana Scott (Carnegie-Mellon and Berkeley) will visit the UK on a lecture-tour in May 2016. A Turing Prize-winner and recipient of many other international awards, Professor Scott is a highly distinguished mathematical logician who, in a long career, has made fundamental contributions to set theory, model theory, and the theory of computation (domain theory is his creation). During his visit he will lecture on various topics related to these areas. His itinerary will take in the universities of:

- Oxford, 7-11 May
- Birmingham, 11- 15 May
- Leeds, 15-19 May
- Cambridge, 19-24 May
- Queen Mary, Imperial and University College London, 24-28 May

Professor Scott will give seminar talks and several distinguished lectures, among them the Löb Lecture in Leeds and the Mordell Lecture in Cambridge. Further details will appear in the April issue of the *LMS Newsletter*. The visit, organised by Stan Wainer (S.S.Wainer@leeds.ac.uk), is supported by an LMS Scheme 2 grant.

VISIT OF LÁSZLÓ FEHÉR

Professor László Fehér (University of Szeged, Hungary) will be visiting the UK between 15 and 24 April 2016. Professor Fehér is a leading expert in the area of mathematical physics and integrable systems. His work uses symplectic geometry and Lie theory to study classical integrable systems, including the Calogero-Moser system and its relativistic analogues. During his visit Professor Fehér will lecture at:

- University of Leeds, Integrable Systems seminar, 18 April (contact Allan Fordy: A.P.Fordy@leeds.ac.uk)
- Loughborough University, Mathematical Physics seminar, 20 April (contact Alexander Veselov: A.P.Veselov@lboro.ac.uk)
- University of York, Mathematical Physics seminar, 21 April (contact Eli Hawkins: eli.hawkins@york.ac.uk)

Further details of these arrangements may be obtained from Oleg Chalykh (o.chalykh@leeds.ac.uk). The visit is supported by an LMS Scheme 2 grant.

VISIT OF ANTHONY TO-MING LAU

Professor Anthony To-Ming Lau (University of Alberta, Edmonton) has been appointed as a Distinguished Faculty Visitor to the Department of Mathematics and Statistics at Lancaster University.

As part of this appointment Professor Lau will visit the Department from Monday 16 to Friday 27 May 2016. He will give lectures on the topic *Introduction to the Fourier and Fourier-Stieltjes algebras of a locally compact group* in the A54 Lecture Theatre in the Postgraduate Statistics Centre at the following times:

- Wednesday 18 May – 11 am to 12 pm
- Thursday 19 May – 2 pm to 3 pm
- Friday 20 May – 10 am to 11am
- Friday 20 May – 2 pm to 3 pm

Professor Lau will also give a Department Colloquium on *Finite dimensional invariant subspace properties* at 2 pm on Wednesday 25 May.

All are welcome. Modestly priced accommodation is available on campus and can be booked at http://tinyurl.com/zr44z59. For enquiries contact H.G. Dales (g.dales@lancaster.ac.uk).

VISIT OF ALEXEI SOSSINSKY

Professor Alexei Sossinsky (Higher Mathematics College, Independent University of Moscow; French-Russian Poncelet Laboratory CNRS-IUM) will be visiting the UK between 20 and 30 April 2016. Professor Sossinsky is one of the world leading researchers in low-dimensional topology. His books on knots, braids and three-dimensional manifolds have been translated to many languages. Details of Professor Sossinsky's talks during his visit are:

- Thursday 21 April, University of Liverpool
  Normal form of knots via knot energy (contact Oleg Karpenkov: karpenk@liv.ac.uk)
- Monday 25 April, University of Durham
  Minima of the Euler functional on plane curves (contact Anna Felikson: anna.felikson@durham.ac.uk)
- Thursday 28 April, University of Warwick
  Tolerance space theory: does it have a future? (contact David Mond: d.m.q.mond@warwick.ac.uk)

Further details of these arrangements may be obtained from Oleg Karpenkov (karpenk@liv.ac.uk). The visit is supported by an LMS Scheme 2 grant.

7ECM AT A GLANCE

The quadrennial congress of the European Mathematical Society will take place from 18 to 22 July 2016 at the Technische Universität Berlin. It is organized by the German Mathematical Society (DMV), the International Association of Applied Mathematics and Mechanics (GAMM), the Research Center MATHEON, the Einstein Center ECMath and the Berlin Mathematical School (BMS).

Scientific Program: The program covers all areas of theoretical and applied mathematics. There will be 10 Plenary Lectures, 31 Invited Lectures, several Prize Lectures (10 EMS Prizes, the Otto Neugebauer Prize, and the Felix Klein Prize). Additionally, mathematicians from all over the world were invited to submit proposals for mini-symposia. The decisions have been made and 43 mini-symposia proposals have been accepted.

Special Lectures and Sessions: For the first time in the history of the ECM one of the Abel Laureates, Endre Szemerédi (Alfréd Rényi Institute of Mathematics) will give an Abel Lecture to the 7ECM participants.

Don Zagier (Max-Planck-Institute for Mathematics, Bonn) will hold the Friedrich Hirzebruch Lecture in honor of the first President of the EMS.

Peter Scholze (Universität Bonn), who was recently awarded the Gottfried Wilhelm Leibniz Prize and who is also among the ten plenary speakers, will give an additional lecture for a broad audience particularly directed towards high school students.

The Public Lecture on *Mathematics in Modern Architecture* by Helmut Pottmann (Technische Universität Wien) is open for everyone with an interest in mathematics.

A dedicated History Session with lectures on Leibniz, Lagrange, Euler and Weierstraß will highlight the mathematical history in Berlin.

European Women in Mathematics: The association European Women in Mathematics (EWM), jointly with the EMS Women in Mathematics Committee, is organizing a special event (www.7ecm.de/program/ewm.html) aiming at celebrating and giving prominence to female mathematics of excellence in Europe. The program comprises a scientific as well as cultural program including the exhibition *Women Mathematicians around Europe. A Gallery of Portraits* curated by Sylvie Paycha (Potsdam University).

Satellite Events: So far more than ten events have been granted the 7ECM satellite events status. Participants of the 7ECM will enjoy some privileges in registering for the satellite events.

Sponsorship and Math Career Day: The 7ECM offers great opportunities for academia and industry to liaise. As a publishing house or a specialized company you may want to maximize your visibility before, during and after the congress through several sponsorship opportunities. If recruiting top talents with exceptional analytical skills is a core task for your company, then take part in the 7ECM Math Career Day (21 July) in Berlin. Details for the Math Career Day and further sponsorship can be found on the website or contact office@7ecm.de.

Social Program: The 7ECM is also a great opportunity to meet and greet old and new

colleagues. Participants are warmly invited to enjoy the uniqueness of the Palais am Funkturm where the conference dinner (July 20 starting at 8 pm) takes place. Vegetarian options are of course available. Kosher food is available upon pre-order. On the first day of the congress a welcome reception will be held in the evening.

Cultural Program: On the occasion of the 7ECM the exhibition *Transcending Tradition* curated by the History of Science Working Group at the Goethe University will be shown at the Jewish Museum. The exhibition explores the working lives and activities of Jewish mathematicians in German-speaking countries between the legal and political emancipation of the Jews in the 19th century and their persecution in Nazi Germany. An opening ceremony will be held on Sunday 17 July. Keynote speaker is Liba Taub (Whipple Museum of the History of Science, University of Cambridge). Advance registration is required. The Alfried Krupp von Bohlen und Halbach-Stiftung contributes largely to bringing the exhibition to Berlin during the 7ECM.

The 7ECM is complemented by a MathFilm Festival - an international competition for films and videos about mathematics – organized by Konrad Polthier. A representative selection of films will be shown during 7ECM in Berlin.

The interactive touring exhibition IMAGINARY will be presented at the main building of TU Berlin (Lichthof). IMAGINARY creates a virtual reality by means of visualizations and interactive installations. It aims to explain different aspects of modern mathematics - for example algebraic geometry, singularity theory or simulations of fluids - in an attractive and comprehensive way.

Books: All participants will receive the guidebook *Mathematical Berlin* by Iris and Martin Grötschel and the essay collection *Mathematics in the Society of the Future* edited by Wolfgang König as a welcome gift.

For up-to-date information subscribe to the newsletter at www.7ecm.de/newsletter.html.

ALGEBRAIC COMBINATORICS AND GROUP ACTIONS

A conference on *Algebraic Combinatorics and Group Actions* will be held from Monday 11 to Friday 25 July 2016 at Herstmonceux Castle in East Sussex. The conference will bring together active researchers in fields related to algebraic combinatorics and its interactions with group actions. Topics will include the impact of the finite simple group classification on advances in algebraic combinatorics, representation theory, applications in number theory, symmetric functions and other polynomial invariants, matroids and polytopes. The keynote speakers for the conference are:

- Bob Guralnick (Southern California)
- Vic Reiner (Minnesota)

More information can be found at http://tinyurl.com/zpt2wdu. Those interested in participating should email wehlau@rmc.ca. Facilities at Herstmonceux Castle have limited participation to 60 people. Once this limit has been reached a reserve list will be maintained in case of cancellations. Some money is available to support UK based PhD students.

The meeting is supported by an LMS Conference grant, the Fields Institute for Research in Mathematical Science, the Heilbronn Institute for Mathematical Research and the Tutte Institute for Mathematics and Computing.

CLAY RESEARCH CONFERENCE AND WORKSHOPS

The 2016 Clay Research Conference will be held on 28 September 2016 at the Mathematical Institute of the University of Oxford. Associated workshops will be held throughout the week of the conference from 26 to 30 September:

- *Geometric Representation Theory* (Iain Gordon, Kobi Kremnitzer and Raphael Rouquier)
- *Algebraic Geometry: Old and New* (Alessio Corti, János Kollár, Miles Reid and

Nick Shepherd-Barron)
- *Mean Curvature Flow* (Tobias Colding and Bill Minicozzi)
- *Recent Developments on Elliptic Curves* (Manjul Bhargava, Henri Darmon and Chris Skinner)

Registration for the Clay Research Conference is free but required. Participation in the workshops is by invitation; a limited number of additional places is available. Limited accommodation is available for PhD students and early career researchers. For more information email Naomi Kraker (admin@claymath.org). For full details, including the schedule, titles and abstracts when they become available, see www.claymath.org.

BRAG MEETING

The second *British Algebraic Geometry* meeting (BrAG) will take place at the School of Mathematics, University of Edinburgh from 13 to 15 April 2016. BrAG is a series of regular meetings of British algebraic geometers. The goal is to create a series that further strengthens the British algebraic geometry community, and that integrates PG students and young researchers. The meetings feature a number of pre-talks for graduate students, a poster session, and include plenty of time for informal interactions between the participants. The speakers are:
- Christian Böhning (Warwick)
- Serge Cantat (Rennes)
- Lucia Caporaso (Roma Tre)
- Jean-Pierre Demailly (Grenoble)
- Gavril Farkas (HU Berlin)
- Cristina Manolache (Imperial)
- John Ottem (Oslo)
- Nick Shepherd-Barron (King's College London)
- Michael Wemyss (Edinburgh)

For further information, including how to register, see the meeting website https://sites.google.com/site/bragmeeting. The meeting is supported by an LMS Conference grant, the Edinburgh Mathematical Society, the Glasgow Mathematical Journal Trust, and the School of Mathematics of the University of Edinburgh.

NEW TRENDS IN NONLINEAR PDES

The conference *New Trends in Nonlinear PDEs: From Theory to Applications* will take place at Cardiff School of Mathematics, Cardiff, Wales from 20 to 24 June 2016. The aim of the meeting is to get together mathematicians within recently very active research areas connected to nonlinear partial differential equations, in particular where these cross boundaries of mathematical disciplines. More specifically, some of the areas the conference will focus on are:
- Recent advances in degenerate PDEs and their applications
- Nonlinear PDEs and probability
- The important role analysis of PDEs can play for material science
- Connection with game theory and models in social sciences
- PDEs which change type

For registration and a list of speakers see http://sites.maths.cf.ac.uk/ntn lpde16/. The conference is partially funded by an LMS Conference grant.

The LMS has granted some funds for research students studying at universities in the UK who do not have other means of support. When registering online specify that you are applying for support.

NORTH BRITISH FUNCTIONAL ANALYSIS SEMINAR

A meeting of the *North British Functional Analysis Seminar* (NBFAS) will be held at Lancaster University on Friday 1 and Saturday 2 April 2016. The distinguished speakers will be:
- Claire Anantharaman-Delaroche (Université d'Orléans) *From groups to semigroups and groupoids: weak containment versus amenability by examples*
- Matthew Kennedy (University of Waterloo) *Boundaries, injectivity and C*-simplicity*

Further details on the programme including abstracts of the talks are available on the NBFAS website at http://www1.maths.leeds.ac.uk/nbfas/ and from Dr Yemon Choi (y.choi1@lancaster.ac.uk). NBFAS is partly supported by an LMS Scheme 3 grant.

YOUNG APPLIED ANALYSTS IN THE UK

The second workshop *Young Applied Analysts in the UK* will take place at the University of Bath from 26 to 27 May 2016. This is the follow-up to a meeting that took place at the University of Glasgow in May 2014. José Antonio Carrillo de la Plata (Imperial College London) will give a plenary lecture. In addition there will be 14 invited talks, predominantly by early career researchers, and a session of invited talks by PhD students.

The main purpose of the meeting is to bring together young researchers from UK universities working in applied analysis, in particular in the area of mathematical materials science. This meeting aims at encouraging collaboration and networking, and at increasing the visibility of this growing applied analysis community.

For more information see the conference website at http://people.bath.ac.uk/ls767/YAAUK2.html. The workshop is supported by an LMS Conference grant and the Edinburgh Mathematical Society.

BAMC 2016

The British Applied Mathematics Colloquium 2016 (BAMC) will take place from 5 to 8 April 2016, at the Mathematical Institute, University of Oxford. Six plenary lectures will be given by Danielle Bassett, Martin Bazant, Steven Cowley, David Donoho, Anette Hosoi and Detlef Lohse, and 16 mini symposia on a broad variety of topics from applied mathematics. There will also be a public lecture by Andrea Bertozzi on *The Maths of Crime*.

Graduate students are particularly encouraged to participate and there will be prizes for the best talks and the best posters. For more information see the conference website at www.maths.ox.ac.uk/BAMC2016. The Colloquium is supported by an LMS Conference grant.

ADVANCES IN NUMERICAL AND ANALYTIC APPROACHES FOR THE STUDY OF NON-SPATIAL STOCHASTIC DYNAMICAL SYSTEMS IN MOLECULAR BIOLOGY

Isaac Newton Institute for Mathematical Sciences

4 – 8 April 2016

in association with the Isaac Newton Institute programme
Stochastic Dynamical Systems in Biology: Numerical Methods and Applications
(4 January – 24 June 2016)

This workshop focuses on numerical methods and mathematical analysis for non-spatial stochastic dynamical models that arise in molecular biology. New experimental techniques at a molecular level boosted the interest for such models in recent years, for example for gene regulatory networks, biochemical signaling and transduction cascades, molecular motors, and morphogenesis. The workshop brings together computational, mathematical, and experimental scientists, with attention falling on both current research and promising avenues for future research. It reports on the exciting synergistic interplay between advanced experimental, computational, and mathematical techniques that together provide a deeper understanding of the biological system.

Further information available from the website:
www.newton.ac.uk/event/sdbw03



Mathematics Emerging:

A tribute to

Jackie Stedall

and her influence on the history of mathematics

A two-day BSHM meeting at The Queen's College, Oxford, on Saturday 9 April and Sunday 10 April 2016.

The meeting will focus broadly on sixteenth and seventeenth century history of European contributions to, or developments in, algebra, analysis and geometry, with a mixture of general interest sessions and more specialist research topics. The meeting will start at 11:00 on Saturday 9 April and should finish at about 15:30 on Sunday 10 April. The Sunday morning session will focus on Thomas Harriot. There will be a reception and conference dinner in The Queen's College Hall on the Saturday evening.

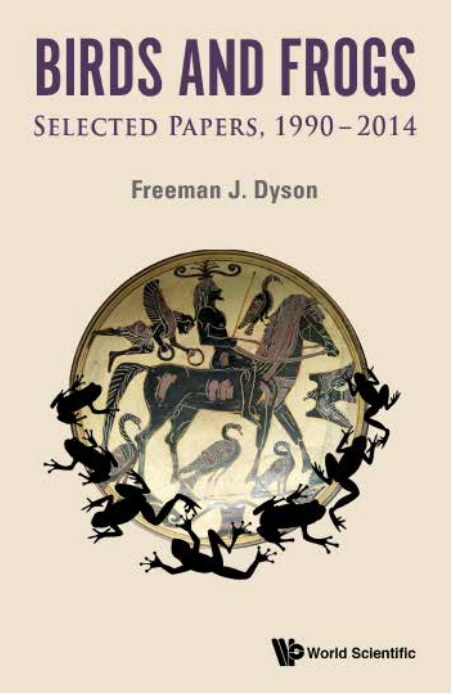
Speakers include:

- Philip Beeley (Oxford);
- Rosie Cretney (Oxford);
- Robert Goulding (University of Notre Dame, USA);
- Niccolò Guicciardini (University of Bergamo, Italy);
- Karen Parshall (University of Virginia, USA);
- Eleanor Robson (University College London);
- Matthias Schemmel (Max Planck Institute, Berlin, Germany);
- Thomas Sonar (Technische Universität Braunschweig, Germany);
- Benjamin Wardhaugh (Oxford).

Register interest at http://www.bshm.ac.uk/events

BIRDS AND FROGS Selected Papers of Freeman Dyson, 1990–2014

by Freeman Dyson, World Scientific, 2015, 376 pp, hb £38.00, ISBN 978-9814602-853, pb £18.00, ISBN: 978-9814602860.



Birds and Frogs comprises a collection of essays and papers written by Freeman Dyson during the period 1990-2014. This book is a sequel to an earlier volume of selected papers by Dyson that was published by the American Mathematical Society in 1996.

Freeman Dyson was born in England in 1923; his father was the well-known composer Sir George Dyson. Dyson was educated at Winchester College and studied mathematics at Cambridge after serving in the RAF during the war. He moved to the USA after his doctorate and has been a member of the Institute of Advanced Study in Princeton since 1953. Dyson is a theoretical physicist and mathematician, known in particular for his work in particle physics, nuclear engineering, condensed matter physics and number theory.

The articles in *Birds and Frogs* are grouped by four themes: talks about science, memoirs, politics and technical papers. The title of the volume is taken from a lecture given to the American Mathematical Society in 2008. According to Dyson, some mathematicians are birds while others are frogs. Birds survey broad vistas of mathematics from the air while frogs see only their immediate vicinity, although they see the latter in great detail. Dyson describes himself as a frog (although I think most of his colleagues would not agree) but argues that both birds and frogs are needed to explore the full breadth and depth of mathematics.

This volume covers many topics in mathematics, physics, history and politics. The personal memoirs of scientific giants such as Chandrasekhar, Fermi and Wheeler are fascinating, as is Dyson's account of his time working in the operational research section of the RAF during World War II. The final article (written in 2013 when Dyson was 90) explores whether any experiment could detect single gravitons to show that gravity is indeed a quantized theory.

Dyson is known for having a contrarian streak and the opinions expressed in these articles are at times controversial and indeed even subversive. In my own field of particle physics there are also some minor factual errors scattered throughout the essays: for example, in the essay *Birds and Frogs* Dyson massively over-estimates the number of string theorists while in "The Current State of Physics" he does not accurately survey the current landscape of particle physics experiments.

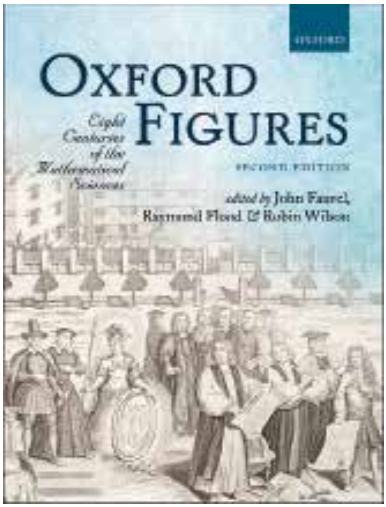
Overall this volume is perhaps most interesting for the insights it gives into the thoughts of Freeman Dyson himself: he might describe himself as a frog but many would view him as one of the greatest birds of mathematics and science.

Marika Taylor
Southampton

OXFORD FIGURES

edited by John Fauvel, Raymond Flood, Robin Wilson, Oxford University Press, 2015, 2nd edition, 304 pp, £41.99, US$70.00, ISBN-13: 978-0199681976..

Oxford Figures describes Mathematics within Oxford University over eight hundred years, both as a discipline and by discussion of many of those who have formed the "mathematical community" within the University. In part it involves the history of the University and the core place of mathematics and astronomy; on the other, there are quite detailed accounts of the lives of some of the more prominent figures. This second edition contains an added contribution on the major changes that have taken place over the past thirty years, setting firmly in place the more leisurely pace of a century ago.



It really needs a genuine historian of mathematics to do justice to a book such as this, and I am not one. In some sense, I fall the other side of the divide in having more interest in what gave rise to particular ideas, once described to me by an undergraduate explaining why he wished to change his studies from history to PPE. I was, however, persuaded to write this review because I am an Oxford man, and I took the book to read on a cruise.

Six months later, what is my impression? Putting aside the last hundred or so years, any historian of British mathematics has a problem when writing for a wide audience. Most of the great mathematical figures came from Continental Europe. Apart from Newton (and perhaps Charles Dodgson, though for a different reason), few will be able to name any significant British mathematicians other than those who are associated with theorems that bear their names. Unfortunately, Taylor was a Cambridge man, and Maclaurin a Scot. So the authors have a greater problem when writing about Oxford mathematicians. Wallis was the most prominent Oxford mathematics professor before Sylvester, but I confess not to have heard of him until his name was attached to a chair. But beyond the reference to his having first introduced the term "continued fraction", we are not told here either what inspired that concept, or what actual expression Brouncker then gave for using it.

When confined to mathematicians, the contributors are left with a number of lesser figures who, nevertheless, may have had significant roles to play during the tenure of their chairs and were interesting to study precisely because little of what was known was well coordinated within an Oxford setting. The most significant mathematician produced by Oxford seems to be a certain Thomas Harriot who left over 10000 pages of manuscript that were lost for over two hundred years. Unfortunately, attempts to produce editions of his work have so far floundered, even though he is described as "England's only world-class mathematician in the two or three centuries leading up to Newton", and this book offers little to justify this particular claim which seems at odds with a later comment on Wallis' influence on Newton.

Wallis was one of the seventeenth century holders of the Savilian Chair of Geometry, established by Henry Saville along with a chair in Astronomy. Clearly the two subjects were closely interwoven, and several men held first one chair and then the other. But it is this link that produces one of the more fascinating aspects of this book and which I found the most enjoyable to read, though it also poses one conundrum. The two chairs were established and filled before the Sedleian Chair of Natural Philosophy – why then does Oxford University view the Sedleian Chair as its oldest scientific chair? A question for the next edition!

The discussion of the nineteenth century is also fascinating since it represents the period when the University came to grips with its need to educate. The excerpts from examination papers of the time are revealing. At one level, one can ask what it was permissible to assume when answering the questions; on another, I simply observe that three of the six questions reproduced from a Finals paper set in the 1850s would be fair game as entrance interview questions today.

Moving to the present, there is an illuminating chapter of reminiscences by Michael Atiyah, while this second edition has added a chapter surveying recent developments. To this, I will add a personal comment. Oxford over the last fifty years has changed vastly, though to an outsider it may seem that little may have changed; fifty years ago mathematics had much the structure of an arts subject, while now it ranks at the pinnacle of scientific research. However, some of the past remains. I well remember Ioan James telling me when he was my tutor that he didn't think that the tutorial system could survive for more than twenty five years; fifty years later, it is still there, albeit in a modified form. Tutors still have responsibility for their pupils, though the faculty now comes from around the world rather than predominantly from Oxbridge, so I may be amongst the last to have as many as four of my undergraduate pupils current fellows of Oxford colleges, of whom three (two now computer scientists) are at my own. But this is in keeping with the theme that runs through the book. Oxford mathematics has evolved because of, rather than in spite of, its continuity.

The book finishes with a list of all holders of the named chairs and a formidable list for further reading. The index, unfortunately, is less useful. Every person mentioned in the text is listed, though sometimes, for example Hausdorff, only through a reference to a theorem that bears his name. What would be useful would be an index of mathematical terms so that one could find a topic without needing necessarily to reread the book. I had to guess, but fortunately only two or three times, as to where to find "continued fraction". Consequently, it is not an easy book to "dip into"; one should read it from cover to cover at a leisurely pace, and then return to those parts that enthuse.

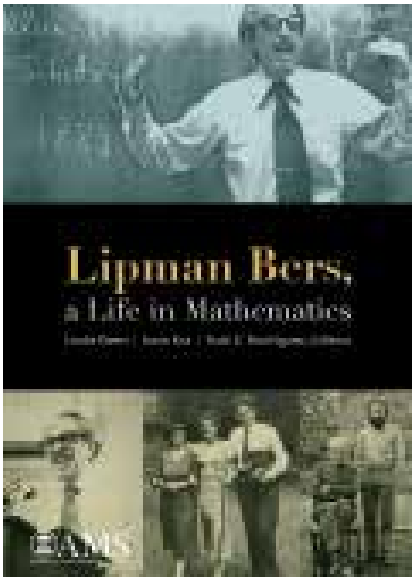
Michael Collins
University College, Oxford

LIPMAN BERS, A LIFE IN MATHEMATICS

edited by Linda Keen, Irwin Kra and Rubi E. Rodriguez, American Mathematical Society, 2015, pp 329, £38.95, ISBN 978-1470420567.

Spring 1968 marked an eruption of political protest by young people across the western world against the political *status quo* that had developed during the 1950's and specifically against both the suffocating grip of the Soviet Empire in Eastern Europe and the cynical US military involvement in South East Asia. Across the USA in the early 60's, student rebellions at UC Berkeley and elsewhere had demanded freedom of speech, democratic rights and an end to racial segregation and the Vietnam war. As a young academic at

Columbia University in New York City, I was caught up in this when the campus was taken over and many buildings occupied by the student movement SDS for several days. All over the urban campus, there was political argument akin to Question Time, or Speaker's Corner on a good day, with al fresco public discussion of the issues led by impromptu stand-up speakers on chairs. I was astonished one day to witness a senior faculty mathematician I knew holding forth to an engaged and vocal audience of students about what democracy should be. This was Lipman Bers and it was clear to me that he relished this encounter with student hecklers. I only discovered later, when I got to know him better, what it was in his background that drove him to welcome this opportunity.



Lipman Bers was born in Latvia in 1914. After an early period spent in Petrograd at the time of the Bolshevik Revolution, his family returned to Riga, where his childhood years played out against a background of growing economic and political turmoil. His involvement in the struggle against Stalinist and Nazi fascism started in the 1930's with the Bund, a Baltic Jewish socialist movement. He also began a lifetime of study in mathematics in Zürich, Prague, Paris and elsewhere in Europe, before being forced to flee for his life in 1940 from the encroaching Nazi embrace. He spent the rest of a long and fruitful mathematical career in the USA, exerting a pervasive creative influence on his chosen discipline while at the same time maintaining an active interest in international human rights and politics. This book presents a collection of articles and reprints of mathematical and biographical interest, produced to mark the centenary of his birth.

The core element of the book, an (all too brief) autobiographical memoir by Bers covering his early life, presents a fascinating glimpse into a disappeared world most of whose participants perished in the camps. Later articles from former students and colleagues describe his contributions to mathematics, highlighting the work for which Bers and Lars Ahlfors became famous, their joint creation of a rigorous complex analytic deformation theory of Riemann surfaces, the Teichmüller spaces, and the myriad extensions and applications of this within complex geometry, hyperbolic 3D manifolds and holomorphic dynamics.

Besides the Bers memoir, several original contributions merit special attention. Scott Wolpert's article outlines a simplified approach to the key measurable Riemann mapping theorem of Ahlfors and Bers, due to Boyarski. Fred Gardiner and Linda Keen contribute an erudite and insightful assessment of recent developments in the directions which Bers introduced into one dimensional deformation theory. Howard Masur contributes an evaluation and expansion on the Bers version of Thurston's famous classification of surface homeomorphisms. These and other essays open new pathways to further study.

A valuable supplement is a set of biographical pieces on Bers reprinted from earlier sources. One of them, by Irwin Kra

and Hyman Bass in the American Philosophical Society Proceedings, would have served as a suitable overture to the volume. Others detail his remarkable abilities as lecturer, political activist and, most of all as supervisor and mentor of a huge group of graduate students and other mathematicians. For anyone wishing to witness his charm as lecturer, and incidentally to find out what a quasiconformal mapping is, you are encouraged to go to the url below and put the kettle on.

The Bers lecture in Dennis Sullivan's CUNY seminar is at http://tinyurl.com/Bersvideo.

There you will also discover the bitter irony which drove Bers to work in an area inspired by the work and ideas of a brilliant mathematician in thrall to the Nazi ideology which destroyed the whole fabric of his youth along with most of Europe's Jewish community. It could be a Hollywood script.

As a postscript, let me say that there is a message of significance here for those who study scientific methodology and the evolution of mathematical ideas. In the longevity and growth of the Ahlfors-Bers school of complex analysis, we can see several contributory causes. The formidable drive and analytical skills of the two founding fathers were only the start; their willingness to combine and coordinate their separate abilities forged an important bond and the friendly rivalry and sociable attitudes instilled in their respective research groups grew from their own generous natures. A particular feature of the Bers group was the relative abundance of females among the throng of doctoral students: I am myself a beneficiary of this enlightened attitude. Bers would have been enormously pleased and proud to see the first female recipient of a Fields medal, Maryam Mirzakhani, emerge from the Ahlfors-Bers stable.

Bill Harvey
King's College

Isaac Newton Institute for Mathematical Sciences

SPATIALLY DISTRIBUTED STOCHASTIC DYNAMICAL SYSTEMS IN BIOLOGY

20 – 24 June 2016

in association with the Isaac Newton Institute programme
Stochastic Dynamical Systems in Biology: Numerical Methods and Applications
(4 January – 24 June 2016)

Many fundamental biological processes involve spatially distributed components. Examples include the diffusion of proteins within microdomains and lipid bilayers; the propagation of trans-membrane potentials across cellular membranes; the movement of cells within tumors; and the transmission of chemical signals from the cell surface to regulatory sites in the nucleus. This workshop aims to bring together researchers investigating spatially distributed stochastic processes in cell and molecular biology, with researchers developing techniques for the analysis of mathematical models and related numerical methods. One particular emphasis will be models involving spatial transport and chemical reactions, which often span multiple time and length scales.

The dynamical systems representing these models involve a mixture of partial differential equations, stochastic partial differential equations, and both continuous and discrete space-time stochastic processes. Methods of asymptotic analysis for these models and numerical solution methods will be emphasized. The latter include the lattice-based reaction diffusion master equation and optimized versions of the Gillespie method for generating exact realizations of discrete-space jump process models; Brownian dynamics simulation algorithms based on discretizing stochastic differential equations and Green's function techniques; and numerical methods for solving SPDEs. Here the many existing methods are less rigorously justified than for corresponding methods in well-mixed systems, and so the development of numerical methods by analysis of the underlying mathematical model will be stressed.

Further information available from the website:
www.newton.ac.uk/event/sdbw04

Isaac Newton Institute for Mathematical Sciences

GENERAL RELATIVITY: FROM GEOMETRY TO AMPLITUDES

27 June to 1 July 2016

in association with the Isaac Newton Institute programme
Gravity, Twistors and Amplitudes
(20 June – 8 July 2016)

Gravity is a dynamical theory of metrics on space- time that follows from the standard Einstein-Hilbert action principle. However, there are indications from scattering amplitudes, string theory and twistor theory that this may not be the only or even the best way to understand the full structure of the theory. Important insights and simplifications arise by reformulating 4d gravity as a theory of connections on space-time rather than metrics. The manifolds of G2 holonomy suggest a link between 3d, 4d and 7d geometrical structures. One can alternatively formulate gravity and its amplitudes in (ambi-) twistor space leading to unexpected formulae and structures. The scattering amplitudes of general relativity appear to be a double copy of those in Yang-Mills theory. Furthermore, perturbative calculations of GR amplitudes do not use a space-time Lagrangian and indeed their connection to the standard Einstein-Hilbert action remains obscure. The aim of this workshop is to bring together experts working on these different aspects of gravity to obtain a more coherent understanding.

Further information available from the website
www.newton.ac.uk/event/gtaw01

Closing date for applications: **25 March 2016**

CALENDAR OF EVENTS

This calendar lists Society meetings and other mathematical events. Further information may be obtained from the appropriate LMS Newsletter whose number is given in brackets. A fuller list is given on the Society's website (www.lms.ac.uk/content/calendar). Please send updates and corrections to calendar@lms.ac.uk.

MARCH 2016

15-17 Peter Sarnak, Distinguished Lecture Series 2016, Heilbronn Institute, Bristol (456)
16-20 Nordic Congress of Mathematicians, Stockholm (453)
21 LMS Meeting at BMC 2016, Bristol (456)
21-24 BMC 2016, Bristol (456)
21-25 LMS Invited Lectures, Edgar Knobloch (Berkeley), Loughborough (456)
29-1 Apr Algebraisation and Geometrisation in the Langlands Programme, Bristol (453)
30-2 Apr Singularities and Applications, Liverpool (454)

APRIL 2016

1-2 North British Functional Analysis Seminar, Lancaster University (456)
4-8 Advances in Numerical and Analytic Approaches for the Study of Non-Spatial Stochastic Dynamical Systems in Molecular Biology INI Workshop, Cambridge (456)
4-8 Explicit Methods in Number Theory in Honour of John Cremona's 60th, Warwick (455)

4-8 Easter Probability Meeting on Random Structures Arising in Physics and Analysis, Lancaster University (453)
5-8 BAMC 2016, Oxford (456)
6-8 Young Functional Analysts' Workshop, Queen's University Belfast (455)
9-10 Mathematics Emerging, The Queen's College, Oxford (456)
9-10 Probabilistic Combinatorics, Oxford (455)
11-15 From the Grain to the Continuum, INI Workshop, Cambridge (454)
13-15 British Algebraic Geometry Meeting, Edinburgh (456)
13 LMS Women in Maths Day, Cambridge (456)
20 LMS Inaugural Hirst Lecture, St Andrews (456)
22 LMS Women in Maths Day, Edinburgh (456)
26 Point Processes and Warping Functions with Statistical Applications, Nottingham (455)

MAY 2016

2-4 Hilbert's Sixth Problem Workshop, Leicester (455)
12 The David Crighton Lecture, Professor Frank Kelly, The Royal Society, London (456)
16-19 Operators, Operator Families and Asymptotics, Bath (455)
18-20 The Dymamics of Complex Systems, Warwick (454)
20-21 Groups in Galway, National University of Ireland, Galway (454)
21 The History of Number Theory, Birkbeck, University of London (455)
24 LMS and Gresham College Lecture, London (456)
23-25 Wales Mathematics Colloquium, Gregynog Hall, Powys (455)
26-27 Young Applied Analysts in the UK, Bath (456)

JUNE 2016

6-10 From the Continuum to the Tectonic INI Workshop, Cambridge (455)
9-10 Scottish Partial Differential Equations Colloquium, Dundee
20-24 Spatially Distributed Stochastic Dynamical Systems in Biology INI Workshop, Cambridge (456)
20-24 New Trends in Nonlinear PDEs, Cardiff (456)
23-24 LMS Northern Regional Meeting, Manchester
27-1 July General Relativity: From Geometry to Amplitudes INI Workshop, Cambridge (456)

JULY 2016

4-8 Modern Topics in Nonlinear PDE and Geometric Analysis, Reading (455)
8 LMS Graduate Student Meeting, London
8 LMS Meeting, London
11-25 Algebraic Combinatorics and Group Actions, Herstmonceux Castle, East Sussex (456)
18-22 7ECM, TU Berlin (456)
21 LMS Meeting at the 7ECM, Berlin
25-31 International Mathematics Competition for University Students, Blagoevgrad, Bulgaria (455)

AUGUST 2016

1-4 Young Researchers in Mathematics Conference, St Andrews
25-26 Caucasian Mathematics Conference, Turkey (453)

SEPTEMBER 2016

18-23 Heidelberg Laureate Forum (454)
26-30 Clay Research Workshops, Oxford (456)
28 Clay Research Conference, Oxford (456)

NOVEMBER 2016

11 LMS Graduate Student Meeting, London
11 LMS Annual General Meeting, London

DECEMBER 2016

20 LMS South West & South Wales Regional Meeting, Bath

LMS 150TH ANNIVERSARY CLOSING RECEPTION

held at De Morgan House on 15 January 2016

(see report on front page)

Associate Artist George Legendre

Heidi Morstang, film director of *Thinking Space*

LMS President, Simon Tavaré with Past President John Ball

Chris Lance, Susan Hezlet, John Jones and John Hunton

Attendees

Attendees