THE LONDON MATHEMATICAL SOCIETY NEWSLETTER

No. 291 March 2001

FORTHCOMING SOCIETY MEETINGS

Friday 22 June - London
Hardy Lecture
Friday 6 July - Manchester
Northern Regional Meeting
Wednesday 12 September - Bristol
South Western Regional Meeting

COUNCIL DIARY
26 January 2001

The first meeting of 2001 was also the first chaired by Trevor Stuart since he took up the presidency in November. It began with a welcome to new members of Council. The meeting was relatively brief but included some substantial business items. The first was planning for the retreat to be held in Sussex in February. These retreats, which have taken place every two years, give Council a chance to have a fuller discussion of major issues than is possible within the time constraints of a normal meeting. A full report of the retreat will be given in the next issue.

In the publications area, we approved a new contract for *Nonlinearity,* our joint venture with the Institute of Physics. There were several small but significant changes to be ratified. One result of these is that we are now able to mothball a holding company which had been established for the sole purpose of publishing the journal, a technical detail but one that will save the LMS thousands of pounds each year in administrative costs.

Last June's diary reported the Society's exchanges with the mathematical community in Africa and the Southern Africa Mathematical Sciences Association. At the January meeting we saw some of the fruits of this work, in the shape of the first issue of the SAMSA Journal which LMS has helped to launch.

We received a lengthy report on a meeting of representatives from the LMS and its sister societies (IMA, ORS and RSS) with officers of EPSRC, including its chief executive Richard Brooke, and Alasdair Rose and Deborah Miller from the Mathematics Programme. Many things had come from the meeting, including discussions of Doctoral Training Accounts (see Ken Brown's article in the February *Newsletter,* requesting members' input on this issue). There was a strong feeling that EPSRC is very favourably inclined towards mathematics, as its recent funding increases suggest. However it has its own concerns, which include a perceived lack of international competitiveness in the mathematics

training of engineers in the UK. This is one of the themes for discussion at the retreat. Another issue discussed, which proved quite contentious, was the mechanism by which EPSRC selects referees for research grant proposals. There is considerable unease that this can result in proposals being sent to referees whose field is remote from the subject, and that in some cases (for example symposium applications, where almost all the experts are participants in the programme) the mechanism effectively excludes all the most competent referees.

The Librarian reported on negotiations over one of the Society's lesser-known historical assets - a collection of wooden geometric models by Plücker, commissioned by the Society in connection with a paper of his in the *Proceedings*. These have been on loan since 1876 to the Science Museum, where they are currently displayed. This arrangement was under threat but has now been extended for a further seven years.

Like any modern organisation, the Society relies on IT for its functioning, both internally and in the part visible to members - publications and the website. We have two independent computer systems whose maintenance is a major undertaking, and we spent part of the meeting looking at ways to support the systems in the future.

Tony Scholl

CRISPIN NASH-WILLIAMS

Professor Crispin Nash-Williams, FRSE, who was elected a member of the London Mathematical Society on 17 April 1958, died on 20 January 2001, aged 68.

LAURENCE C. YOUNG

Professor Laurence C. Young, FRS, who was elected a member of the London Mathematical Society on 14 December 1933, died on 24 December 2000, aged 95.

ROBERT A. RANKIN

Robert Alexander Rankin, who was elected to membership of the London Mathematical Society in 1946, died on 27 January 2001, aged 85. He was educated at Fettes College, Edinburgh, and Clare College, Cambridge. He was Professor and Head of Department in the University of Glasgow from 1954 until his retirement in 1982. He was elected to Fellowship of the Royal Society of Edinburgh in 1955, served as its Vice-President for three years from 1960 and was awarded its Keith Prize. Professor Rankin served the London Mathematical Society as its Vice-President, 1966-68, and as a member of its Council, 1947-51, 1962-63, 1965-68. He was awarded the Society's Senior Whitehead Prize in 1987 and the De Morgan Medal in 1998.

MICHAEL R. HERMAN

Professor Michael R. Herman, who was elected a member of the London Mathematical Society on 19 February 1982, died on 2 November 2000, aged 58.

YORKSHIRE DIFFERENTIAL GEOMETRY DAY

A Yorkshire Differential Geometry Day will be held on Friday 23 March 2001 at the University of Leeds from 10.30 am to 5 pm. This is part of a series of day-long geometry meetings jointly organized by the Universities of Hull, Leeds and York and supported by an LMS Scheme 3 grant. The speakers will be Nuno Romao (Cambridge), Radu Pantilie (Leeds), David Calderbank (Edinburgh) and Nigel Hitchin (Oxford). The programme may be viewed at the web address http://www.amsta.leeds.ac.uk/pure/geometry/dgday.html or obtained from John C. Wood, School of Mathematics, University of Leeds (j.c.wood@leeds.ac.uk).

LONDON MATHEMATICAL SOCIETY

Spitalfields Day

Mathematics Research Centre
University of Warwick

Monday 26 March 2001

RANDOM PARTIAL DIFFERENTIAL EQUATIONS

Organiser: Andrew Stuart (Warwick)

All talks will be held in the Mathematics Institute

Programme

9.30 -10.30	Professor Alexandre Chorin (Mathematics, Berkeley) *Prediction, irreversibility and computability*
10.30-11.15	Coffee
11.15-12.15	Professor Jerzy Zabczyk (Polish Academy of Sciences, Warsaw) *An introduction to stochastic evolution equations*
12.15-1.45	Lunch
1.45-2.45	Professor Arnaud Debussche (ENS Cachan-Bretagne) *Nonlinear dispersive waves perturbed by noise*
2.45-3.45	Professor Boris Rozovskii (University of Southern California) *Wiener chaos and stochastic numerics*
3.45-4.30	Tea
4.30-5.30	Professor Andrew Majda (Courant Institute, NYU) *Mathematical strategies for stochastic modelling in climate and other disciplines*
5.30-6.30	Wine and snacks

This is part of the EPSRC funded meeting on Computational Stochastic Differential Equations, 26 - 31 March 2001

For further information contact: Peta McAllister,
Mathematics Research Centre, University of Warwick, Coventry CV4 7AL
(e-mail: peta@maths.warwick.ac.uk; tel: 024 7652 4403; fax: 024 7652 3548).

HOLGATE LECTURES

In 1997 the London Mathematical Society extended its provision of lectures at a popular level. The Holgate lectures (called Holgate Lectures in memory of Philip Holgate, who helped ensure the success of the Popular Lecture series) provide help for locally based groups to invite high quality lecturers to give a talk on a mathematical subject, at a level suitable for those in the 15 to 18 age group who may be considering mathematics for future study. The lectures are designed with the aim of enhancing the students' interest and awareness of mathematics and of encouraging them to appreciate the importance, excitement and beauty of mathematics. Although the lectures are usually pitched at mathematical level of the 15-18 year old they are by no means the only audience that has been encountered and good publicity can result in the involvement of many interested adults as well. Such was the success of this scheme that it has been enlarged and extended with five Holgate lecturers. The current list of lecturers with the titles of their talks is:

- Dr David Chillingworth:
  Fractals, ferns and photocopiers, Seeing and believing, Chaotic dynamics
- Dr Nick Gilbert:
  Solvable and Unsolvable Problems, Only Connect, Numbers and Codes
- Professor Jeff Griffiths:
  Mathematics in Practice, The Suez Canal Story, Modelling the Spread of the HIV/AIDS Epidemic
- Mr Tom Roper:
  Mathematics and Human Motion, The Mathematics of Bowls, Leonardo Fibonacci and his Rabbits
- Dr Roger Webster:
  The Tail of Pi, Many Cheerful Facts about the Square on the Hypotenuse, Buttercups and Daisies

With the exception of Nick Gilbert (Edinburgh), these lecturers have completed the full time of their appointments and for the scheme to continue its success, we need four more to continue their excellent example. The present group are well distributed around the country and we would hope to continue that pattern. Travel (especially by train) can be very tiring and time consuming, so it is best, if it is possible, for a local organiser to contact someone not too far away from them. The details of the scheme can be found on the Society's website (http://www.lms.ac.uk/activities/education_com/).

If you can suggest someone who might be interested in taking on this task for a year or two, who is a good lecturer at this level, and who has something interesting to say, please contact me by e-mail (t.porter@bangor.ac.uk) with a copy to Frances Spoor (spoor@lms.ac.uk). Do ask them first and tell them to have a look on the website to see what they might be getting themselves into!

Finally we would remind members that they also could help organize a Holgate lecture. Although there have been many venues throughout the country, there are areas where little if any mathematical popularization occurs and no Holgate Lectures have been given.

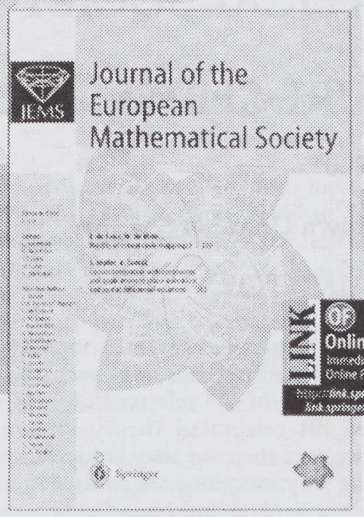
Tim Porter

VISIT OF DR A. YU. VOLOVIKOV

Dr A. Yu. Volovikov (Moscow) is visiting the UK during February and March supported by an LMS Scheme 5 grant. For further information contact Professor F.M. Borodich (e-mail: F.M.Borodich@liverpool.ac.uk, tel: 0151 794 4010, fax: 0151 794 4061).

GALWAY COLLOQUIUM

The 5th Galway Colloquium on General Topology will be held at the University of Hull from 27 - 29 June 2001. For further information contact Dona Strauss (d.strauss@maths.hull.ac.uk).



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LONDON MATHEMATICAL SOCIETY

INVITED LECTURE SERIES

18-23 June 2001

Professor T. GOODWILLIE (Brown University, USA)

CALCULUS OF FUNCTORS

Professor Goodwillie is a leading expert on the interplay between the topology of high dimensional manifolds and the algebra associated with theories such as algebraic K-theory and cyclic homology. While thinking of the relationship between the geometry and the algebra, he conceived his celebrated theory known as "Calculus of functors". In a nutshell, the theory says that one may study functors that arise in topology in a way analogous to the way functions are studied in ordinary differential calculus. This theory, both very general and remarkably powerful, has already had a profound impact on several areas of topology. Aside from applications to algebraic K-theory, it had rather spectacular applications in mainstream homotopy theory and in the study of fundamental spaces of geometric topology.

Professor Goodwillie will deliver two lectures each morning. An associated afternoon programme will be arranged by Drs G. Arone and M. Weiss.

Participants should arrive in Aberdeen on Monday 18 June. The lectures will begin on Tuesday 19 June and end at 12 noon on Saturday 23 June.

Accommodation will be available for the nights of Monday 18 June to Friday 22 June (and Saturday 23 June if requested) in Crombie Hall, King's College, Aberdeen University, Old Aberdeen. The costs are not finalised but in 2000 they would have been: Bed and Breakfast £12.76 per night, Dinner, bed and breakfast £20.85 per night. There will be a registration fee of £30 to cover other costs.

Some financial support is available for those who have difficulty in meeting the expenses, particularly for PhD students and young mathematicians based in the UK. Those requesting this support should tell the organizers as soon as possible and provide an estimate of the amount to be requested.

Those wishing to be put on the mailing list for information, should tell The Organizers, LMS Invited Lectures, Department of Mathematical Sciences, King's College, Aberdeen University, Aberdeen AB24 3UE (lms.lectures@maths.abdn.ac.uk).

Further details will be provided later, and will be posted at
http://www.maths.abdn.ac.uk/~lmslec/index.html

Trinity College Cambridge

TEACHING APPOINTMENT IN PURE MATHEMATICS

Applications are invited from men and women for appointment from 1 October 2001 to a College Lectureship in Pure Mathematics together with a Fellowship, tenable for three years in the first instance. The successful applicant will assist in supervising and directing studies in Mathematics in the College.

The Lectureship is tenable with or without another salaried appointment in the University. For a Lecturer with no other post, the stipend will be on a scale roughly comparable with that for University Lecturers, with placing according to age and qualifications.

Application should be made to the Senior Tutor, Trinity College, Cambridge CB2 1TQ. Further particulars may be obtained from the Senior Tutor at this address or by e-mail (seniortutor@trin.cam.ac.uk). Applicants should send a *curriculum vitae*, including a statement of qualifications, publications, and teaching experience, and should also ensure that three referees have written directly to the Senior Tutor on their behalf before the closing date of **21 March 2001**.

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LMS DURHAM RESEARCH SYMPOSIA

The LMS Research Meetings Committee is responsible for the planning of the LMS Durham Symposia, which have been running successfully each July since 1974, with over 60 symposia to date, in a wide range of mathematical disciplines. In 2001 there will be three Durham Symposia:

- 5-14 July: Combustion Theory (organisers: J. Brindley, J.W. Dold, V. Galaktionov, A.C. McIntosh)
- 16-26 July: Groups, Geometry and Combinatorics (A. Ivanov , M. Liebeck, J. Saxl)
- 30 July- 9 August: Special Structures in Differential Geometry (N.J. Hitchin, S.M. Salamon, A.F. Swann)

The most recent symposia have been:

2000 Computational Number Theory (H. Cohen, J.E. Cremona, N.P. Smart)
2000 Geometric Integration (C.J. Budd, A. Iserles, E. Mansfield)
2000 K-theory and Analysis (J. Brodzki, J.R. Hunton, R. Plymen)
1999 Quantum Groups (S. Donkin, A.N. Pressley, A. Sudbery)
1999 Stochastic Analysis (E. Bolthausen, L. Gross, T.J. Lyons)

Detailed proposals for symposia are made at least two years ahead. For each symposium an application is made to EPSRC for a substantial research grant, to cover the subsistence costs of all invited participants, and some travel. Considerable assistance is available in preparing the scientific and financial case for the proposals, and in the running of the symposium itself. More information about Durham Symposia is available on the LMS website (http://www.lms.ac.uk/ activities/research_meet_com/).

The LMS Research Meetings Committee welcomes ideas for symposia for 2003 and later, from potential organizers and others, who should contact the Chairman of the Committee, Professor E.G. Rees (elmer@maths.ed.ac.uk). For symposia to take place in 2003, proposals should be made as soon as possible.

FROM SUMER TO SPREADSHEETS: THE HISTORY OF MATHEMATICAL TABLE MAKING

A weekend conference on The History of Mathematical Table Making is being held at Kellogg College, Oxford, from 22 - 23 September 2001, supported by an LMS Conference grant. The conference will address the technical, institutional, intellectual and social history of tables, from earliest times until the late twentieth century. Talks will be given by leading scholars in the field from Europe and North America. For further information contact Dr Raymond Flood, Department for Continuing Education, University of Oxford, Rewley House, 1 Wellington Square, Oxford OX1 2JA (tel: 01865 270 360, e-mail: PPDayweek@conted.ox. ac.uk, web site: www.dcs.warwick. ac.uk/~hoc/ BSHM2001).

DUBLIN DIFFERENTIAL EQUATIONS CONFERENCE

The 4th Dublin Differential Equations Conference will be held at Dublin City University, Ireland, from 9 - 13 September 2001. The conference covers the theory, applications and numerical solution of Differential Equations, and the interplay between these.

The confirmed speakers are: C. Budd (Bath), E. Delabaere (Angers), O. Diekmann (Utrecht), P. Glendinning (Manchester), S. Howison (Oxford), A. Il'in (Ekaterinburg), M. Lavrentiev Novosibirsk), J. Ockendon (Oxford), R. O'Malley (Washington) and G. Shishkin (Ekaterinburg).

The deadline for registration is 15 July 2001 and the registration fee is 140 Euros (IR £110). The reduced fee before 31 May 2001 is 100 Euros (IR £79). For further information e-mail Jurgen.Burzlaff@dcu. ie or Carmel.Reid @dcu.ie; tel: +353-(0)1-7005389; fax +353-(0)1-7005786 or visit the website (http:// www.deconf.dcu.ie/).

EPSRC FUNDING OPPORTUNITIES RELEVANT TO MATHEMATICS AND STATISTICS RESEARCHERS IN HIGHER EDUCATIONAL INSTITUTES

Grants:

Responsive mode

Main mechanism by which research projects are funded. Comprises about 70% of the grants budget in the Mathematics Programme. The research idea originates with the proposer and proposals may be submitted at any time. There is no restriction on the subject matter for responsive mode proposals, other than it should fall within the EPSRC remit. Highly innovative research proposals embracing new concepts or techniques are actively encouraged. The key requirement is high quality, which is assessed by peer review. Can include requests for supporting postdoctoral research assistants, research students, travel to collaborators and equipment.

Fast stream

A Fast Stream peer review approval process for small grants to grant applicants applying to EPSRC for the first time. Grants of up to £60,000 can be approved in the fast stream process. To be eligible applicants must have been appointed to their first university appointment (paid under general university funding) within the previous 24 months, and be applying to the EPSRC as an individual Principal Investigator for the first time. If the grant proposal is commented on favourably by all three referees in the first stage of the review process, then approval will be given without the proposal being referred to a peer review prioritisation panel.

Realising Our Potential Awards (ROPAs)

ROPA reward researchers who receive substantial financial support (at least £25,000 per annum current as at 31 December in the year preceding the ROPA application) from industry for basic/strategic research through the award of grants to support curiosity-driven research of their own choosing. Proposals must satisfy originality and feasibility criteria.

Overseas travel grants

These are small proposals (under £20,000) requesting funds for travel and subsistence only, in order to visit recognised research centres abroad to study new techniques or to develop collaborations.

Research Networks in Mathematics

Encourages research collaborations between mathematicians, statisticians, operational researchers and researchers in other disciplines and in non-academic organisations. Supports workshops, visits, travel and a part-time co-ordinator. Closing dates 1 June and 1 December.

Support for Symposia and Workshops by the EPSRC Mathematics Programme

Support for meetings which are primarily to stimulate research and not for training of students and research assistants. Proposals are judged in competition. They can also include resources for students such as registration fees and accommodation costs (but not travel for EPSRC students who receive support via their studentship award).

Computational Engineering Mathematics: Formally known as "Computational Partial Differential Equations"
A programme to encourage new and existing collaborations between mathematicians and engineers working in the multidisciplinary area of computational mathematics as applied to engineering problems. Supports research projects, workshops, VFs, research networks. Closing dates for proposals apply.

Mathematics research underpinning the life sciences
Funding for mathematics and statistics research that underpins the life sciences. Proposals are considered in the normal responsive mode and jointly funded by the Mathematics and Life Sciences Interface Programmes.

Joint EPSRC/BBSRC programme in Theoretical Biology
The programme is jointly funded by EPSRC and BBSRC (managed by BBSRC). Supports projects that involve the application of mathematical and/or statistical tools to important and timely biotechnological and biological problems. These tools may comprise existing techniques or represent substantive development of new theory, but must address a problem of genuine biological importance and lead to real advancements in understanding the biological problem being addressed.

Mathematics for IT (MathFIT)
Supported by EPSRC and the London Mathematical Society. The objective of MathFIT is to develop new collaborative research links between mathematics and information science so as to stimulate and support high quality research in both fields. Supports research projects, workshops, VFs and research networks. Closing dates for proposals apply.

Fellowship and Research Assistantships:
Visiting Fellowships
Their purpose is to enable scientists or engineers of acknowledged standing from within the UK or abroad to visit the proposer's institution to give advice and assistance. The Mathematics Programme operates a fast decision process (within 12 weeks) for VF proposals under £8k.

Encouraging postdoctoral mobility between disciplines
Follow-on support of an extra year from an existing EPSRC research grant is available to allow the Post-doctoral Research Assistant on that project to transfer their knowledge and skills to another discipline. Applicant Principal Investigators must be in a new discipline, although the Principal Investigator on the original project may be a Co-Investigator on the follow-on grant.

Research Assistants Industrial Secondments (RAIS)
Similar to above but aims to encourage the transfer of knowledge gained by research assistants, supported by existing EPSRC industrial-academic collaborative research grants, to industry and to provide training in the company/ies involved the collaborative grant supporting the research assistants. The EPSRC can provide further funding for the research assistant(s) to be seconded to the company for up to a year after the end of the original research project.

Promotion of interdisciplinary research between mathematicians and engineers
Supports Visiting Fellowships up to the value of £8k to promote interactions between mathematicians and engineers in UK universities that will lead to new interdiscipli-

nary research collaborations being established. It is hoped that such visits will establish new collaborations that will result in an increased number of high quality, genuinely interdisciplinary proposals at the mathematics-engineering interface submitted to EPSRC in the responsive mode.

Senior Research Fellowships
Intended for candidates at the peak of their academic career who will have identified areas of work where they believe substantial progress can be made, where the promise of this progress in expanding the discipline is persuasive, and where their own achievement has indicated that they are well placed to meet the challenge. Annual closing date in September applies.

Advanced Research Fellowships
Intended for candidates usually under 35 years of age, with a minimum of three years postdoctoral experience, who will have demonstrated their capability of independent research having an expectation of establishing a research career of international standing and progressing to the highest levels in their area. Annual closing date in September applies.

Postdoctoral Research Fellowships
Intended for candidates usually within four years of completing a PhD to help them establish an independent research career. Annual closing date in January applies. Special encouragement is given to those working in statistics and operational research methodologies.

Royal Society Industry Fellowships
Funded jointly by the Royal Society, EPSRC and other funding organisations and provides opportunities for industrial scientists and engineers to carry out research in Universities and provides similar opportunities for academics to undertake projects in industry. Closing dates apply.

Daphne Jackson Fellowships
These fellowships aim to encourage high level scientists and engineers to return to their professions after a career break due to family commitments. The arrangement provides for retraining and updating of knowledge in the context of a guided project, carried out on a flexible, part-time basis at a university. Fellowships are administered by the Daphne Jackson Memorial Fellowship Trust. A specific fellowship for returning mathematicians is available, funded by the London Mathematical Society.

Hodge Fellowships
Two one-year fellowships per annum are funded by EPSRC for young mathematicians or theoretical physicists to wish to pursue their research at the Institut des Hautes Études Scientifiques. Closing date 1 December.

The Teaching Company Scheme (TCS)
A long-standing and well-proven method for technology transfer which places young graduates (called Associates) in companies to tackle a technical challenge under the guidance of an academic supervisor. Managed by the Teaching Company Directorate.

Research Training:
Masters Training Packages (MTPs)
MTPs are the only route to support training at the Masters level and incorporate MSc

courses, Integrated Graduate Development Scheme (IGDS) and the MRes courses. They are flexible packages which can include full or part-time training and/or continuing professional development (CPD) courses and lead to appropriate postgraduate qualifications (MSc and/or MRes) at the Masters level. Closing dates apply and the principal criteria for support are demonstration of a national need.

Mathematics Standard Studentship Awards
Studentships starting in October 2001 will be funded via Doctoral Training Accounts, which provide funds direct to universities to train PhD students. The accounts will include funds for stipends, fees and a contribution to training costs. They will be flexible accounts which will allow individual Universities to be able to maximise their resources and be able to respond to local market forces. These accounts will be issued annually. Students will no longer be able to apply directly to EPSRC for funding through the Mathematics Pool.

Case Project
CASE awards for specifically approved projects within the remit of the Mathematics Programme. The 3-year research studentship involves sponsorship by a company or other organisation. Annual closing date applies. Also studentships funded via DTAs can be converted to CASE.

Industrial CASE
CASE awards are given directly by EPSRC to companies that can identify an academic partner of their choice and take the lead in defining the project.

CASE for New Academics
Provides a way for academics to build links with a company at an early stage of their career, through co-supervision of a CASE studentship. EPSRC Advanced Fellow and Royal Society University Research Fellows may also be eligible. Proposals may be submitted at any time.

Instructional Short Courses/Summer Schools
EPSRC has awarded a contract to the London Mathematical Society to organise and run its instructional course programme across most of the remit of its Mathematics Programme (except statistics and operational research). Statistics and OR courses directly supported by the Mathematics Programme through individual contracts to universities hosting the courses. Aimed primarily at 1st or 2nd year PhD students.

Life Sciences Interface Programme: Summer Schools
The Life Sciences Interface Programme is proposing to support a number of summer schools to provide training at the interface between life sciences and engineering and the physical sciences. Closing date in February applies.

Contacts:
Programme Manager for Mathematics: Dr Alasdair Rose (direct line: 01793 444310, e-mail: alasdair.rose@epsrc.ac.uk).

Associate Programme Manager for MathFIT, Studentships, MTP, Workshops and Short Courses: Anne Farrow (direct line: 01793 444110, e-mail: anne.farrow@epsrc.ac.uk).

Associate Programme Manager for Applied Mathematics, Mathematics underpinning

the Life Sciences and Environmental Mathematics: Deborah Miller (direct line: 01793 444162, e-mail: deborah.miller@epsrc.ac.uk).

Associate Programme Manager for Pure Mathematics, Computational Engineering Mathematics, Financial Mathematics: Karen Parrish (direct line: 01793 444035, e-mail: karen.parish@epsrc.ac.uk).

Any correspondence should be sent to the following address: Engineering and Physical Sciences Research Council, Polaris House, North Star Avenue, Swindon SN2 1ET (fax: 01793 444547, web: http://www.epsrc.ac.uk).

London Mathematical Society

in association with the Isaac Newton Institute

First Announcement

Spitalfields Day

Wednesday 9 May 2001
King's College London

TODAY'S PDEs

Speakers:

- L.C. Evans (University of California, Berkeley and Isaac Newton Institute)
- C.M. Dafermos (Brown University and University of Oxford)
- A. Grigoryan (Imperial College)
- N.S. Trudinger (Australian National University and Isaac Newton Institute)

The programme will begin at 1.30 pm and end with a reception at 5.30 pm.

For catering purposes, please advise Maureen Clark at the Isaac Newton Institute, 20 Clarkson Road, Cambridge CB3 0EH (e-mail: m.clark@newton. cam.ac.uk) by **2 May 2001** if you intend to come.

A Newton Institute Workshop

VERTICAL INTEGRATION IN BIOLOGY: FROM MOLECULES TO ORGANISMS

24 - 28 September 2001

Organisers: Dr Nick Monk, Professor Philip Maini, Professor Denis Noble, Professor Tim Pedley and Professor Michael Akam

Themes: Biological systems exhibit prominent behaviour at the levels of both individuals and populations. Empirical and theoretical research at each of these levels has led to tremendous advances in knowledge; however, much less is understood about the mechanisms underlying the integration and co-ordination of behaviour at the individual level to produce coherent population-level behaviour (vertical integration). This workshop will bring together leading experimental and theoretical researchers, together with those working at the interface between the two communities. The aim will be to identify and explore new interdisciplinary approaches to the problem of vertical integration. Examples will be drawn from the broad areas of cell and developmental biology and physiology.

Specific areas of focus:

Cell signalling	Morphogenesis
Gene networks	Neural networks
Neurophysiology	Cardiology

Confirmed speakers: R. Adams (Bath), F. Ashcroft (Oxford), D. Bray (Cambridge), G. Forgacs (Missouri), T. Hoefer (Berlin), P. Hunter (Auckland), J. Jack (Oxford), R. Keller (Virginia), P. Kulesa (Caltech), M. Levine (Berkeley), J. Lewis (London), A. McCulloch (San Diego), D. Noble (Oxford), J. Reinitz (New York), J. Sherratt (Edinburgh), K. Weijer (Dundee).

Location and cost: The Workshop will take place at the Newton Institute and accommodation for participants will be provided in single study bedrooms with shared bathrooms at Wolfson Court, a hall of residence adjacent to the Institute. The Workshop package costs £250, which includes registration fee, accommodation, breakfast and dinner from dinner on Sunday 23 September until breakfast on Friday 28 September, and lunches and refreshments on the days that lectures take place.

Further information and application forms: These are available from the WWW at http://www.newton.cam.ac.uk/programs/ICB/icbw01.html, where further information about the Workshop will be posted and updated. Completed application forms should be sent to Maureen Clark at the above address, or via e-mail (m.clark@newton.cam.ac.uk).

Scientific enquiries may be addressed to Dr Nick Monk (n.monk@sheffield.ac.uk) or Professor Philip Maini (maini@maths.ox.ac.uk).

Closing date: for receipt of applications is **30 April 2001.**

UNIVERSITY OF DUBLIN
TRINITY COLLEGE

Lectureships in Mathematics (2 posts)

Applications are invited for two permanent Lectureships in the School of Mathematics. Duties will include an active involvement with research, supervising the work of undergraduate and postgraduate students and lecturing to large groups.

The research interests already represented in the department include theoretical high-energy physics, low-dimensional topology and geometry, and functional analysis. Preference will be given to candidates with interests in areas that accord with the strategic planning of the department, especially symplectic geometry and low-dimensional topology, algebraic geometry, string theory, climate modelling or topics that fit well with those already represented. However, the posts are open to strong applicants with research interests in any areas of pure or applied mathematics.

These appointments will be made on the salary scale IR£19,427 - IR£47,992 per annum, at commencing salaries within the range IR£19,427 - IR£27,414 per annum.

Informal enquiries may be addressed to:

Dr Richard Timoney,
Head of Department of Pure and Applied Mathematics
Telephone: +353-1-608-1949 or e-mail: Richard.timoney@tcd.ie

Further details on the Department may be obtained at www.maths.tcd.ie/

Candidates should submit a full *curriculum vitae*, to include the names of three referees, to:

Recruitment and Establishment Manager,
Staff Office,
Trinity College,
Dublin 2
Telephone: +353-1-608-1678, fax: +353-1-677-2169,
e-mail: recruit@tcd.ie, website: www.tcd.ie/Staff_Office

to arrive not later than **Friday 16 March 2001**

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Centro Internacional de Matematica

SEMIGROUPS, ALGORITHMS, AUTOMATA AND LANGUAGES

Coimbra (Portugal), May, June and July 2001

First Announcement

Organising committee: Gracinda M.S.Gomes (Lisbon; CAUL), Jean-Eric Pin (Paris VII; CNRS), Pedro V.Silva (Porto; CMUP).

The period is intended to make Coimbra the gathering point of researchers in the subjects of semigroup theory and automata theory during the months of May, June and July 2001. Besides providing a basepoint for the development of joint research projects, the Term includes multiple activities such as specialised schools and workshops on relevant specific subjects. Postgraduate students will be particularly welcome. Updated information will be available on the internet (http://alf1.cii.fc.ul.pt/term2001/).

Each school consists of several 5 hour courses given by prominent researchers. The workshops include 50 minute invited lectures and a limited number of 20 minute talks on the specific topics of the workshop, proposed by participants. Anyone wishing to present such a communication is invited to submit a one or two page abstract, as soon as possible, by e-mail (term2001@cii.fc.ul.pt).

The programme of events (with the invited lecturers) is the following:

- **School on Algorithmic Aspects of the Theory of Semigroups and its Applications (May 2 to 11)** J. Almeida (Porto), C. Choffrut (Paris VII), J. Fountain (York), S. Margolis (Bar-Ilan), L. Ribes (Carleton), M. Sapir (Vanderbilt), M. Volkov (Ekaterinburg), T. Wilke (Kiel).
- **School on Automata and Languages (June 4 to 8)** M. Branco (Lisbon), V. Bruyère (Mons), O. Carton (Marne-la-Vallée, A. Restivo (Palermo).
- **Workshop on Model Theory, Profinite Topology and Semigroups (June 11 to 13)** J. Almeida (Porto), T. Coulbois (Paris VII), H. Straubing (Boston College), P. Trotter (Tasmania), P. Weil (Bordeaux).
- **School on Semigroups and Applications (July 2 to 6)** K. Auinger (Vienna), M. Lawson (Bangor), W.D. Munn (Glasgow), A. Pereira do Lago (Sao Paulo).
- **Workshop on Presentations and Geometry (July 9 to 11)** R. Gilman (Stevens Inst. of Tech.), D. McAlister (DeKalb), J. Meakin (Lincoln), S. Pride (Glasgow), N. Ruskuc (St. Andrews), B. Steinberg (Porto).

The venue for all events is the Observatorio da Universidade de Coimbra. The registration fees are the following: May School: Euro 120; June events: Euro 120; July events: Euro 120; Full period: Euro 240. In return for their fees, the participants are entitled to receive school/workshop documentation and to participate freely in the social activities, including the Term dinners, to be held on May 10, June 12 and July 10. Accompanying persons wishing to join the social programme will pay 75% of the normal fee. The cheques, payable to Centro International de Mathematica (CIM), should be sent to: Patricia Paraiba, C.A.U.L., Av. Prof. Gama Pinto 2, 1649-003 Lisboa, Portugal. Detailed information on accommodation and travel arrangements will be supplied in the second announcement. In order to receive further information participants should request a pre-registration form (term2001@cii.fc.ul.pt).

SINGAPORE INTERNATIONAL SYMPOSIUM ON TOPOLOGY AND GEOMETRY 2001

An international symposium on Topology and Geometry will be held from Monday 2 to Friday 6 July 2001 at the National University of Singapore, Republic of Singapore. The symposium aims to survey current research in a broad range of geometry and topology, including differential and algebraic geometry, geometric and algebraic topology, and geometric analysis. The symposium is being organised by the Department of Mathematics, National University of Singapore, in collaboration with S.W.I.M.S. (Singapore-Warwick Initiative in Mathematical Sciences).

Confirmed principal speakers are:

- Alejandro Adem (University of Wisconsin-Madison)
- Denis Auroux (Massachusetts Institute of Technology/École Polytechnique)
- Cameron Gordon (University of Texas at Austin)
- Dominic Joyce (Oxford University)
- Bong H Lian (Brandeis University)
- Rafe Mazzeo (Stanford University)
- Michael McQuillan (Oxford University)
- Yong-Geun Oh (University of Wisconsin-Madison/Korea Institute for Advanced Study)
- J Hyam Rubinstein (Melbourne University)
- Hiromichi Takagi (Kyoto University)
- Weiping Zhang (Nankai University)

Interested participants should submit an abstract not longer than one page and a short CV to the organizer before 1 May 2001. Those accepted will be notified by 1 June 2001. For further information contact: The Organizing Committee, SISTAG 2001, c/o Department of Mathematics, National University of Singapore, 2, Science Drive 2, Singapore 117543, Republic of Singapore (fax: (65) 779 5452, e-mail: sistag@math.nus.edu. sg, web: http://www.math.nus.edu.sg/sistag.htm).

Singapore-Warwick Workshop

This symposium is followed by the Singapore-Warwick Workshop in Geometry and Topology, which will be held at the National University of Singapore from Monday 9 to Friday 13 July 2001. For further information on the workshop, visit the web site (http://www.math.nus.edu.sg/~office/swimsworkshop.htm).

GROUPS IN GALWAY 2001

A conference on Group Theory will take place from Friday 25 - Saturday 26 May 2001 at the Department of Mathematics, National University of Ireland, Galway. Among the invited speakers are:

- Professor G. Hiss (Aachen)
- Dr C.M. Campbell (St Andrews)
- Professor C. Casolo (Florence)
- Dr R. Gow (Dublin)
- Professor O. Puglisi (Florence)
- Professor E.F. Robertson (St Andrews).

For further information please contact the organisers who are Dane Flannery (Dane.Flannery@nuigalway.ie) or James Ward (James.Ward@nuigalway.ie) at the Department of Mathematics, NUI, Galway, Ireland (tel: + 353 91 750442, fax: + 353 91 750542).

C*-ALGEBRAS

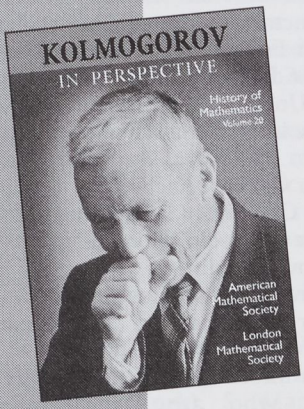
A one-day workshop dedicated to C*-algebras will be held in the Department of Pure Mathematics of Queen's University Belfast on Saturday 3 March 2001. In the morning, there shall be four 30 minute talks by the participants, starting at 10:30 am. In the afternoon, Professor J. Cuntz (University of Münster, Germany) will deliver two one-hour lectures, titles to be announced, at 2:30 pm and 4 pm., respectively. There will be a joint dinner in the evening. Full information can be obtained from Dr Martin Mathieu (m.m@qub.ac.uk).

The meeting is supported by the LMS to assist graduate students in attending.

AMERICAN MATHEMATICAL SOCIETY • LONDON MATHEMATICAL SOCIETY

History of Mathematics Series

These titles offer interesting historical perspectives on the people, communities, and that have profoundly influenced the development of mathematics. Beginning with Volume 4, the History of Mathematics series is co-published with the London Mathematical Society. The LMS is registered with the Charity Commissioners.



NEW!

Kolmogorov in Perspective

The editorial board for the History of Mathematics series has selected for this volume a series of translations from two Russian publications, *Kolmogorov in Remembrance* and *Mathematics and its Historical Development*. This book, *Kolmogorov in Perspective*, includes articles written by Kolmogorov's students and colleagues and his personal accounts of shared experiences and lifelong mathematical friendships. Specifically, the article, "Andreĭ Nikolaevich Kolmogorov. A Biographical Sketch of His Life and Creative Paths" by A. N. Shiryaev, gives an excellent personal and scientific biography of Kolmogorov. The volume also includes the following articles: "On A. N. Kolmogorov" by V. I. Arnol'd, "In Memory of A. N. Kolmogorov" by S. M. Nikol'skiĭ, "Remembrances of A. N. Kolmogorov" by Ya. G. Sinaĭ, "The Influence of Andreĭ Nikolaevich Kolmogorov on My Life" by P. L. Ul'yanov, "A Few Words on A. N. Kolmogorov" by P. S. Aleksandrov, "Memories of P. S. Aleksandrov" by A. N. Kolmogorov, "Newton and Contemporary Mathematical Thought" by A. N. Kolmogorov, and an extensive bibliography with the complete list of Kolmogorov's works—including the articles written for encyclopedias and newspapers. The book is illustrated with photographs and includes quotations from Kolmogorov's letters and conversations, uniquely reflecting his mathematical tastes and opinions.

History of Mathematics, Volume 20; 2000; 230 pages; Hardcover; ISBN 0-8218-0872-9; List $49; All AMS members $39; Order code HMATH/20LMS

All prices subject to change. Charges for delivery are $3.00 per order. For optional air delivery outside of the continental U. S., please include $6.50 per item. Prepayment required. Order from: **American Mathematical Society,** P. O. Box 845904, Boston, MA 02284-5904, USA. For credit card orders, fax 1-401-455-4046 or call toll free 1-800-321-4AMS (4267) in the U. S. and Canada, 1-401-455-4000 worldwide. Or place your order through the AMS bookstore at www.ams.org/bookstore/. Residents of Canada, please include 7% GST.

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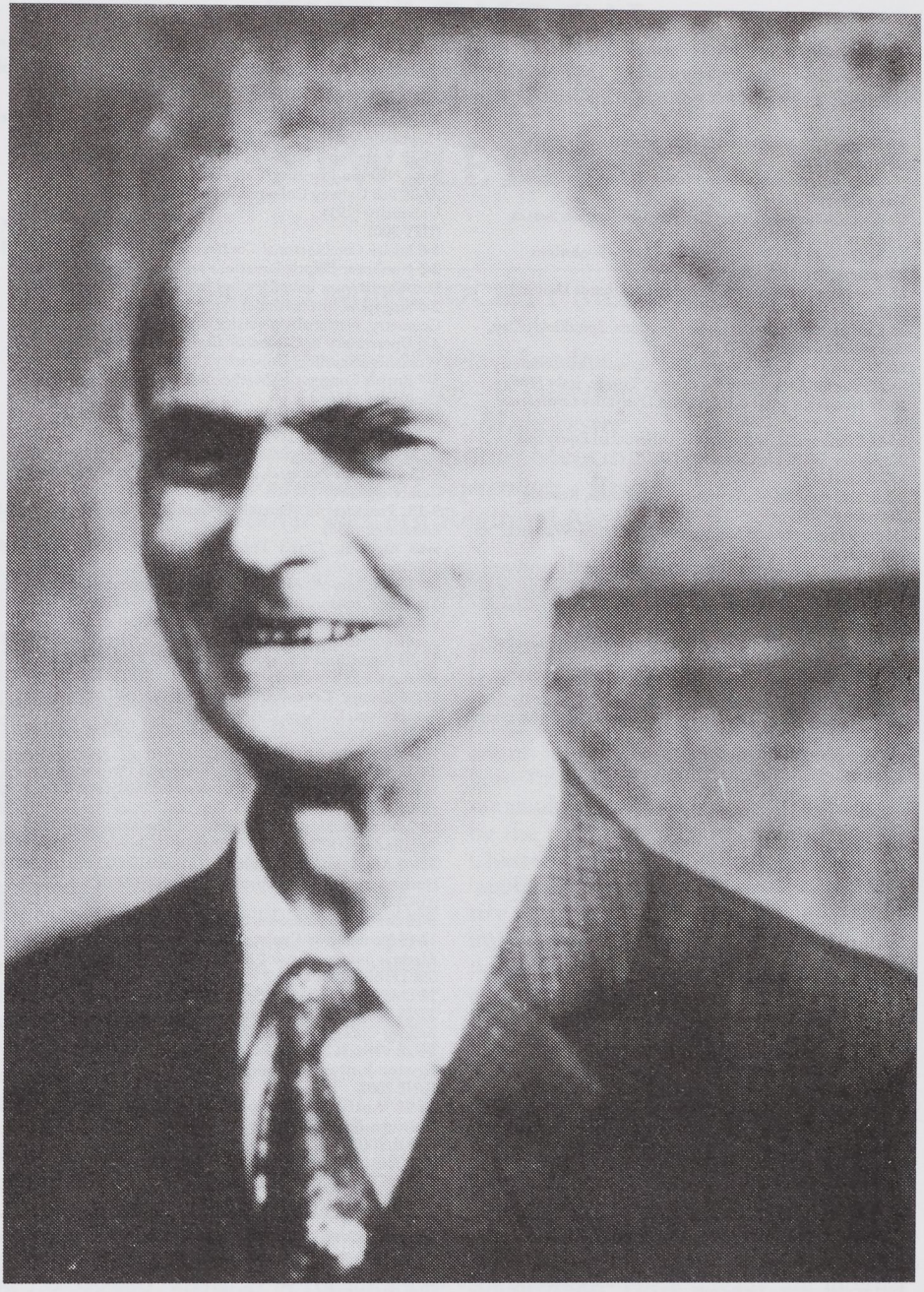

H.S.M. COXETER
HONORARY MEMBER 1978

DIARY

The diary lists Society meetings and other events publicized in the *Newsletter*. Further information can be obtained from the appropriate LMS Newsletter whose number is given in brackets. A fuller list of meetings and events is given in the Society's web site (http://www.lms.ac.uk/meetings/diary.html).

MARCH 2001

9 Edinburgh Mathematical Society Meeting, Aberdeen University (285)
18-24 Geometric Analysis and Index Theory Conference, Trieste, Italy (286)
19 Walter Ledermann 90th Birthday Conference, Sussex University (290)
19-24 Discrete and Continuous Stochastic Evolutions Workshop, Warwick University (287)
23 Yorkshire Differential Geometry Day, Leeds University (291)
26 Random Partial Differential Equations, Spitalfields Day, Warwick University (290)
26-29 Quantum Field Theory, Noncommutative Geometry and Quantum Probability Workshop, Trieste, Italy (286)
26-29 Numerical Methods for Fluid Dynamics Conference, Oxford University (286)
26-31 Computational Stochastic Differential Equations Workshop, Warwick University (287)

APRIL 2001

2-5 British Applied Mathematics Colloquium, Reading University (288)
2-6 Lévy Processes and Stable Law Conference, Warwick University (287)
7-9 British Topology Meeting, Edinburgh and Heriot-Watt Universities (286)
9 Alfred Goldie 80th Birthday Conference, Glasgow University (289)
9-12 British Mathematical Colloquium, Glasgow University (287)
20 Group Theory Postgraduate Conference, Imperial College (288)
28-29 Great Lakes Geometry Conference, Northwestern University, USA (288)

MAY 2001

4 Edinburgh Mathematical Society Meeting, Stirling University (285)
9 Today's PDEs, Spitalfields Day, King's College London (291)
6-13 Symmetry and Perturbation Theory Workshop (SPT2001), Sardinia (284)
25-26 Groups in Galway 2001, National University of Ireland, Galway (291)
28 -1 June Harmonic Morphisms and Harmonic Maps Conference, CIRM, Luminy, France (284)

JUNE 2001

1 Edinburgh Mathematical Society Meeting, St Andrews University (285)
2-5 The Heritage of I. Schur's 1901 Dissertation, Gregynog Hall, Powys (290)
3-8 Mathematical Population Dynamics Conference, Marrakech (288)
8-10 Belgian Mathematical Society/Deutsche Mathematiker Vereinigung joint meeting, Liège University, Belgium (284)
19-22 Computational Intelligence: Methods and Applications Congress (CIMA 2001) University of Wales, Bangor (283)
19-23 Calculus of Functors, T. Goodwillie, LMS Invited Lectures, Aberdeen University (286)
22 Hardy Lecture, LMS Meeting, London
25-28 Banach Algebras and Cohomology Conference, Newcastle University (288)
25-29 Variational Problems with Singularities Workshop, Isaac Newton Institute, Cambridge (290)
27-29 5th Galway Colloquium on General Topology, Hull University (291)

JULY 2001

1-6 British Combinatorial Conference, Sussex University (276)
2-6 Nonlinear Elliptic Equations and Transition Phenomena EuroConference, Isaac Newton Institute, Cambridge (290)
2-6 Singapore International Symposium on Topology and Geometry, National University of Singapore (291)
4-6 Uncertainty in Geometric Computations MathFIT Workshop, Sheffield University (287)
5-7 British Congress of Mathematics Education, Keele University (286)
5-14 Combustion Theory LMS Durham Symposium, Durham University (291)
6 LMS Northern Regional Meeting, Manchester University
9-13 Stochastic Processes and their Applications Conference, Cambridge (275)
9-13 Progress in Partial Differential Equations, ICMS Edinburgh (288)
9-13 Algebraic Graph Theory Workshop, ICMS Edinburgh (288)
9-13 Singapore-Warwick Workshop in Geometry and Topology, National University of Singapore (291)
9-20 Modern Methods in Scientific Computing and Applications Seminar, Université de Montréal, Canada (287)
15-20 Algorithms for Approximation IV Symposium, Huddersfield University (286)
16-26 Groups, Geometry and Combinatorics LMS Durham Symposium, Durham University (291)
16-27 Stochastic Partial Differential Equations Workshop, Warwick University (287)
24-31 Nonlinear Evolution Equations and Dynamical Systems EuroConference, Isaac Newton Institute, Cambridge (290)
29-2 Aug Teaching of Mathematical Modelling and Applications (ICTMA 10), Tsinghua University, China (284)
30 - 9 Aug Special Structures in Differential Geometry LMS Durham Symposium, Durham University (291)

AUGUST 2001

5-18 Groups-St Andrews, Oxford University (289)
12-19 Homological Conjectures for Finite-Dimensional Algebras Summer School, Nordfjordeid, Norway (275)

SEPTEMBER 2001

12 LMS South Western Regional Meeting, Bristol University
22-23 History of Mathematical Table Making Conference, Kellogg College, Oxford (291)
24-28 Vertical Integration in Biology Workshop, Isaac Newton Institute, Cambridge (291)

JUNE 2002

24-28 Analytic Number Theory Workshop, Max Plank Institute, Bonn (288)

APRIL 2002

7-12 Joint BMC/BAMC, Warwick University

AUGUST 2002

20-28 ICM2002, Beijing, China (272)

The Newsletter is published monthly except in August. Items and advertisements for inclusion in the Newsletter should be sent to the Editor, Susan Oakes, by e-mail, fax or post to the LMS office (addresses below), to arrive before the first day of the month prior to publication.

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