THE LONDON MATHEMATICAL SOCIETY NEWSLETTER

No. 263 September 1998

FORTHCOMING SOCIETY MEETINGS

Friday-Saturday 16-17 October 1998 - London
Harmonic Analysis
Friday 20 November 1998 - London
Annual General Meeting
L.C. Evans, J.M. Ball (Presidential Address)
Friday-Saturday 12-13 February 1999 - Leeds
Proof and Computation
Friday-Sunday 14-16 May 1999 - Brussels
Joint meeting with the Belgian Mathematical Society

LMS COUNCIL DIARY

One of the main items of business at the Council meeting held on 19 June 1998 was a visit from Dr Alasdair Rose, the new EPSRC Mathematics Programme Manager. At LMS Council's invitation, Dr Rose came to give a presentation in which he described the place of mathematics in EPSRC's business plan and the views of EPSRC on the success of the Mathematics Programme. This was followed by a lively discussion. Although EPSRC does not question the excellence of mathematical research in the UK, it would like the programme to demonstrate more "connectivity" (stronger links between research and users - which EPSRC prefers to mean industry, understood in a broad sense). Whether or not we believe this is fundamentally necessary, it is not an issue we can afford to ignore. One statistic produced at the meeting indicates that annual EPSRC research grant funding per head (measured using the numbers of staff returned in the last RAE) in mathematics is less than one seventh of that in physics (itself the next lowest funded discipline in the EPSRC portfolio). Among other concerns expressed was the likely impact of the withdrawal of long-term EPSRC support for Masters Courses. Given that these are very much directed towards users, we felt that, as far as connectivity was concerned, EPSRC was shooting itself in the foot with this particular initiative.

In the last diary I mentioned discussions about how the Society can ensure it is representative of UK mathematics as a whole, in particular applied mathematics. We are currently looking at possible new publishing ventures in applied mathematics. We also touched on the relationship between the LMS and its sister societies, particularly the IMA. The Presidents and Secretaries of the LMS, IMA and RSS meet as a group on a regular basis, and also (together with the OR Society) have meetings with EPSRC. Council considered that these informal arrangements were working well, and that for the moment there was no need for a more formal framework.

Some time was spent discussing arrangements for the official opening of De Morgan House in October - details are announced in this Newsletter. We also learnt of the appearance of the first issue of the LMS Journal of Computation and Mathematics, which members are invited to peruse at http://www.lms.ac.uk/jcm.

Tony Scholl

OPENING OF DE MORGAN HOUSE

De Morgan House, the new headquarters of the London Mathematical Society, will be opened by Sir Michael Atiyah, OM, FRS, Fields Medallist, in the presence of other Fields Medallists, on Friday, October 23, 1998. To celebrate the opening, the following programme of events has been arranged:

Friday, 23 October
De Morgan House, 57-58 Russell Square:
5.00 pm: Formal opening, followed by a reception.

Saturday, 24 October
Harrie Massey Lecture Theatre, Department of Physics, University College London:
11.00 am: Introduction, by J.M. Ball, FRS, President of the Society
11.20 am: De Morgan to Hardy: the Society's early years, by Robin Wilson
11.55 am: The work of Timothy Gowers, by Bela Bollobas
12.30 pm: The work of Richard Borcherds, by Peter Goddard

De Morgan House, 57-58 Russell Square
1.10 pm Buffet lunch

There will also be a display of Photographs, Posters and Models at De Morgan House.

Because of pressure of space, it will be necessary for members to apply for tickets, both for the Opening on Friday, 23 October and for the Buffet Lunch on Saturday, 24 October, and if necessary a ballot will be held. If so, preference for tickets for the Buffet Lunch will be given to those who are not allocated tickets for the Opening. If you would like to attend either or both occasion, would you please either e-mail the Administrator (lms@lms.ac.uk) or return the form below to reach her by **Thursday, 8 October.**

The Administrator,
De Morgan House,
57-58 Russell Square,
London WC2 4HP

I should like to attend the Opening of De Morgan House on Friday 23 October, and should like to apply for ___ * tickets.

I should like to apply for ____ * tickets for the Buffet Lunch on Saturday, 24 October.

Name: _____

Address: _____

_____

_____

*Two, at most.

LONDON MATHEMATICAL SOCIETY

SPITALFIELDS DAY

Saturday 19 September 1998

International Centre for Mathematical Sciences, Edinburgh

THE IMPACT OF H.F. BAKER'S WORK ON CURRENT MATHEMATICS

12.00 I.M. Krichever (Columbia University, New York & Landau Institute, Moscow)
Hamiltonian Theory of Soliton Equations

14.00 N.J. Hitchin (Oxford University)
Quartic Curves and the Icosahedron

15.00 S. Ramanan (Tata Institute, Bombay)
Moduli of Polarised Abelian Varieties

16.30 S.P. Novikov (University of Maryland & Landau Institute, Moscow)
Topology and Real Physics

Coffee will be available from 11.15, lunch at 13.00 and tea at 16.00.

Chairman: Sir Michael Atiyah (University of Edinburgh)

(These lectures are linked to two ICMS workshops on Integrability and Algebraic Geometry).

Anyone wishing to attend should reserve their place by informing, Tracey Dart, ICMS, 14 India Street, Edinburgh EH3 6EZ (tel: 0131 220 1777, e-mail: icms@maths.ed.ac.uk) **before 15 September.**

NATIONAL UNIVERSITY OF SINGAPORE

LEE KUAN YEW POSTDOCTORAL FELLOWSHIP

Applications are invited from young and outstanding academics for the Lee Kuan Yew Postdoctoral Fellowship. Candidates should be PhD holders who have obtained their PhD degrees in the last few years. They should hold good academic credentials and have published in international refereed journals.

The Fellowship will be tenable for up to 3 years in the first instance, with possible extension for 2 further years. It will be held concurrently with the candidate's appointment as a research staff member in the University working on any of the following research areas:

- Applied Mathematics
- Applied Probability
- Optimization
- Financial Mathematics

Under the Fellowship, a tax-free stipend of US$1,500 per month will be provided. This will be in addition to the following terms of appointment provided to a research staff member:

- Gross annual salary ranges from S$52,500 to S$74,800, with commencing salary depending on qualifications and experience (US$1.00 = S$1.64 approximately).

- Leave and medical benefits will be provided. Other benefits may include: provident fund benefits or an end-of-contract gratuity, a settling-in allowance, subsidised housing, passage assistance and baggage allowance on appointment.

Applicants should send their detailed curriculum vitae and list of publications (including their fax number/e-mail address) and names and addresses of three referees to THE DIRECTOR, PERSONNEL DEPARTMENT, NATIONAL UNIVERSITY OF SINGAPORE, 10 KENT RIDGE CRESCENT, SINGAPORE 119260, TELEFAX : (65) 778 3948 OR INTERNET: perleesk@nus.edu.sg.

Closing date: **30 September 1998.**
Only shortlisted candidates will be notified.

ISAAC NEWTON INSTITUTE FOR MATHEMATICAL SCIENCES SCIENTIFIC STEERING COMMITTEE

The current membership of the Scientific Steering Committee, and the terms of appointment of the present members, are as set out below:

		Nominating Body	End of Service
Professor Sir Christopher Zeeman FRS (Chairman)	Oxford		31/12/98
Professor HK Moffatt FRS (Director)			
Professor Sir Michael Berry FRS	Bristol		31/12/99
Professor J-M Bismut	Orsay		31/12/98
Professor M Cates	Edinburgh		31/12/98
Professor S Donaldson FRS	Stanford	EPSRC	31/12/98
Professor N Hitchin FRS	Oxford	LMS	31/12/01
Professor A Newell	Warwick		31/12/00
Professor BD Ripley	Oxford	EPSRC	31/12/99
Professor AFM Smith	Imperial	EPSRC	31/12/00
Professor JF Toland	Bath	LMS	31/12/99
Professor S White	Munich	PPARC	31/12/01
Professor D Zagier	Bonn		31/12/01

(One additional member may be co-opted by the Committee)

As indicated, three members are nominated by EPSRC, one by PPARC and two by LMS. The remainder are appointed by the General Board of the University of Cambridge after consultation with the Royal Society, the Royal Society of Edinburgh, the Royal Statistical Society, the Institute of Physics, the Fellowship of Engineering, the Institute of Mathematics and its Applications and the Edinburgh Mathematical Society.

Four members will retire on 31 December 1998, and the process of consultation regarding new appointments (for 4 years from January 1999) is now under way. It is desirable to maintain a broad representation both over the full range of the mathematical sciences, and over UK Universities. The Chairman of the SSC is appointed by the General Board from among the members of the SSC (other than the Director) for a period of not more than three years.

Members of the UK Mathematical Sciences Community may wish to make their views known, and are invited to do so either through any of the above bodies that are consulted or directly to the Director of the Institute (e-mail: hkm2@newton.cam.ac.uk).

COLLINGWOOD MEMORIAL PRIZE

This prize was established by the London Mathematical Society in memory of Sir Edward Collingwood, and is awarded annually to a student of the University of Durham obtaining First Class Honours in mathematics and entering a course of post-graduate study. The 1998 prize is awarded to Mr T.C. Benton, St Aidan's College, who is intending to do research in Statistics.

SET THEORY, ANALYSIS AND THEIR NEIGHBOURS

A one-day conference on Set Theory, Analysis and Their Neighbours, will take place on Thursday 17th September 1998 at the new London Mathematical Society building, De Morgan House, 57-58 Russell Square, London WC1. The meeting will start at 11 am, with the first talk starting at 11.30 am. The meeting is the first of what is intended to be a series taking place about three times a year.

There has recently been a confluence of interests in set theory and analysis in a variety of ways. Examples include Gowers' dichotomy theorem in functional analysis, Hjorth's work on turbulence in descriptive dynamics, and Dales and Woodin's work on super-real fields. Our aim is to provide a forum for lectures on wide range of developments in these and similar areas, and to encourage communication and interaction between people working in them and in other related subjects.

The speakers will be:

- Garth Dales (Leeds), "Super-real Fields"
- Mirna Dzamonja (UEA), "Universal Models"
- Ilijas Farah (York U, Toronto), "Analytic Ideals"
- David Fremlin (Essex), "tba"
- Greg Hjorth (UCLA) (to be confirmed)

More details are available on the web page (http://www.ucl.ac.uk/Mathematics/Seminars/staatn.html). It is hoped to keep the meetings fairly relaxed, allowing plenty of opportunity for informal discussion. We welcome and encourage anyone to participate. Do tell anyone about the meeting who you think may be interested in it. We would also be grateful if you could e-mail us with their e-mail address so that we can keep a mailing list of possible attenders. Let us know if you would like to speak or have ideas for speakers at future meetings. Some limited funds are available from the LMS, to subsidise the travel expenses of graduate students who would like to attend. For details contact Mirna Dzamonja (m.dzamonja@uea.ac.uk) or Charles Morgan (charles.morgan@ucl.ac.uk). We are grateful to the LMS both for funding for the meeting and for allowing us to use De Morgan House as a venue.

ON GROWTH AND FORM: SPATIO-TEMPORAL PATTERNING IN BIOLOGY

An international meeting, supported by The Society for Mathematical Biology, The European Society for Mathematical and Theoretical Biology, SmithKline Beecham Bioinformatics, The London Mathematical Society, The Edinburgh Mathematical Society, The British Society for Developmental Biology, and The Wellcome Trust, will mark the occasion of the 50th anniversary of the death of D'Arcy Wentworth Thompson. The topics under discussion at the meeting will be pattern formation in developmental biology, pattern formation in reaction-diffusion systems, pattern formation in intercellular systems, and pattern and form in morphometrics.

The local Organizing Committee is: M.A.J. Chaplain, J. Crawford, P. Smith, C. Weijer, S. Hubbard, R. Herbert, G.D. Singh, P. Slater (St. Andrews), J. McLachlan (St Andrews); and the Scientific Advisory Committee is: J.D. Murray, L. Wolpert, B. Goodwin.

The meeting, to be held at the Centre for Nonlinear Systems in Biology, University of Dundee, Dundee, Scotland, will begin on Sunday 20th September 1998, finishing on Thursday 24th September 1998. The meeting will evolve by focussing in turn on each of the following topics:

- On the Growth of Form
- On the Mathematics of Form
- On the Dynamics of Form
- On the Description of Form
- On the Form of Form

The daily programme will consist of plenary talks, workshop sessions, poster presentations and discussion sessions. Each day will focus on one of the topics listed above and the invited talks will be of 45 minutes in length, with an additional 15 minutes allocated for a short question/discussion period. There will be three plenary talks, of one hour duration, during each morning session punctuated appropriately with a coffee/tea/refreshment break. After lunch there will be a workshop session which will take the format of a poster presentation session open to all other participants. The final plenary talk will immediately be followed by a discussion session.

We would expect and strongly encourage a significant number to be graduate students and young post-doctoral researchers. There will also be a permanent display of specimens from the University's D'Arcy Thompson Museum throughout meeting.

Full details are available from the conference web-site http://www.mcs.dundee.ac.uk:8080/~darcy98/ or from a link at http://www.mcs. dundee.ac.uk:8080/.

Registration by e-mail or from the conference web-site is preferred. However, copies of registration forms will also be available on request from Dr M.A.J. Chaplain, Department of Mathematics, University of Dundee, Dundee DD1 4HN, tel: 01382 345369, fax: 01382 345516, e-mail: chaplain@mcs.dundee.ac.uk, http://www.mcs.dundee.ac.uk:8080/~ chaplain/.

EDINBURGH MATHEMATICAL SOCIETY
1998-99 Meetings

Meetings to be held are: 23 October (AGM, Edinburgh) L.N. Trefethen; 20 November (Strathclyde) I.D. Abrahams; 11 December (Napier) C. Brezinski; 15 January (Edinburgh) J.R. Partington; 12 February (Edinburgh) G.D. James; 12 March (Abertay) J. Sherratt; 7 May (Stirling) W. Jackson; 4 June (Aberdeen) A. Rendall.

Further information is available from the Honorary Secretary, Dr P. Heywood, Department of Mathematics and Statistics, JCMB, King's Buildings, University of Edinburgh, Mayfield Road, Edinburgh EH9 3JZ (philip@maths.ed.ac.uk).

LONDON MATHEMATICAL SOCIETY
NOTICE OF GENERAL MEETING

There will be a General Meeting of the Society on Friday 16 October 1998 at 5.00 pm in London, to consider a proposal by the Council of the Society to delete the existing By-Laws II,1, and II,3 and to substitute those printed below.

The effect of these changes is to increase the annual subscription of Ordinary Members for 1998-99 by £1 and of Associate Members by 50p, and to increase the annual subscription of Corporation and Institutional Members for 1998-99 to £521 from the 1997-98 level of £504. The prices per volume of the *Bulletin*, the *Journal* and the *Proceedings* to individual members for 1998-99 will also be increased by £1.

Text of the proposed By-Law II,1
The annual subscription to the Society of Ordinary Members for the 1998-99 session shall be £19.00. The annual subscription to the Society of Associate Members for the 1998-99 session shall be £5.50. The prices of the Society's periodicals to Ordinary, Associate and Reciprocity Members for the 1998-99 session shall be: *Proceedings* £18.50 per volume, *Journal* £18.50 per volume, *Bulletin* £18.50 per volume.

Text of the proposed By-Law II,3
The annual subscription to the Society of Corporation and Institutional Members for the 1998-99 session shall be £521, inclusive of one volume of the *Bulletin* and two volumes of the *Journal* and of the *Proceedings*, except that those Corporation and Institutional Members who have more than one Representative shall pay an additional subscription of £19.00 for each Representative in excess of one.

J.S. Pym
Council and General Secretary

The University of Sydney
AUSTRALIA

Research Associate/Senior Research Associate

School of Mathematics and Statistics

Reference No. A27/03

The successful applicant will be part of the ARC funded project "Group Representation Theory and Cohomology of Algebraic Varieties".

Preference will be given to applicants with expertise in all or some of the following areas: Lie and algebraic groups; geometry and topology of manifolds; group representations on cohomology spaces, Schubert varieties; reflection groups, Hecke algebras, discriminant varieties and quantum groups; representation of algebras. Applicants should have, or expect to receive shortly, a PhD or equivalent qualification, and should have a strong record of publication of original research in the above areas. The School has a large network of high performance work stations to support both research and teaching.

The position is available for 12 months in the first instance. There is the possibility of further offers of employment up to two years, subject to funding and need. For further information contact Professor G Lehrer, phone 61 2 9351 2976/2977, fax 61 2 93514534, email G.Lehrer@maths.usyd.edu.au or R.Howlett@maths.usyd.edu.au

Salary: Senior Research Associate A$47,029 -A$55,848 p.a. Research Associate A$32,921 - A$44,677 p.a. (Level of appointment and responsibility will be commensurate with qualifications and experience)

Closing: 29 October 1998

Applications must address the selection criteria including: Reference No, curriculum vitae and the names, addresses and phone nos of two confidential referees to: The Personnel Officer, College of Sciences and Technology, Carslaw Building, (F07), The University of Sydney, NSW, 2006 Australia.

Equal employment opportunity and no smoking in the workplace are University policies. The University reserves the right not to proceed with any appointment for financial or other reasons. See http://www.usyd.edu.au/

59536

SIR JAMES LIGHTHILL

Sir James Lighthill died on 17 July 1998, aged 74. He was awarded the first LMS Naylor Prize in 1977.

DR JAMES COSSAR

Dr James Cossar, who was elected a member of the London Mathematical Society on 14 December 1933, has died recently.

MEETING OF THE SOCIETY

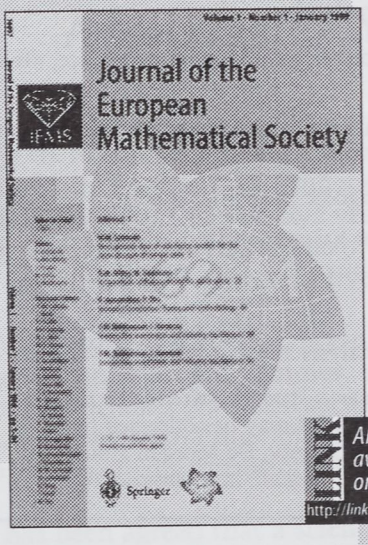
A meeting was held on Friday 19 June 1998 at Birkbeck College, Professor J.M. Ball, FRS, President, in the Chair. There were present about 45 members and visitors.

Eleven people were elected to Ordinary Membership: F.R.M. Al-Solamy, T.D. Blackmore, J.P.D. Campbell, S.M. Colwell, I. Gyongy, P.E. Kahn, C. List, B. Pelloni, B.A. Rhule, W. F. Shadwick, C.A. Wilkins; two people were elected to Associate Membership: R. Bhattacharyya and M. M. Jones; and three people were elected to Reciprocity Membership: B. Branner (Dansk Mathematisk Forening), J. Ewing and F. Mennella (both of the American Mathematical Society).

The President, on Council's behalf, proposed that Professor Stephen Smale be elected to Honorary Membership of the Society and read a shortened version of the citation. He also announced, on Council's behalf, the award of the 1998 De Morgan Medal to Professor R.A. Rankin, the 1998 Senior Berwick Prize to Professor E.B. Davies, FRS, and 1998 Junior Whitehead Prizes to Dr S.J. Chapman, Dr I. Rivin and Dr J. Nekovar, and read short versions of the citations. The President presented Certificates to Professor J.H. Coates, FRS, winner of the 1997 Senior Whitehead Prize, and to Dr A. Grigoryan, winner of a 1997 Junior Whitehead Prize.

Professor C. Soulé gave a lecture on 'Perfect forms and the Vandiver conjecture' and Professor J.H. Coates gave a lecture on 'Euler characteristics and elliptic curves'.

New journal from Springer



Journal of the European Mathematical Society

Editor-in-Chief:
J. Jost, Leipzig

Editors:
L. Ambrosio, Pisa;
G. Ben-Arous, Lausanne;
J. Coates, Cambridge;
H. Hofer, New York/NY;
S. Merkuryev, Los Angeles/CA

Associate Editors:
V. Baladi; O. Barndorff-Nielsen;
D. de Concini; J.-M. Coron;
S. Donaldson; W. Kendall;
J. Kollár; A. Lasota; E. Looijenga;
S. Luckhaus; I. Madsen; Mrozek;
S. Novikov; P. Pansu; A. Parshin;
A. Quarteroni; C. Voisin;
G. Ziegler

JEMS is the **journal of the European Mathematical Society**. The Society, founded in 1990, works at promoting joint scientific efforts between the many different structures that characterise European mathematics.

It will publish research articles in all active areas of pure and applied mathematics: these will be selected, by a distinguished, international board of editors and associate editors, for their outstanding quality and interest, according to the highest international standards. Occasionally, substantial survey papers on topics of exceptional impact will also be published. The preferred language of publication is English.

Electronic submission is encouraged, for the sake of speedier handling. JEMS will be available online as well as in print, from the first issue.

Subscription information for 1998:
Volume 1, 4 issues
DM 396,-

Personal subscription price
for members of the European
Mathematical Society:
DM 80,-
(including carriage charges)

ISSN 1435-9855 Title No. 10097
ISSN electronic edition: pending

Please order from
Springer-Verlag Berlin
Fax: + 49 / 30 / 8 27 87- 448
e-mail: subscriptions@springer.de
or through your bookseller

Plus carriage charges.
Price subject to change without notice.
In EU countries the local VAT is effective.
Errors and omissions excepted.

Springer

LONDON MATHEMATICAL SOCIETY
Two-Day Meeting

Friday-Saturday 16-17 October 1998 - London
Harmonic Analysis

A. Carbery:	Inverting the n-dimensional Fourier transform: convergence, divergence and localisation
G. David:	Regularity properties for global minimizers of the Mumford-Shah functional
T.A. Gillespie:	Spectral decompositions and ergodic multiplier theory
C. Kenig:	On free boundary regularity for harmonic measure and Poisson kernels
C. Thiele:	Bilinear singular integrals
A. Volberg:	Nonhomogeneous harmonic analysis and capacities

There are limited funds available to help research students attend the meeting. Request for support and any other enquiries may be addressed to Dr D.J.H. Garling, London Mathematical Society, De Morgan House, 57-58 Russell Square, London WC1B 4HP (e-mail: lms@lms.ac.uk).

UNIVERSITY OF
OXFORD

Professorship of Mathematical Logic

The electors intend to proceed to an election to the Professorship of Mathematical Logic with effect from 1 October 1999 or such later date as may be arranged.

A non-stipendiary fellowship at Merton College is attached to the professorship.

Applications (ten copies, or one only from overseas candidates), naming three persons who have agreed to act as referees on this occasion, should be received not later than 16 November 1998 by the Registrar, University Offices, Wellington Square, Oxford OX1 2JD, from whom further particulars may be obtained.

The University is an Equal Opportunities Employer.

EPSRC-LMS

Additional Instructional Courses

One or two Instructional Courses (three six-lecture course in a week principally for Research Students) have been sponsored by EPSRC and LMS in each of the past five years. Following recent discussions with the Mathematics Programme of EPSRC, LMS is now considering ways of expanding the scheme to five or six courses per year.

With a switch in the balance of EPSRC resources towards vocational training in MSc programmes, this enhancement of the Instructional Courses Scheme (ISC) is a recognition of its success so far (the modest scale notwithstanding) and the now even greater need for mathematics postgraduate education in the UK in the immediate future.

It has been agreed that a scientific strategy for the new ISC will be in the hands of the Durham Symposium Committee with additional EPSRC representation. It is expected that this group will both generate proposals and respond positively to unsolicited proposals from representatives of the entire spectrum of pure and applied mathematics.

As the LMS prepares this further collaboration with EPSRC it seeks the advice of its membership about the organisation of the ISC, and any other matters that appear relevant. Of particular interest is the expansion of the range of subjects covered by ISC, and how it can be widened, for example to cover more applied mathematics subjects (including, for example, numerical analysis and computer algebra).

LMS is now asking for explicit guidance on matters relating to scientific planning, geographical distribution of conferences and their frequency. Indeed input on any aspect of the organisation will be welcome.

Please send your ideas to Dr D.J.H Garling at De Morgan House, or by e-mail to (d.j.h.garling@dpmms.cam.ac.uk) before **30th September 1998** if you wish to contribute to these important decisions.

LMS PRIZES 1998

De Morgan Medal

The De Morgan Medal is awarded to ROBERT A. RANKIN of Glasgow University. He has made many major contributions to the theory of numbers, and in particular to the theory of modular forms. His work extends over a broad range of central problems, and his papers show both great scholarship and mathematical taste that was often well ahead of its time. His most striking achievements include new estimates of the differences between consecutive prime numbers, results on the distribution of zeros of Poincaré series, and work on cusp forms and the number of representations of an integer by the sum of eight or more squares. His method of constructing modular forms by taking the derivatives of a given modular form and combining them suitably has become a very powerful standard tool. However, his most remarkable papers are his seminal *Contributions to the theory of the Ramanujan tau function and similar arithmetical functions*. These gave birth to the highly influential method now usually known as the Rankin-Selberg method. The immediate application of his method was a non-trivial estimate for the coefficients of modular forms; it was used by Deligne and Serre in their work relating cusp forms to Artin L-functions, and the spirit of this method influenced Deligne's proof of the Weil Conjectures.

Senior Berwick Prize

BRIAN DAVIES FRS, Professor at King's College, London, is awarded the Senior Berwick Prize on the basis of his survey article *L^r Spectral Theory of Higher Order Elliptic Operators* (Bull. London Math. Soc. 29 (1997) 513-546), which is representative of his tremendous contributions to the development of operator theory, his fundamental work on heat semigroups, and his more recent work on higher-order operators. Throughout his career Brian Davies has shown an unchallenged clarity of exposition, and novelty and imagination in his mathematics. He has played a large and essential part in the complete review that has taken place in our understanding of diffusion equations and is now making important contributions to the higher-order case. His research is both of basic mathematical importance and contributes directly to physics and probability. Many of his results are already classics profoundly influencing the work and perspectives of others.

Junior Whitehead Prizes

JONATHAN CHAPMAN is awarded a Junior Whitehead Prize for his contributions to the mathematical theory of superconductivity and to other areas of applied mathematics. In superconductivity he wrote a landmark thesis that set the ground for a concerted international mathematical attack on the Ginzburg-Landau model, which has led to many original mathematical results, some of them highly relevant to the physical and technological communities. By developing new methodologies for high-precision asymptotics for differential and difference equations, he resolved several outstanding problems in theoretical mechanics and also proposed an improved ray theory that systematically incorporates complex ray contributions. Other important contributions include a simple explicit construction for isospectral drums with different rectilinear boundaries.

A Junior Whitehead Prize is awarded to JAN NEKOVAR of Cambridge University. His work is characterised by his powerful use of a wide range of sophisticated tools from modern arithmetic algebraic geometry, which he has brought to bear on a number of important problems. Amongst his best work is: his extension of Kolyvagin's method to higher weight modular forms; his theory of p-adic height pairings for very general Galois representations; his analogue of the celebrated Gross-Zagier result, relating the first derivative of the p-adic L-function of certain new forms to the p-adic heights of Heegner cycles. These three pieces of work may be seen to combine together to relate p-adic L-func-

tions and Selmer groups in line with a p-adic version of the Bloch-Kato conjectures. Dr Nekovar's current work on syntomic regulators is a deep development with interesting applications to algebraic cycles; a particular high-point is the proof it provides of Schneider's p-adic points conjecture. This is a major project which is central to current developments in arithmetic algebraic geometry.

IGOR RIVIN, of Warwick University, is awarded a Junior Whitehead Prize for his work on hyperbolic geometry. Rivin gave, in his thesis, a complete description of the possible dihedral angles of compact convex polyhedra in hyperbolic three-space, and subsequently (with C. Hodgson) developed further techniques to understand the finite volume case. These results have remarkable consequences. One is that the face angles of a convex polyhedron in hyperbolic or Euclidean three space determine it up to congruence. Another answers a question raised by Steiner in 1832 by giving an elegant characterization of the Euclidean polyhedra which can be inscribed in a sphere. Subsequently he has studied the relation between ideal hyperbolic polyhedra and local Euclidean structures on triangulated surfaces, and has solved many important non-linear problems in hyperbolic geometry by transforming them into tractable linear ones.

MATHFIT
Call for Proposals

The EPSRC/LMS MathFit initiative is entering its third year, and continues to support high quality interdisciplinary research in the application of novel mathematical techniques to problems in computer science through responsive mode grants, visiting fellowships and summer schools and workshops.

MathFit responsive mode grants and visiting fellowships are supported by EPSRC and should be submitted through the usual EPSRC channels: there are no closing dates. Visiting Fellowship applications to support transfer of personnel between complementary departments in different UK Universities are particularly welcomed. Your attention is also drawn to the EPSRC Fast Track scheme for young investigators, to the possibility of applying for a research grant to fund a research studentship and to the EPSRC Postdoctoral fellowship scheme.

MathFit summer schools and workshops are supported by the LMS and EPSRC, which gives a particular flexibility to the format. Events have included specialist research student training days attached to a regular conference, invited lecture series by overseas experts and informal research workshops on new interdisciplinary areas. Applications for MathFit summer schools and workshops to take place in 1999 are now invited: the deadline for receipt of applications is **9 October 1998** and decisions should be made by the end of 1998.

Full details of the MathFit programme, including priorities, previous events, and how to apply for funding, can be found on the MathFit web pages at http://www-theory.dcs.st-and.ac.uk/~um/mathfit.html or by contacting one of the coordinators, for the EPSRC Mathematics programme Mrs Anne Farrow (tel: 01793-444110, e-mail: anne.farrow@epsrc.ac.uk), for the EPSRC IT and computer science programme Dr Dominic Semple (tel: 01793-444318, e-mail: dominic.semple @epsrc.ac.uk) and for the LMS Professor Ursula Martin of the University of St Andrews (tel: 01334 463252, e-mail: um@dcs.st-and.ac.uk).

NORTH BRITISH FUNCTIONAL ANALYSIS SEMINAR

meeting of the North British Functional Analysis Seminar will be held at the Department of Mathematics in University Gardens of the University of Glasgow, from 2.30 pm on Friday 30th until 12 noon on Saturday 31st October 1998. The speakers will be Mr Steen Thorbjørnsen (Odense) on Friday and Dr Etienne Blanchard (Luminy) on Saturday. For further information please contact Dr G. Blower, Lancaster University (e-mail: G. Blower@lancaster.ac.uk).

A K Peters, Ltd.

Publishers of *Experimental Mathematics*

Forthcoming in Volume 8

Andrew Odlyzko, Michael Rubinstein, and Wolf Marek: Jumping champions

A. I. Bobenko and W. K. Schief: Affine spheres: discretization via duality relations

Oscar E. Lanford: Some informal remarks on the orbit structure of discrete approximations to chaotic maps

Robert L. Benedetto and William Goldman: The topology of the relative character varieties of a quadruply punctured sphere

Ilan Vardi: Prime percolation

John Milnor: Pasting together Julia sets

Gert Almkvist: Asymptotic formulas and generalized Dedekind sums

Amadeu Delshams and Rafael Ramírez-Ros: Singular separatrix splitting and the Melnikov method

Gerald Allison, Avner Ash, and Eric Conrad: Galois representations, Hecke operators, and the mod-*p* cohomology of GL(3, **Z**) with twisted coefficients

Gauss aimed at mathematical truths "through systematic experimentation."

To any aspiring Gauss: How about a *submission*?

To any admirers of Gauss: How about a *subscription*?

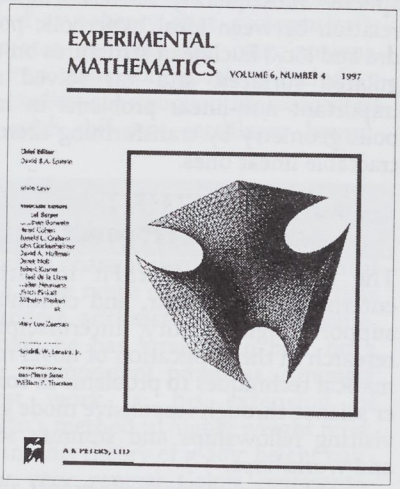
Experimental Mathematics

Chief Editor:
David B. A. Epstein

Editor:
Silvio Levy

Associate Editors:
Marcel Berger
Jonathan Borwein
Henri Cohen
Ronald L. Graham
John Guckenheimer
David A. Hoffman
Derek Holt
Robert Kusner
Rafael de la Llave
Walter Neumann
Wilhelm Plesken
Peter C. Sarnak
Tan Lei
Jean Taylor
Roderick Wong
Mary Lou Zeeman

Advisory Board:
Hendrik W. Lenstra
Albert Marden
David Mumford
Jean-Pierre Serre
William P. Thurston



A K Peters, Ltd.

63 South Avenue Natick MA 01760

Tel: (508) 655-9933 Fax: (508) 655-5847

service@akpeters.com www.akpeters.com

OUP and AMS

A Partnership in Mathematics

NEW IN PAPERBACK

Graph Theory 1736-1936

Norman L. Biggs, E. Keith Lloyd, and Robin Wilson

First published in 1976, this book builds on a set of original writings from some of the founders of graph theory, and traces the historical development of the subject through a linking commentary.

240 pp, September 1998
0-19-853916-9 Paperback **£20.00**

NEW IN PAPERBACK

Introduction to Symplectic Topology

Second Edition

Dusa McDuff and Dietmar Salamon

An established text in this fast-developing area of mathematics, this second edition has been significantly revised and expanded, with new references and examples added and theorems included or revised.

Oxford Mathematical Monographs

512 pp September 1998
0-19-850451-9 Paperback **£35.00**

Atlas of Graphs

Ronald C. Read and Robin J. Wilson

This invaluable resource provides a comprehensive catalogue of over 10,000 graphs, with accompanying tables of parameters and properties.

464 pp, September 1998
0-19-853289-X Hardback **£75.00**

Profinite Groups

John S. Wilson

This book, dedicated entirely to profinite groups, provides a comprehensive overview of the subject, including several major theorems presented in an accessible form.

London Mathematical Society Monographs No. 19

304 pp, September 1998
0-19-850082-3 Hardback **£60.00**
LMS MEMBERS PRICE **£45.00**

A History of Mathematics

Florian Cajori

524 pp Chelsea Publishing Co./American Mathematical Society, July 1998
0-8284-0203-5 Hardback **£11.50**

Partial Differential Equations

Lawrence C. Evans

This text gives a comprehensive survey of modern techniques in the theoretical study of partial differential equations with particular emphasis on nonlinear equations.

Graduate Studies in Mathematics No. 19

712 pp American Mathematical Society, July 1998
0-8218-0772-2 Hardback **£45.00**

Jacques Hadamard, A Universal Mathematician

Vladimir Maz'ya, and Tatyana Shaposhnikova

This work provides an inspiring view of the development of various branches of mathematics during the nineteenth and twentieth centuries.

History of Mathematics No. 14

507 pp American Mathematical Society/London Mathematical Society 1998
0-8218-0841-9 Hardback **£52.00**

Members of the LMS are entitled to the same discount as members of the AMS (40%) when ordering titles from the History of Mathematics series direct from OUP.

http://www.oup.co.uk
and free email subscription service
http://www1.oup.co.uk/academic/

To order direct by credit card, call either of the following two numbers, please have your details with you when you dial. Please quote the code LMS998.

Tel: +44 (0) 1536 454534
or
Fax: +44 (0) 1536 454518

Prices and extents are subject to change.

Oxford University Press
Innovation • Excellence • Tradition

WORKSHOP ON QUANTIZATION, OPERATOR ALGEBRAS, AND KNOT THEORY

This workshop will focus on the interaction between von Neumann algebras, C*-algebras, quantum groups, deformation quantization, knot theory, E-theory, and groupoids. Pedagogical overviews as well as research seminars will be presented by D.E. Evans, V. Jones, S. Majid, G. Nagy, A.J.L. Sheu, L.Takhtajan, V. Turaev, A. van Daele, R. Dijkgraaf(*), H. Upmeier(*), and others; (*) to be confirmed.

The workshop will take place from 8th - 10th October, 1998, and will be held at the Technical University Twente, Enschede, The Netherlands (8th and 9th) and at the University of Amsterdam, Amsterdam, The Netherlands (10th). (Detailed timetable and locations in Enschede and Amsterdam to be announced).

The organizers are Gerard Helminck, Tom Koornwinder, Klaas Landsman, and Johan vd Leur. Those interested in participating are kindly requested to e-mail g.f.helminck@math.utwente.nl, with cc to npl@wins.uva.nl and vdleur@math.utwente.nl, as soon as possible. All information will be posted at the website (http://turing.wins.uva.nl/~npl/QOAN.html).

SUMMER SCHOOLS ON REPRESENTATIONS OF GROUPS AND ALGEBRAS

This is a series of four Summer Schools, supported by the TMR Programme of the European Union. The objective is to provide an efficient training for young researchers who are interested in new trends in representation theory. Each School will have two parts; it will start with a 'Compact Seminar', in which the young participants take the active role; this will be followed by a 'Workshop', with lectures by leading experts of the field.

Summer School 1998 'Character sheaves: Springer Correspondence', Picquigny, France, 21-28 September 1998. Theme: Character sheaves were developed to understand the irreducible characters of finite groups of Lie type. The participants will read through Shoji's article in Astérisque 168. In the last part there will be series of lectures by T.A. Springer and by T. Shoji. Organizers: A. Zimmermann (Amiens; alex@math.jussieu.fr), M. Geck (Paris 7), J. Michel (Paris 7/Amiens), M. Eftekhari (Amiens). Additional support for this event is provided by CNRS, the French National Science Foundation.

Summer School 1999 'Hall Algebras', Hesselberg, Germany, 22-29 August 1999 (preliminary). Theme: Hall algebras provide an algebraic approach to the combinatorics of a root system, and they can be used to prove the existence of Lusztig and Kashiwara's canonical bases for quantum groups. Organizers: D. Happel (Chemnitz; happel@mathematik.tu-chemnitz.de), K. Erdmann (Oxford), S. König (Bielefeld).

Summer School 2000 'Geometry of Quiver-Representations and Preprojective Algebras', Isle of Thorns, UK, 10-17 September 2000 (preliminary). Theme: The use of algebraic geometry in representation theory. Topics will be degenerations of modules, the theorem of Kac, moduli spaces of representations, geometry of preprojective algebras and quiver varieties. Organizers: K. Erdmann (Oxford; erdmann@maths.ox.ac.uk), W.W. Crawley-Boevey (Leeds), Ch. Geiss (at present UNAM, Mexico).

Summer School 2001 'Homological Conjectures for Finite-Dimensional Algebras'. Nordfjordeid, Norway, 12-19 August 2001 (preliminary). Theme: Certain homological conjectures will be studied, in particular the finitistic dimension conjecture and the (generalized) Nakayama conjecture. Topics will include resolutions and syzygies, homologically finite subcategories, geometric aspects, infinitely generated modules. Organizers: Ø. Solberg (Trondheim; oyvinso@math.ntnu.no), P. Dräxler (Bielefeld), H. Krause (Bielefeld). Scientific coordinator: K. Erdmann (Oxford; erdmann@maths.ox.ac.uk).

Young researchers (i.e. aged under 35)

from the EU and associated countries are especially invited to participate. They can apply for full support both for travel and for their local expenses. The TMR programme wishes to encourage in particular researchers whose place of work is in a less-favoured region, and women researchers. For further details and application forms, see http://www.mathematik.uni-bielefeld.de/~sek/summerseries.html or contact the organizers or coordinator.

ALGEBRAIC GEOMETRY AND INTEGRABLE SYSTEMS

This Workshop will take place in Edinburgh from 20 to 22 September 1998 in the headquarters of the International Centre for Mathematical Sciences situated at 14 India Street, the birthplace of James Clerk Maxwell. On Saturday 19 September there will be a Spitalfields Day meeting supported by the London Mathematical Society when four lectures of a general nature will be given by distinguished speakers.

The overall aim of the workshop is to consolidate the understanding of the interactions between algebraic geometry and ideas in integrable systems and mathematical physics. Emphasis will be laid on the algebraic geometric ideas introduced and studied by H F Baker which have been applied so successfully in recent years and which will, undoubtedly, find further applications.

Some of the particular topics that will be discussed in the workshop are

- The role of Baker functions in the study of completely integrable systems, such as KdV, KP and the sine-Gordon equations.
- The construction of solutions of equations of KdV type associated with algebraic curves.
- Quantum integrability and non-linear discrete time integrable equations.
- The role of moduli spaces of geometric structures in the physics of certain super-symmetric gauge or string theories.
- The ansatz of Seiberg and Witten which establishes deep connections between N=2 super-symmetric theories and algebraic geometric methods in soliton theory.
- The recent work of Babelon, Smirnov and Bernard which discusses a quantum problem where the computation of form-factors is linked with the study of the Baker-Akhiezer function.

The members of the Organising Committee are: V.M. Buchstaber (Moscow), V.Z. Enolskii (Kiev) and I.M. Krichever (Columbia), Chairman; the Local Organisers are: J.C. Eilbeck (Heriot-Watt) and E.G. Rees (Edinburgh)

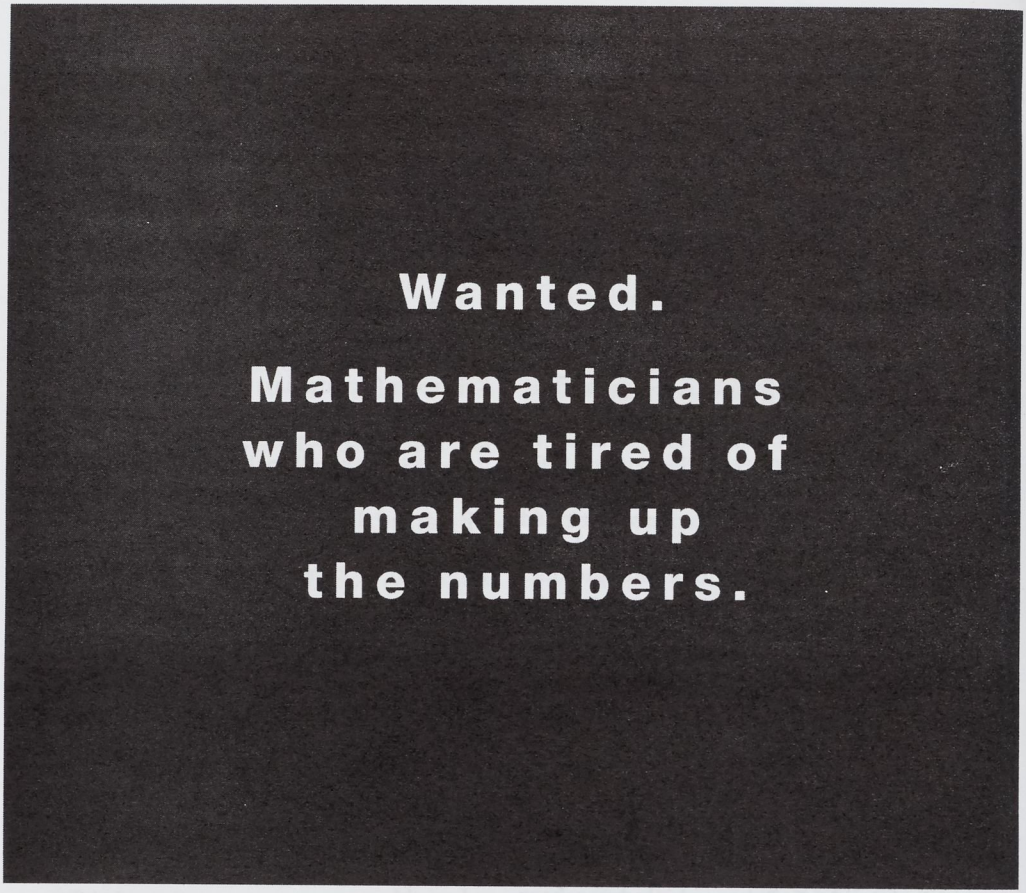
Participants will include: C Athorne, Sir Michael Atiyah, B A Dubrovin, A P Fordy, J P Harnad, J Hurtubise, L Mason, F Nijoff, W M Oxbury, D H Phong, E Previato, S Ramanan, A P Veselov and R Ward.

The workshop will be held during the week following the workshop entitled 'Integrability: The Seiberg - Witten and Whitham equations' whose local organiser is Dr H W Braden. Participants who arrive early can attend both workshops and should contact ICMS as soon as possible.

Further information from Tracey Dart, Executive Director, ICMS, 14 India Street, Edinburgh EH3 6EZ (tel: (0)131 220 1777, fax: (0)131 220 1053, e-mail: icms@maths.ed.ac.uk).

VISIT OF DR V.O. TARASOV

Dr Vitaly Tarasov is a Senior Researcher at St Petersburg Branch of the Steklov Mathematical Institute, Russia. He works in the area of Quantum Groups and the Representation Theory of related algebras. He will visit the University of York for six weeks from 18 October 1998, supported by the LMS and the Royal Society under their fSU schemes. Dr Tarasov will also give lectures at Durham and Leeds on quantum Knizhnik-Zamolodchikov equations and q-hypergeometric integrals. Further details can be obtained from Dr Maxim Nazarov (mln1@york.ac.uk).



Are you getting the degree of job satisfaction you expected when you graduated? The responsibility? The intellectual stimulation? The personal rewards? The buzz? Are you making a real contribution to society beyond paying tax? Teaching needs people who want to use their skills and experience to the full: people with academic ability, a flair for communication and the talent to inspire. In return, it gives what very few careers can: the chance to change hundreds of lives, a unique place in the mind of everyone you influence and job satisfaction that doesn't stop when you retire. We are looking for qualified, motivated applicants with a Mathematics background. You'll be fully involved (and stretched) from the day you start. No fees are payable for the Postgraduate Certificate of Education (PGCE). If you think you have it in you to bring out the best in others, please visit our website at www.teach.org.uk or telephone us on 01245 454 454.

tta Teacher Training Agency

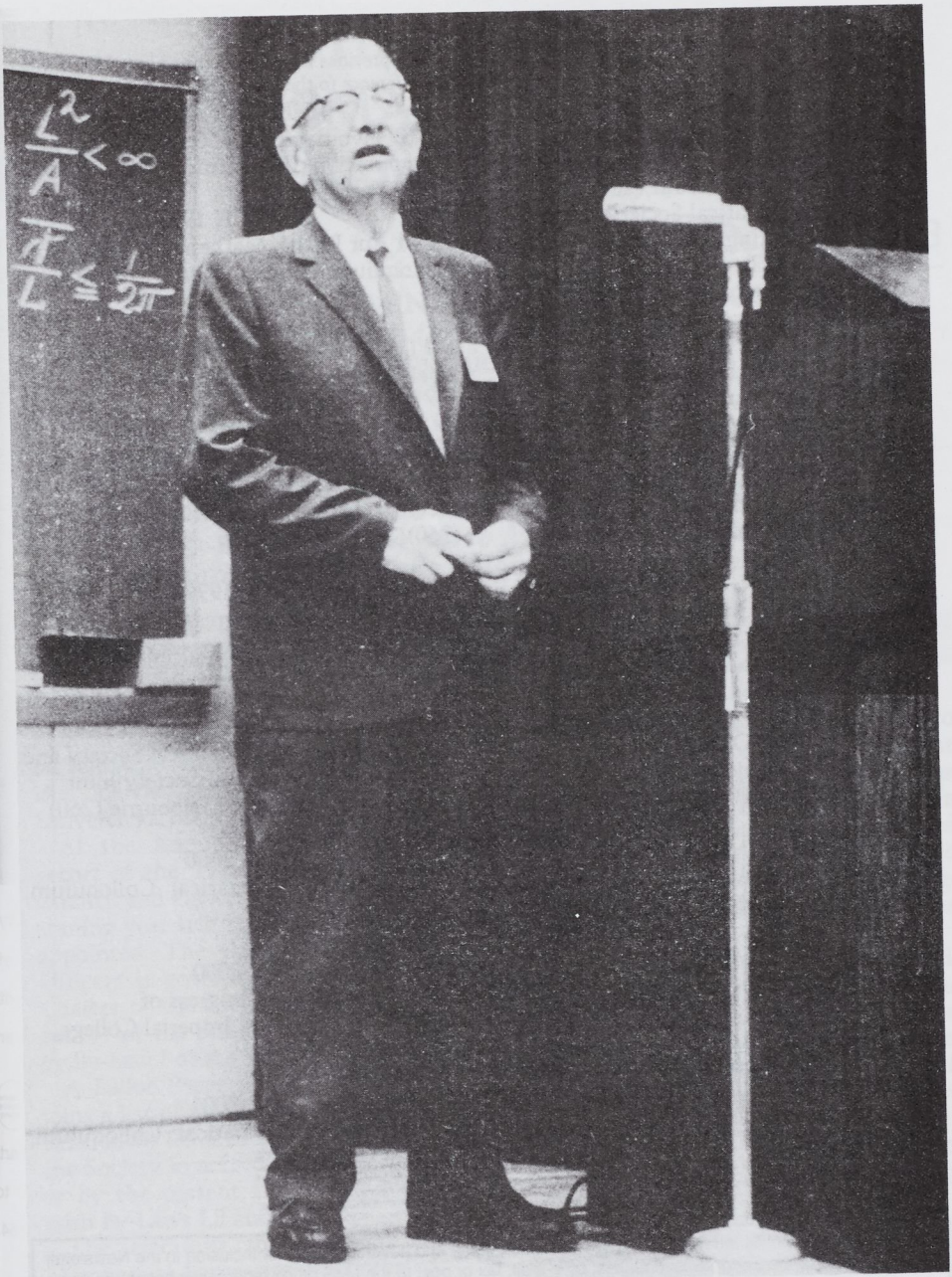
NO-ONE FORGETS A GOOD TEACHER.

To: Teacher Training Agency Communication Centre, FREEPOST ANG2053, Chelmsford, Essex CM1 3ZZ. I would like to learn more about becoming a teacher. Please send me an information pack.

Name: ..... Address: .....

..... Postcode: ..... Telephone: .....

Current Status (e.g. Student/Employed/Unemployed/Returner): ..... Special Teaching Interest (Primary/Secondary/Subject): LMNM0998



G. POLYA
Honorary Member 1956

DIARY

The diary lists Society meetings and other events publicized in previous issues of the Newsletter. For further information, refer to the figure in brackets, which is a cross reference to the LMS Newsletter number.

SEPTEMBER 1998

6-11 British Association for the Advancement of Science Festival, Cardiff (257)

7-8 Irish Mathematical Society Eleventh September Meeting, University of Ulster in Coleraine (262)

7-10 Undergraduate Mathematics Teaching Conference, Sheffield Hallam University (262)

7-11 Infinite Length Modules, University of Bielefeld, Germany (258)

10-11 Meeting to Mark the Retirement of Geoffrey Horrocks, Newcastle upon Tyne University (259)

11 Meeting to Mark the Retirement of Robin Knops, Heriot-Watt University (262)

14 Physical Interpretations of Relativity Theory, Imperial College London (258)

14-18 Integrability: the Seiberg-Witten and Whitham Equations Workshop, Edinburgh (261)

OCTOBER 1998

16-17 Two-day London Mathematical Society Meeting - Harmonic Analysis

NOVEMBER 1998

20 London Mathematical Society Meeting - Annual General Meeting

DECEMBER 1998

16-22 Symmetry and Perturbation Theory Workshop, Rome, Italy (258)

JANUARY 1999

25-27 Phase-Transition Phenomena in Combinatorial Problems EPSRC/LMS MathFit Workshop, Liverpool (261)

FEBRUARY 1999

12-13 Two-day LMS Meetings, Proof and Computation, Leeds University.

MARCH 1999

29 - 1 Apr British Mathematical Colloquium, Southampton University

APRIL 1999

6-9 LMS Invited Lectures - Professor A. Mielke, University of Bath (262)

MAY 1999

14-16 Belgian Mathematical Society and London Mathematical Society Joint Meeting, Université de Bruxelles (260)(261)

JULY 1999

5-9 International Congress of Industrial and Applied Mathematics (ICIAM 99), Edinburgh University (252)

12-16 British Combinatorial Conference, Kent University (254)

12-16 American Mathematical Society and Australian Mathematical Society Joint Meeting, University of Melbourne (260)

APRIL 2000

17-20 British Mathematical Colloquium, Leeds University

JULY 2000

17-22 International Congress of Mathematical Physics, Imperial College, London (257)

APRIL 2001

9-12 British Mathematical Colloquium, Glasgow University

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.

The London Mathematical Society, De Morgan House, 57-58 Russell Square, London WC1B 4HP
Tel: 0171-323 3686, fax: 0171-323 3655, e-mail: lms@lms.ac.uk.
World Wide Web: http://www.lms.ac.uk/

The London Mathematical Society is registered with the Charity Commissioners.

Printed by Armstrong Press Ltd, Southampton 01703 333132