THE LONDON MATHEMATICAL SOCIETY
NEWSLETTER

No. 312 _____ _ February 2003

FORTHCOMING SOCIETY MEETINGS

Friday 28 February 2003 - Edinburgh
Mary Cartwright Lecture
B. Bollobás, J. Chayes
Tuesday 11 March 2003 – Manchester
Northern Regional Meeting
Geometric Representation and Invariant Theory
Wednesday 14 May 2003 – Coventry
Midlands Regional Meeting
Uncertainty Modelling
Friday 20 June 2003 – London
J.C. Rickard, M.J. Taylor

COUNCIL RETREAT 2003

Council of the London Mathematical Society will be holding a retreat during the weekend of 7-9 March 2003, in order to discuss matters of policy more fully than can be done at usual Council meetings. The theme of the meeting will be to look at threats to the future of the mathematics base in the UK, and possible actions by the Society, with sessions on: aspects of the school-university transition; courses, students and staff in university mathematics departments; and research in mathematics. Council would be pleased to hear from members of the key topics that they feel should be addressed in these areas. Please send them to the Executive Secretary at De Morgan House (cooper@lms.ac.uk), preferably by **10 February**.

THE LIBRARY OF THE LONDON MATHEMATICAL SOCIETY

As many members will be aware, the Society possesses a substantial library of its own, consisting of a large collection of periodicals obtained in exchange for the Society's publications, copies of books and journals published by the Society and items acquired by the Society as review copies or gifts.

The Library is housed by University College London and is integrated with the UCL library; so LMS members have access to the combined resources of UCL and the LMS, and may use all the material available in the reading rooms and stores of the UCL Library. The Library's online catalogue (eUCLid) is available via the internet. The insert enclosed with this month s *Newsletter* provides detailed information about this valuable resource and the map shows that it is within easy walking distance of De Morgan House.

Members wishing to use the Library should register to obtain a UCL Library card. Unregistered members will not be refused postal photocopying services but registration is essential before items can be borrowed. This entails filling in a form and providing a passport-size photograph. For personal users, library cards will be provided on the spot at the Issue Desk of the Science Library. Alternatively, members may register by post. You may request the relevant form by post, email, fax or telephone (mentioning membership of the Society) from UCL Library's Admissions Officer. You may also download a Library application form from the Library's website (www.ucl.ac.uk/Library).

R.T. Curtis
LMS Librarian

COLOUR SECTION

With its customary and proper distaste for intemperate action, the Society is proceeding cautiously but steadily toward the aim of redesigning the Newsletter. Meetings with professional design consultants are planned shortly, although traditionalists can be assured that it will be some months before the familiar monochrome A5 leaflet undergoes any startling change.

David Chillingworth
General Editor

WILL LIGHT

Professor W.A. Light, who was elected a member of the London Mathematical Society on 15 November 1985, died on the 8 December, aged 52. He had been Professor of Mathematics in Leicester since 1991, having held posts previously at Lancaster University. Will Light was a Pro Vice Chancellor of the University of Leicester and an editor of the *Journal of Approximation Theory*.

LAST NEWSLETTER

This will be the last Newsletter you will receive if you have not yet paid your 2002/03 LMS subscription, which was due on 1 November 2002. If you have misplaced your renewal of subscription form, which was included with your October 2002 Newsletter, either contact the LMS Office (email: membership@lms.ac.uk; tel: 020 7637 3686; fax: 020 7323 3655) or download the form from the LMS website (www.lms.ac.uk/contact/subscriptions.html).

FRANK SMITHIES

There will be a memorial meeting for Dr Frank Smithies at 12 noon on Saturday 1 March at St John s College Cambridge, followed by a reception. All are welcome. Would you please let Dr Garling (djg1001@cus.cam.ac.uk) know if you intend to be present.

NEW YEARS HONOURS LIST

Congratulations to Toni Beardon, senior teaching and research associate, Cambridge University School of Education, for services to mathematical education, and to Clifford Beavers, Professor of Mathematics, Heriot-Watt University, for services to higher education, who both received OBEs.

NORTH BRITISH FUNCTIONAL ANALYSIS SEMINAR

A meeting of the North British Functional Analysis Seminar (NBFAS) will be held in Fylde College, Lecture Room 2, at the University of Lancaster from 12 noon   5 pm on Saturday 1 March, with a sandwich lunch available in the Fylde Senior Common Room. There will be two talks by Professor Françoise Lust-Piquard of the Université de Cergy-Pontoise, France, who will be speaking on Examples of L^p bounds for the square function of Riesz transforms, (1) in non-discrete settings (Gaussian measure on $\mathbf{R}^n$, Heisenberg groups) and (2) in discrete settings (the Cantor group, $\mathbf{Z}^n$): the Stinespring factorization method . In addition there will be several other speakers, including Professor Alan Hopenwasser of the University of Alabama, USA. For further information please contact the NBFAS secretary Dr Michael Dritschel (m.a.dritschel@ncl.ac.uk).

VISIT OF PROFESSOR D.M. KLIMOV

Professor D.M. Klimov (Russian Academy of Sciences) will be visiting the University of Keele supported by an LMS Scheme 2 grant. He will give the following talks

26 February, 1:45 pm, University of Manchester *Asymptotic methods in nonlinear mechanics*
27 February, 2:00 pm, University of Salford *Mechanics of mixing of viscoplastic media*
5 March, 4:00 pm, University of Keele *Asymptotic methods in nonlinear mechanics*

For further information contact Professor Yibin Fu, Department of Mathematics, Keele University, Staffordshire ST5 5BG (tel: 01782 583650, fax: 01782 584268, email: y.fu@keele.ac.uk).

GAZA LIBRARY PROJECT

The GLP (sponsored by Sir Eric Ash FRS, Sir Michael Atiyah FRS, H.H. Rosenbrock FRS and Sir Magdi Yacoub FRCS) is a UK charity which collects and dispatches books and periodicals to academic and professional libraries in Gaza and the West Bank. Accordingly the GLP is asking for books, continuous long runs of journals and money to help shipment costs. This notice is to urge mathematicians to organise collections in their departments. (Books should be in fairly good condition and can range from A-level to research level. Please do not use this as an opportunity to get rid of books which nobody will read.) Donors should pack books in strong cardboard boxes (university main libraries or bookshops usually have plenty) and then seal them with parcel tape.

It would also be helpful if colleagues could identify individuals in other departments who may be willing to organise collections in their own subjects.

When boxes are ready for dispatch you should contact Michael Payne (secretary to the trustees) at the following email address: 106141.2003@compuserve.com, who will arrange for collection and transport.

STRUCTURAL THEORY OF AUTOMATA, SEMIGROUPS, AND UNIVERSAL ALGEBRA CONFERENCE

A conference on Structural Theory of Automata, Semigroups, and Universal Algebra (SMS-NATO ISI) will be held at the Université de Montréal, Canada, from 7   18 July 2003.

Main speakers to include: J. Almeida (Porto), J. Dassow (Magdeburg), R. Freivalds (Riga), J. Jezek (Prague), A. Krokhin (Oxford), V.B. Kudryavtsev (Acad. Sci. Moscow), A. Letichevsky (Acad. Sci. Kiev), R. McKenzie (Vanderbilt), I. Rosenberg (Montreal), L.N. Shevrin (Ural State), M. Steinby (Turku), M.V. Volkov (Ural State).

The application deadline is **21 February 2003**. Further information and an application form can be obtained from the website (www.dms.umontreal.ca/sms) or email (sms@dms.umontreal.ca).

THE BOLOGNA PROCESS

On 19 June 1999, twenty-nine European education ministers signed up to the 'Bologna Declaration'. This envisaged the creation of a 'European Higher Education Area' to improve the employability and mobility of European citizens and to increase the attractiveness of European higher education to students coming from outside the area.

To achieve this, ministers (including the UK minister) signed up to a common framework for comparable degrees, including a standardization of degree lengths, and to a credit transfer system. The countries involved agreed to introduce any necessary changes by 2010.

The reason that such a far-reaching change has had little publicity in England and Wales is that the Bologna Declaration decided to call the first degree a 'Bachelor' and to specify that the length of study should normally be three to four years. But, as things progress   and in many countries in Europe things have indeed progressed   it becomes clear that the Bologna process will pose problems.

First of all, the official number of hours that UK students study in a year is 1,200, which lies below the 1,400-1,600 range which is official in most European countries. (I do not pretend to know what correspondence there is between official hours and actual study time.) This matters if credit transfer is to be based on hours of study. Universities UK is arguing for credit transfer to be based on 'learning outcomes', but I am not sure whether it is wise to lend any more credence to currently fashionable measures of quality control. I expect that such a course would increase pressure for convergence of curricula.

It is also now clear that the title 'Master' will have to be reserved for postgraduate qualifications, so, by 2010, if not long before, we shall have to reconsider at least the title of our undergraduate Masters degrees. Further, it is likely that an MSc or MA will have to take two years of study after the Bachelor degree (certainly if the qualification is based on length of study).

But, I hear you say, our universities are independent and don't need to agree to any of this. Even setting aside examples of lemming-like behaviour by our institutions, there is reason to believe that there won't be much choice. To sign up to the European Credit Transfer System (and, probably, to keep our degrees recognised as professional qualifications throughout Europe), universities d ve ofhatke 0 mel)Tr

cross-disciplinary meeting held under the sponsorship of the Science Council, following pressure from the LMS and the IMA. A meeting has now been arranged between the Presidents and Executive Secretaries of the LMS and IMA, and the Chairman of HEFCE to discuss the place of mathematics in UK universities. (Actually I, as former President, will represent Peter Goddard and the LMS at the Meeting). Developments are awaited with interest.

(vi)   The LMS has been fostering relations with our USA counterparts, the AMS and SIAM, and it is hoped that joint meetings will emerge.

(vii)   A taxing, time-consuming but very interesting and enjoyable part of the President s duties has been chairing the Prizes Committee; it has been a pleasure to decide on prizes for many fine mathematicians, but also to realise the great strength of the competition, many talented candidates being nominated.

(viii)   During the last few years members of the LMS have worked hard to improve the position of Women in Mathematics, a number of developments having been reported in the LMS *Newsletter*: the Oxford Brookes Mentoring Scheme and the Susan Greenfield Report are two examples.

(ix)   During 2002, the IMA and LMS resolved to institute a David Crighton Medal in memory of the late President of the IMA and President-designate of the LMS. The first recipient will be announced in 2003.

(x)   Following the wishes of her late husband, Ali Fröhlich, Dr Ruth Fröhlich made a very generous and substantial donation to the LMS for a Fröhlich Prize and Fröhlich Lecture to be given in alternate years; the first lecture will be in June 2003.

(xi)   Of concern to the LMS in the last year   or

BRITISH WOMEN IN MATHEMATICS DAY

The 2003 British Woman in Mathematics Day will be held on Tuesday 6 May at De Morgan House. Talks will begin at 11 am, after half an hour of coffee, and end at 4.30 pm, followed by an excursion to a nearby restaurant for an early supper. While this is an occasion particularly for women active in mathematics to get together, men are certainly not excluded. Sessions will include talks by practising women mathematicians in a variety of appointments and at different career stages.

One aim of the day is to encourage women approaching the various interfaces - undergraduate/postgraduate, PhD/Postdoc and so on - at which the proportion of women who stay in mathematics drops significantly; we hope that an opportunity to see women who are active and successful in mathematics, and to meet with them informally over lunch, tea, etc., will have a positive effect on this problem. The organisers would be very grateful if all members could encourage women mathematicians, particularly students (including final year undergraduates) and those at an early stage in their career, to attend this meeting. British Women in Mathematics are very grateful for the support given to this event by the London Mathematical Society. For further information contact Isabelle Robinson at the Society (tel: 020 7927 0800, email: robinson@lms.ac.uk).

INTERNATIONAL REVIEW OF MATHEMATICS
Scientific Secretary

EPSRC has proposed to the Council for the Mathematical Sciences (CMS) that an International Review of UK Mathematics Research should be conducted in 2003.

An International Panel of Experts will be assembled to undertake the Review. The International Panel will be guided by a UK based Steering Group.

The International Panel and the Steering Group will be supported by a Scientific Secretary. It is envisaged that this will be a part-time appointment equivalent to six months work during 2003. Details of the vacancy will be posted imminently on the CMS website (www.cms.ac.uk).

The Scientific Secretary will lead the organisation of the Review under the direction of the Steering Group. The project will include preparation for the visits of the International Panel to selected UK universities, provision of background information and production of the report. Candidates will ideally be well versed in the UK mathematics scene.

EUROMECH FLUID MECHANICS CONFERENCE

The next European Fluid Mechanics Conference will be held in Toulouse (France) from 24
28 August 2003. This conference, organised under the auspices of EUROMECH by the Institut de Mécanique des Fluides de Toulouse, will be the fifth in the series started in Cambridge in 1991 and continued in Warsaw (1994), Göttingen (1997) and Eindhoven (2000). The conference will cover the whole ll

Toulouse, Allée Camille Soula, 31400 Toulouse, France (fax: + 33 (0)5 61 28 59 42, email: efmc2003@imft.fr, web: www.imft.fr/efmc2003).

GROUPS AND MODEL THEORY CONFERENCE
Preliminary Announcement

There will be a two-day meeting at the University of Leeds from 11 - 12 April 2003 on Groups and Model Theory. There will be up to eight main lectures, and up to four contributed talks from postgraduates. Speakers will include:

John Wilson (Birmingham)
Ian Chiswell (Queen Mary, University of London)
Tristram de Piro (Edinburgh)
Ivan Tomasic (Leeds)
Katrin Tent (Würzburg)
Eric Jaligot (Paris)

The first lecture will start at 11 am on 11 April, and the meeting will end about tea-time on 12 April. There will be a registration fee of £10. Some reasonably priced accommodation will be available in Devonshire Hall, or in cheap hotels fairly close to the university. The organisers are able to offer some support for UK-based research students to attend from the London Mathematical Society grant.

There will be a display of posters, and current or recent PhD students are encouraged to submit posters at the meeting. They should let the organisers know beforehand. (pmtjkt@leeds.ac.uk). Note that the British Mathematical Colloquium will be held immediately before this meeting, on 7 10 April (www.mat.bham.ac.uk/bmc/). The conference is supported by the London Mathematical Society and the British Logic Colloquium.

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DYNAMICAL SYSTEMS WITH DELAY AND/OR DISCONTINUITIES

The Dynamics, Bifurcations and Unfoldings Group in the South (DynaBUGS) is holding a meeting on *Dynamical systems with delay and/or discontinuities* on Friday 7 February at the Department of Engineering Mathematics, University of Bristol. Speakers include Chris Budd (Bath), David Chillingworth (Southampton) and researchers at Bristol. For further details contact Bernd Krauskopf (B.Krauskopf@bristol.ac.uk). DynaBUGS gratefully acknowledges financial support from the LMS under Scheme 3, providing some travel and subsistence expenses for participants. Research students are particularly encouraged to attend.

REPORT ON THE LMS MEETING ON 22 NOVEMBER 2002

The two lectures had as their theme the possibility of the emergence of singularities in inviscid fluid flows from given initial conditions.

Professor J.D. Gibbon began his lecture on Singularity formation in the 3D Euler equations with a review of results on the three-dimensional incompressible Euler equations which govern inviscid fluid flow. It is still an open question whether these equations develop a singularity in a finite time; the pre-eminent result belongs to Beale, Kato and Majda (1984) whose theorem says that the time integral of the maximum norm of the vorticity must control any singularity that might develop in any Euler variable, even in arbitrarily high derivatives. This criterion is used by computational fluid dynamicists to check their results. While the general singularity problem remains open, Professor Gibbon showed that a more modest approach can be taken which restricts the analysis to a class of three-dimensional solutions where the third velocity component is linear in z but whose coefficient (and other variables) are functions of x, y and t. The resulting two-dimensional equations were analysed; numerical and other results found by the speaker, in collaboration with K. Ohkitani of RIMS (Kyoto), indicated that a finite time singularity does indeed form. This has been confirmed analytically by P. Constantin (Chicago). The physical manifestation of this class of solutions is a vortex, of infinite energy, with a rich internal structure, which breaks down at the singular time.

Following Professor Gibbon s lecture, the outgoing President, Professor Trevor Stuart lectured on Hydrodynamic stability and singularities . After a brief discussion of the relation of his subject to the problem of turbulence, especially the occurrence of

RECORDS OF PROCEEDINGS AT MEETINGS

ANNUAL GENERAL MEETING

held on *Friday 22 November 2002* at University College London. About 55 members and visitors were present for all or part of the meeting.

The meeting began at 3:15 pm with Professor J.T. STUART, FRS, in the Chair. Dr A.R. Pears and Dr D.J. Collins, Scrutineers, collected ballot papers.

The Treasurer, Professor N.M.J. Woodhouse, presented his annual report, which is published in the January issue of the *Newsletter*. Messrs Baker Tilly were appointed as auditors.

Thirteen people were elected to Ordinary Membership: M. Angelova, C.D. Coman, G. Davis, M. Glendza, L. Gregory, J.B. Griffiths, H. Krause, M. Matthew, G. Röhrle, S.A.R. Stevens, C.F. Townsend, H. Ugail, B.S. Webb; and forty were elected to Associate Membership: R.F. Bailey, P.C. Bartlett, D.L. Bennett, M. Benson, B. Boettcher, R.A. Brownlee, S.G.F. Bushell, C.A.S. Carvalho, E. Clifford, M.D. Cook, S.R. Cowell, C.S.M. Currie, K.K. Dhinsa, N.M. Donaldson, S.C. Edwards, M.D. Finn, C.A. Goldschmidt, J.E. Grabowski, B.K.A. Hoolash, C.L. Irving, H. King, R.H. Levene, V. Lioudaki, M. Johnson, J. Mundinger, G.P. Oliver, E.J. Park, N.H. Powell, M.M. Rahman, S. Rout, R.J. Samworth, N.J.S.N. da Silva, R. Simons, R.E. Thorn, A. Tsygvintsev, A.G. Turner, R.J. Waters, R.J. Whittaker, J.P. Wunderle, S. Zerbes. One member signed the book and was admitted to the Society.

The President, on Council s behalf, presented certificates to the 2002 Society Prizewinners: Polya Prize: Professor N.J. Hitchin, FRS; Naylor Prize: Professor M.H.A. Davis; Whitehead Prizes: Dr A. Corti, Dr M. Csörnyei, Dr C. Teleman. The President announced that Dr K.M. Buzzard was unable to attend the meeting to collect his Whitehead Prize and Professor J.C. Rickard was unable to attend the meeting to collect his Senior Berwick Prize.

Professor J.D. Gibbon gave a lecture entitled Singularity Formation in the 3D Euler Equations .

After tea, the Scrutineers announced the election results. The following Officers and

LMS INVITED LECTURES SERIES

The Society s Invited Lectures series consists of meetings at which a single speaker gives a course of about ten expository lectures, examining some subject in depth, over a five day period (Monday to Friday) during a University vacation. The meetings are residential and open to all interested. It is intended that the texts of the lectures given in the series shall be published. In addition to full expenses, the lecturer is offered a fee of £1250 for giving the course and a further fee of £1500 on delivery of the text in a form suitable for publication. Recent lecturers in the series have been P.F. Baum (1995), F.J. Almgren (1996), J. Alperin (1997), D. Zagier (1998), A. Mielke (1999), B. Dubrovin (2000), T. Goodwillie (2001), P. van Moerbeke (2002).

The 2003 Invited Lectures Series will be given at the University of Wales Swansea by M. Fukushima.

For the 2004 meeting, proposals are now invited from any member who, in addition to suggesting a topic and lecturer, would be prepared to organize the meeting at the member's own institution or a suitable conference centre. Enquiries about this series should be directed to the Executive Secretary, Mr Peter Cooper at the Society (web: www.lms.ac.uk; email: cooper@lms.ac.uk; tel: 020 7637 3686, fax: 020 7323 3655). Programme

LONDON MATHEMATICAL SOCIETY

MARY CARTWRIGHT LECTURE

Friday 28 February 2003

National e-Science Centre,
15 South College Street, Edinburgh

3.30 – 4.00   Béla Bollobás (Memphis/Cambridge)
Models of Large-Scale Real-World Networks

4.30 – 5.00   Tea/Coffee

5.00 – 6.00   Mary Cartwright Lecture
Jennifer Chayes (Microsoft Research)
A Model of Directed Scale-Free Graphs

6.00 – 7.00   Reception

7.00 - 9.00   Dinner

Immediately following this event, there will be a dinner at the Chapterhouse Restaurant, to which participants are invited. The cost will be approximately £23, to be paid at the restaurant.

If you would like to attend this meeting, please register online (http://umbriel.dcs.gla.ac.uk/NeSC/general/esi/events/154/index.html). On-line registration will close on **21 February**. Thereafter registration enquiries should be made direct to the conference administrator (adminteam@nesc.ac.uk).

The e-Science Institute is less than 15 minutes walk from Waverley rail station, and from St Andrews Square bus station. It is approximately 20 minutes by taxi from Edinburgh airport (40 minutes by bus). Visit the website for a map of the area (www.nesc.ac.uk).

There are limited funds available to contribute in part to the expenses of members of the Society or research students to attend the meeting. Requests for support may be addressed to the Programme Secretary at the Society (http://www.lms.ac.uk; email: grants@lms.ac.uk). Requests should include an estimate of expenses and a very brief *curriculum vitae*; research students should include brief letters of endorsement from their supervisors.

LONDON MATHEMATICAL SOCIETY NORTHERN REGIONAL MEETING AND WORKSHOP

Geometric Representation and Invariant Theory

University of Manchester
Meeting 11 March   Workshop 12-15 March 2003

The Northern Regional Meeting of the London Mathematical Society meeting will be held on the afternoon of Tuesday 11 March. There will be a reception and dinner afterwards.

3.00 – 4.00   Jens Carsten Jantzen (Aarhus)
4.00 – 4.30   Tea/coffee
4.30 – 5.30   Victor Ginzburg (University of Chicago)

This will be followed by a Workshop from 12 - 15 March inclusive on Geometric Representation Theory . Expected speakers include:

Jacques Alev (Reims)	George McNinch (Notre Dame)
Henning Haar Andersen (Aarhus)	Ivan Mirkovic (UMASS)
Ivan Arzhantsev (Moscow State)	Dan Nakano (Georgia/Oxford)
Ken Brown (Glasgow)	Dmitri Panyushev (Moscow)
Ranee Brylinski (Penn State)	Patrick Polo (Paris)
Bill Crawley-Boevey (Leeds)	Claus Michael Ringel (Bielefeld)
Alexander Elashvili (Tbilisi)	Serge Skryabin (Kazan/Hamburg)
Iain Gordon (Glasgow)	Helmut Strade (Hamburg)
Ian Grojnowski (Cambridge)	Donna Testerman (EPFL, Lausanne)
Steffen Koenig (Leicester)	Michel Van den Berg (Limburgs)

The scientific organiser is Alexander Premet (University of Manchester, email: sashap@ maths.man.ac.uk).   The organising committee consists of the scientific organiser and the LMS regional organisers, Mike Prest (University of Manchester, email: mprest@maths.man.ac.uk) and Ted Voronov (UMIST, email: voronov@ma.umist.ac.uk). The conference secretary is Francesca Moss (tel: 0161 275 5899, email: francesca@maths.man.ac.uk).

Some funds available to contribute in part to the expenses of members of the Society or research st

LONDON MATHEMATICAL SOCIETY

in association with the Isaac Newton Institute

Spitalfields Day

MONDAY 10 FEBRUARY 2003

Mathematical Aspects of the
Dynamics of Phase Transitions

Organiser: C.M. Dafermos (Providence)
and 0 TD(r)Tj 45d26487 1823 11 76 re 0 TD(r)Tj 45d26487 e f 4487 2551 11 11

JAMES JOSEPH SYLVESTER
DE MORGAN MEDALL

11-15 LMS Northern Regional Meeting & Workshop, Geometric Representation and rl