THE LONDON MATHEMATICAL SOCIETY NEWSLETTER

No. 235 **February 1996**

FORTHCOMING SOCIETY MEETINGS

Friday-Saturday 16-17 February 1996, Bath University
Differential Equations
H. Brezis, E.B. Davies, E.H. Lieb,
P.H. Rabinowitz, C.A. Stuart, T. Weidl

Friday-Saturday 10-11 May 1996, University of Glasgow
Joint Meeting with the Edinburgh Mathematical Society
Algebra
K. Goodearl, G. Levitt, A. Lubotsky, C. Maclachlan, J. Rickard

Friday 21 June 1996, Linnean Society, London
C.J. Bushnell, R. Taylor

Friday 18 October 1996, Linnean Society, London
Cayley-Sylvester Centenary Meeting on Invariant Theory

Friday 15 November 1996, Linnean Society, London
Annual General Meeting

ROLPH SCHWARZENBERGER FUND
Warwick University

Rolph Schwarzenberger died, at the age of 56, on 29 February 1992. He will be remembered by LMS members not only for his many and devoted services to the mathematical community, in particular the LMS, but also for his kindness and his wisdom, his great gentleness and generosity to individuals, and his fierce defence of principles.

To mark the first true anniversary of his death, Warwick University has established a small fund in his memory. The Rolph Schwarzenberger Fund will be part of the University's Senior Tutor's Hardship Fund. This fund can be used flexibly and rapidly, with the minimum of bureaucracy, to assist Warwick students with financial difficulties. The Senior Tutor sees most of the cases of hardship in the University and is able to use the fund to make small loans and grants, enabling a speedy response when no other source of help is available. We believe that this is just the sort of activity which would have pleased Rolph.

A leaflet about the fund is enclosed in this newsletter. If you would like to make a donation, please fill in and return the form to: Dr Tom Stone, Senior Tutor, Warwick University, Coventry CV4 7DE; tel. 01203 523761. Dr Stone can also supply additional leaflets and covenant forms and answer queries about the fund. E-mail requests for leaflets and forms can be made to dm@maths.warwick.ac.uk.

VISIT OF PROFESSOR LEONID SHAIKHET

With the grant from the LMS under the fSU Scheme, Professor Leonid Shaikhet from Ukraine is going to visit the Department of Statistics and Modelling Science, University of Strathclyde, Glasgow from 6 - 27 February 1996. He will give talks on 'General method of Lyapunov functionals construction for investigation of stochastic functional differential equations stability' and 'General method of Lyapunov functionals construction for investigation of stochastic difference equations stability'. Moreover, he will possibly visit the Mathematics Institute, University of Warwick in Coventry and give a seminar there. For further information please contact Dr X. Mao, Department of Statistics, University of Strathclyde, Glasgow G1 1XH.

VISIT OF PROFESSOR MICHAEL LAMBROU

Professor Michael Lambrou of the University of Crete will be visiting the United Kingdom in February. His visit is supported by the London Mathematical Society with a Scheme 2 grant. He will give seminars entitled "Strong M-bases and Operator Theory" at the following places and times: University of Leeds, Room G on Tuesday 6 February at 3.30; Imperial College, Room 410 Huxley Building on Thursday 15 February at 3.00; Oxford University, Higman Room of the Mathematical Institute on Tuesday 20 February at 5.00; University of Newcastle in Room M501 on Thursday 22 February at 3.00. Professor Lambrou will also give Colloquium lectures with the title "A survey of ancient, mostly Greek, mathematics" at King's College London in Room 28A on Tuesday 13 February at 4.30 and at the University of Newcastle in Room M421 on Friday 23 February at 4.00. For confirmation and latest details of this visit, contact John Erdos, Department of Mathematics, King's College, Strand, London WC2R 2LS; tel: 0171 873 2225; fax: 0171 873 2017; e-mail: j.erdos@uk.ac.kcl or consult http://www.mth.kcl.ac.uk/mlamb.html on the WWW.

VISIT OF PROFESSOR S.M. NIKOL'SKII

Professor S.M. Nikol'skii (Moscow), member of the Russian Academy of Sciences, will be visiting the UK from 1st to 14th February 1996, under the London Mathematical Society fSU Visitor Scheme. He will be based at the School of Mathematics, University of Wales, Cardiff, and will speak on "Approximations on Manifolds" at the following places: 7 February at the University of Bath, 9 February at the University of Wales, Cardiff, 12 February at the University of Sussex.

VISIT OF DR NURIA FAGELLA

Dr Nuria Fagella of the Universidad Autonoma de Barcelona, who works in Complex Dynamics, will be visiting Britain in February with the support of an LMS Scheme 2 grant. She will be talking at Warwick, Imperial College, London, Liverpool and Manchester, probably on the following dates respectively: Tuesday 6, Friday 9, Tuesday 13 and 4.30 pm on Thursday 15 February. The titles of her talks include "The Parameter Space of the Complex Standard Family", "Homeomorphisms between Limbs of the Mandelbrot Set: surgery" and "Periodic Points of Holomorphic Maps on CP^k". For further information contact: Professor I.N. Baker (i.baker@ic.ac.uk), Dr A.K. Manning (akm@maths.warwick.ac.uk), Dr S.M. Rees (maryrees@liv.ac.uk) or Dr R.M. Wood (reg@ma.man.ac.uk).

STEVEN VAJDA

Steven Vajda, Professor of Operational Research at Birmingham University, 1965-68, and subsequently senior research fellow at Sussex University, died on 10 December aged 94. He was born in Budapest on 20 August 1901.

LONDON MATHEMATICAL SOCIETY TWO-DAY MEETING

FRIDAY 16 & SATURDAY 17 FEBRUARY 1996

UNIVERSITY OF BATH

Differential Equations

FRIDAY

2.05   Opening Session
2.15   H. Brezis (Paris) *Degree Theory and B.M.O.*
3.15   Tea/Coffee
3.50   C.A. Stuart (Lausanne) *Nonlinear Eigenvalue Problems arising in Optics*
5.00   E.B. Davies (London) *Spectral Properties of Fourth Order Elliptic Operators*

SATURDAY

9.15   P.H. Rabinowitz (Madison) *Multibump Solutions of Differential Equations*
10.15   Tea/Coffee
10.50   T. Weidl (Sussex) *On the Discrete Spectrum of Schrödinger Operators Perturbed by Non-regular Potentials with Compact Support*
12.00   E.H. Lieb (Princeton) *Estimating the Eigenvalues of the Magnetic Schrödinger Operator*

All lectures will be held in Building 3 East, Room 2.1

There will be a buffet supper on the Friday evening in Wessex House, University of Bath, at 6.30 pm. The cost will be £9.00 per person, inclusive of wine. Tickets **must** be purchased in advance, by Monday 5 February, by sending a cheque payable to "University of Bath", to Professor J.F. Toland. As the meeting is in term-time, available campus accommodation is very limited. However, there is a large number of inexpensive B&B establishments near to the University. Lists and campus maps will be sent to all wishing to attend.

For further information contact: Professor J.F. Toland, School of Mathematical Sciences, University of Bath, Bath BA2 7AY, e-mail: jft@maths.bath.ac.uk, fax: 01225-826492; tel: 01225-826188.

EUROPEAN CONGRESS OF MATHEMATICS

The 2nd European Congress of Mathematics will be held in Budapest, Hungary, 21-27 July 1996. The Congress is being organized by the János Bolya Mathematical Society and will be held under the auspices of the European Mathematical Society.

The scientific programme will include 50-minute plenary lectures given by the following speakers: N. Alon, G. Ben Arous, D. McDuff, B. Durbovin, J. Kollár, J. Laskar, A. Merkurev, V. Milman, S. Müller, J.-P. Serre. There will be parallel sessions of 45-minute talks, round tables and poster sessions. There will also be a supporting programme of social and cultural events.

Poster proposals and early registrations are to be received by 15 March 1996. Hotel reservations are guaranteed on requests received by 1 June 1996. Full information is contained in the Second Announcement of the Congress, copies of which are available from the LMS Office.

NONLINEARITY '96

An informal one-day meeting to present new developments in Nonlinear Dynamics and to exchange ideas will be held at the Institute of Physics, 76-78 Portland Place, London W1N 4AA from 9.30 am - 5.30 pm on Sunday 24 March 1996, sponsored by the London Mathematical Society and the Institute of Physics. Speakers will include: J. Gollub (Haverford, USA), E. Knobloch (Berkeley, USA), B. Branner (Lyngby, Denmark), R. Krasny (Michigan, USA), V. Lazutkin (St. Petersburg, Russia), E. Bogomolny* (Orsay, France), J. Sanz-Serna* (Valladolid, Spain) (* to be confirmed). Organisers: R.S. MacKay (Cambridge), I. Procaccia (Weizmann, Israel).

All are welcome to attend, but seating is limited to 60. There will be a small registration fee to cover the cost of refreshments. If you are likely to participate, please send an e-mail to this effect (giving probability of attendance if not sure) to Nonlinearity96@damtp.cam. ac.uk, by 21 February 1996. We do not promise to reply to any individual questions, but expect to e- mail further details to all people thus registered, shortly after 21 February. Robert S. MacKay, DAMTP, Silver St, Cambridge CB3 9EW; R.S.MacKay@damtp.cam. ac.uk; tel: 01223-339733; fax: 01223-337918.

VISIT OF PIERRE MOUSSA

Pierre Moussa, of the Service de Physique Theorique, CEA, Saclay (France) will be visiting the UK from 18 to 22 March 1996 with LMS Scheme 2 support. He will speak on "The Brjuno functions and their regularity properties" at Queen Mary & Westfield College, London on 19 March, Cambridge (DAMTP) on 20 March and Loughborough on 22 March. For further details contact Dr S. Bullett at Queen Mary & Westfield College.

DEPARTMENTAL NEWS

Birmingham University Andrew King took up a Chair of Applied Mathematics from 1 August 1995 in the School of Mathematics and Statistics.

University of Wales College of Cardiff Professor C. Hooley, FRS, ceased to be Head of the School of Mathematics, Cardiff, on 30 September 1995 on reaching the usual retiring age but will remain in the School as a Distinguished Research Professor. Professor J.D. Griffiths is the new Head of the School.

Ulster University Dr S.K. Houston, Senior Lecturer in the School of Computing and Mathematics, has been promoted to a Professorship with effect from January 1996. His title is Professor of Mathematical Studies.

UMIST Applied Mathematics: D.J. Bell has been promoted to a professorship, D.S. Broomhead and J.W. Dold have been appointed to professorships, and H.M. Byrne, J.P. Huke and M.J. Nicol have been appointed to lectureships. Pure Mathematics: L.A. Walker has been appointed to a temporary lectureship and A.V. Borovik has been promoted to a readership.

LONDON MATHEMATICAL SOCIETY
INVITED LECTURE SERIES 1996
Frederick Almgren, Princeton University
Geometric Measure Theory and the
Calculus of Variations

A series of 10 lectures on the application of methods from geometric measure theory to the calculus of variations will be given by Frederick Almgren during the week 15 - 19 April 1996 at the Department of Mathematics, University College London.

The series will present an introduction to new techniques that have recently been developed to answer important questions in the theory of minimal surfaces. The lectures will none-the-less be accessible to research students in nearby fields; preliminary reading on the level of, e.g., F. Morgan's Geometric Measure Theory (Academic Press, Boston, MA, 1988) is highly recommended.

Tentative programme

- The shape of soap bubbles and crystals: Having fun with the calculus of variations and some important problems.
- Basics of geometric measure theory: Hausdorff and integral geometric measure, rectifiable sets, area and co-area formulas, structure theorem for sets of finite Hausdorff measure.
- Existence of energy minimizing surfaces: Currents, the deformation theorem and isoperimetric inequalities, multi-functions and approximation, the compactness theorem, parametric integrals and energy minimizing surfaces.
- Regularity theorems: (F,e,d) minimal sets, Dirichlet energy minimizing multi-functions, mass minimizing integral currents.
- Curvature driven evolutions and dendritic crystal growth - the variational approach.
- Calculus of variations in the large: homotopy groups of the integral cycle groups, integral varifolds and the existence of minimal surfaces on manifolds.
- Calibrations and calculations of minimal surfaces: Holomorphic varieties as mass minimizing integral currents, max flow/ min cut algorithms for computing area minimizing surfaces.

Accommodation Accommodation, under £20 (single) room/night, is reserved in Carr Saunders Hall from 14 to 19 April 1966. If you wish to use this accommodation, please let the organizers know as soon as possible. We will try to handle late requests as well, but success is less likely after the middle of January. Close to the College there is a large number of (more expensive) bed and breakfast hotels where one should be able to find accommodation even on the day of arrival.

Registration Participants are asked to register (by letter or e-mail) by the end of January. There is no registration fee. Late registrations will be accepted, but printed materials may not be available for those who register late.

Contact address David Preiss, Department of Mathematics, University College London, Gower Street, London WC1E 6BT; e-mail: dp@math.ucl.ac.uk

EUROCONFERENCES IN MATHEMATICS ON CRETE

The Department of Mathematics of the University of Crete announces the 1996 conferences of the series Euroconferences in Mathematics on Crete, sponsored by the Human Capital and Mobility Programme of the Commission of the European Union.

Different Approaches to Population Dynamics 30 June - 6 July 1996. Organizer: P. Jagers (Gothenburg, Sweden). Main speakers: O. Dickmann (Amsterdam, Holland), M. Gyllenberg (Turku, Finland), P. Jagers (Gothenburg, Sweden), Z. Taib (Gothenburg, Sweden), S. Tavare (Zürich, Switzerland/Los Angeles, USA).

Geometric Group Theory 25-31 August 1996. Organizer: D.B.A. Epstein (Warwick, UK). Main speakers: M. Bestvina (Utah, USA), M. Gromov (IHES, Bures-sur-Yvette, France), E. Rips (Jerusalem, Israel), Z. Sela (Jerusalem, Israel), K. Vogtmann (Cornell, USA).

The conferences will take place at the Anogia Academic Village, a conference centre located at the traditional Cretan village of Anogia on the slopes of the mountain Ida. Anogia is located at an elevation of 750 m, about 45 minutes by car from Heraklion, the largest city of Crete, and about half an hour from the closest coast. The living expenses (accommodation plus meals) per day for a person are estimated at about 30 ECUs in a double room or 40 ECUs in a single room.

The Human Capital and Mobility Programme financially supports young researchers from the countries of the European Economic Area to enable them to attend the conferences. For information please contact the local co-ordinator of the conference series indicated below. It is expected that financial support can be extended to young researchers from some countries of Central and Eastern Europe.

The topics of the conferences, which will follow in the next years, will be decided by the international scientific committee consisting of: H. Abels (Bielefeld, Germany), H. Bauer (Erlangen, Germany), C. Dafermos (Brown University, USA), O. Kegel (Freiburg, Germany), S. Papadopoulou (Crete, Greece), V. Thomee (Göteborg, Sweden), A. Wilkie (Oxford, UK). The next meeting of the committee will be in February 1996. Suggestions for topics for future conferences should be sent to the local co-ordinator of the series. For additional information please contact the local co-ordinator: Susanna Papadopoulou, Department of Mathematics, University of Crete, Heraklion, Crete, Greece; fax: 81-234516; e-mail: souzana@talos.cc.uch.gr or, for the 1996 conferences: P. Jager, Department of Mathematics, Chalmers University of Technology and Gothenburg University, S-41296 Göteborg, Sweden; e-mail: jagers@math.chalmers.se or D.B.A. Epstein, Mathematics Institute, University of Warwick, Coventry C V4 7AL, UK; e-mail: dbae@maths.warwick.ac.uk.

19th INTERNATIONAL CONGRESS ON THEORETICAL AND APPLIED MECHANICS

The 19th International Congress on Theoretical and Applied Mechanics is being held in Kyoto, Japan, 25 to 31 August 1996. The Royal Society has set aside limited funds to assist with the expenses of scientists hoping to attend the above Congress. Applications can be considered from non-Government scientists of PhD status, normally resident in the UK, and application forms, which should be returned by **Monday 15 April 1996**, can be obtained from: Miss J.A. Small, The Royal Society, 6 Carlton House Terrace, London SW1Y 5AG; tel. 0171-839 5561, ext. 2541. Potential applicants should note that grants are unlikely to meet their costs in full.

BIRTHDAY GREETING

Congratulations to Sir Edward Wright, formerly Vice-Chancellor of the University of Aberdeen and a member of the Society since 1929, who will celebrate his 90th birthday on 13 February.

Classics in Mathematics
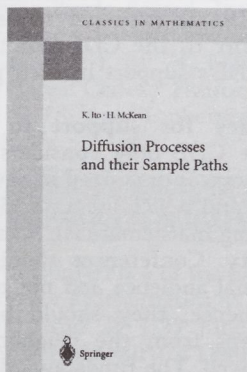
Springer-Verlag began publishing books in higher mathematics in 1920, when the series *Grundlehren der mathematischen Wissenschaften,* initially conceived as a series of advanced textbooks, was founded by Richard Courant. A few years later, a new series *Ergebnisse der Mathematik und ihrer Grenzgebiete,* survey reports of recent mathematical research, was added.

Of over 400 books published in these series, many have become recognized classics and remain standard references for their subject.

Springer is reissuing a selected few of these highly successful books in a new, inexpensive softcover edition to make them easily accessible to younger generations of students and researchers.

K. Ito, H. McKean
Diffusion Processes and their Sample Paths

1996. XX, 600 pages.
Softcover £ 25.50
ISBN 3-540-60629-7

With its republication in the *Classics in Mathematics* it is hoped that a new generation will be able to enjoy Ito and McKean's "classic" text.

H. Federer
Geometric Measure Theory

1996. XVIII, 676 pages.
Softcover £ 25.50
ISBN 3-540-60656-4

"... Federer's timely and beautiful book indeed fills the need for a comprehensive treatise on geometric measure theory, and his detailed exposition leads from the foundations of the theory to the most recent discoveries...
This book is a major treatise in mathematics and is essential in the working library of the modern analyst."
Bulletin of the London Mathematical Society

J. Lindenstrauss, L. Tzafriri
Classical Banach Spaces I and II
Sequence Spaces; Function Spaces

1996. XIV, 500 pages.
Softcover £ 25.50
ISBN 3-540-60628-9

"... The geometry of Banach lattices is a rich, beautiful, ... and rewarding subject. The proof is in the reading and perusing of the masterpiece."
Zentralblatt für Mathematik

Springer

Information concerning CDE programmes The CDE (Commission on Development and Exchanges of the International Mathematical Union) presently runs two programmes aiming at supporting mathematics and mathematicians in Developing Countries. One programme applies to individuals in support of research visits (by means of travel grants to partially cover the travel expenses); the other programme gives partial support to conferences organized by developing countries.

General policy for applications made by individuals The CDE only considers applications for support to research visits made by individual mathematicians with a PhD or equivalent; the host laboratory should explicitly commit itself to supporting the local expenses. Mathematicians from advanced countries are only eligible to CDE support for visits to mathematical centres in developing countries. The research visits should have a duration which allows profitable contacts and scientific cooperation (one month is a minimum). Due to the limited funds at its disposal, the CDE has to make some a priori choices. The CDE does not support training visits (even for PhD programmes). The CDE does not award travel grants to attend conferences (even for invited speakers). The CDE does not grant travel support when local support is sufficient to cover both local and travel expenses (eg visiting professorship positions for more than 6 months). The CDE only considers applications of mathematicians working in the core of mathematics.

Individuals should apply at least 6 months in advance to CDE c/o The Secretary, at the address below (there is no specific application form). The application should contain:

- bio-data including a list of publications,
- a research programme with details on expected interaction with local mathematicians, PhD students, etc,
- an invitation letter from the host institution mentioning explicitly how local expenses will be supported (by host institution, by a fellowship, etc).

Individuals who receive partial support from the CDE are expected to send a scientific report to the CDE and to acknowledge CDE's support in their publications.

General policy for support to conferences The CDE only considers supporting conferences organized in developing countries and which are a priori open to any working mathematician whatever his nationality. Conferences should address a regional audience and not only a national audience; they should benefit mathematicians from the neighbouring countries as well. The funds awarded by the CDE are for academic use only (travel or living expenses of invited speakers or those of participants coming from developing countries). The CDE only considers conferences at the research level and cannot support (due to lack of funds) schools which are mainly concerned with training.

Conference organizers should apply at least 9 months in advance to CDE c/o The Secretary, at the address below. The application should give full details concerning the conference:

- a detailed scientific programme (including organization of the conference: plenary lectures, parallel sessions, etc),
- a list of invited speakers (specifically those who have accepted to attend the conference: name, university, country),
- details on the relevance of the conference for neighbouring countries and on the participation of the mathematicians thereof,
- a list of supporting organizations (with amount of support),
- the total budget of the conference,
- the amount of support expected from the CDE and a statement on intended use of this support.

The CDE should not be expected to provide the main share of financial support; support to conferences when

granted by the CDE is on average of the order of $2,000 (two thousand US dollars). In case support is granted, a scientific and financial report will be sent to CDE after the conference.

Applications to CDE programmes are to be made to: CDE c/o The Secretary, Professor Pierre Bérard, Institut Fourier, Laboratoire de Mathématiques, Université Grenoble 1, BP 74, F-38402 St Martin d'Héres Cedex, France; Fax + 33-76 51 44 78; e-mail: pberard@fourier.ujf-grenoble.fr.

EUROPEAN CONSORTIUM FOR MATHEMATICS IN INDUSTRY

The 9th Conference of the European Consortium for Mathematics in Industry will be held from 25 - 29 June 1996 at the Technical University of Denmark, Copenhagen. ECMI 96 will provide a forum for the presentation of work on the application of mathematics to industrial problems. Such work is carried out by university mathematicians studying industry-related problems, by those based in industry who use mathematics to solve problems, and by collaboration between those in universities and industry. At the conference, academics and industrialists can meet and discuss current problems of mutual interest. The conference will also give students a first-hand impression of the challenges and opportunities for mathematicians in European industry. In turn, industrialists can meet talented students educated in practical applications of mathematics and in a European spirit.

The scientific programme focuses on seven main topics. Each topic is assigned a special session consisting of one invited lecture, four selected lectures and contributed papers. The Hansjörg Wacker Memorial Prize will be awarded for the best student thesis on industrial mathematics. The conference will feature the first Alan Tayler Memorial Lecture. The topics are *Environmental Modelling, Mathematics for Railways Systems, Mathematics in Food and Brewing Industry, Mathematics of Telecommunication, Image Processing in Industry, Hydrodynamics and Ship Industry* and *Mathematics for Oil Industry*.

Further information on the conference and copies of announcements are available electronically on the World Wide Web and by anonymous ftp: hhtp://www.mat.dtu.dk /ECMI96 and ftp://ftp.mat.dtu.dk/pub/ECMI96.

COPYWATCH

In November the Copyright Licensing Agency launched a campaign called "Copywatch" to persuade organizations to take out copyright licences. The agency points out that unauthorized photocopying of publications may be a crime and urges businesses, government departments, schools, universities, etc., to take out photocopying licences. Further information can be obtained by calling 0171 436 4242.

RECURSIONS, PROOFS AND DATA TYPES

A London Mathematical Society, Computer Science Committee, Math for IT Instructional Workshop on "Recursions, Proofs and Data Types" will be held from 16 - 17 March 1996 at Fairbairn House, Leeds University. The lecturers will be: H. Simmons (Manchester), J.V. Tucker (Swansea), S.S. Wainer (Leeds). This residential workshop will be modelled closely on the earlier, successful SERC LOGFIT Weekends at Leeds. It will be aimed at the postgraduate level, but will be suitable for all researchers with theoretical interests in Computer Science and Logic. Six lectures and supporting tutorials will cover the topics: recursion and induction, their computational and proof theoretic complexity, program transformation and verification, recursion on abstract data types, and parallel deterministic systems. There will be 28 places for resident participants and the full-board cost for the entire weekend (arrival 11.00 Saturday, departure 14.00 Sunday) will be around £75. Accredited postgraduate students will be subsidized. For further information contact: Mrs Pat Boyes, School of Mathematics, The University, Leeds LS2 9JT, e-mail: P.A.G.Boyes@leeds.ac.uk.

REVIEW OF 1995
EPSRC Mathematics Programme

Following the White Paper, EPSRC was created in April 1994 and a revised structure based on 14 programmes, each with a manager, came into being in November 1994. I was appointed the first Programme Manager of Mathematics. The processing of responsive mode grants under the new system started on 2 January 1995. We have a College of 110 members nominated by the mathematics community to advise us, to act as referees, to serve on ad hoc grant and policy panels and to evaluate research carried out on SERC/EPSRC grants. We are very grateful for the support and assistance provided by College members.

The Mathematics Programme has nearly £12M per annum to support research and postgraduate training, with about £6M for support of research and advanced course training and about £5.5M for research grants. These grant funds represent about 60% of the EPSRC grant funds going to mathematics departments. The importance of the Mathematics Programme funding is that it provides the core support for basic mathematics on which other programmes can build. The planning assumptions for the Programme's funding for 1995 are given below.

Planning Assumptions 1995/96	£k
Pure Mathematics including mathematics underpinning IT and communications and mathematical physics	1760
Applied Mathematics and Operational Research	805
Computational Mathematics	400
Applied Nonlinear Mathematics	1000
Statistics including stochastic modelling	1075
Isaac Newton Institute, Cambridge	490
Studentships (Research and Advanced Course)	6187
TOTAL	11717

The bulk of the grants programme operates in the responsive mode but there is one (lightly) managed programme - applied nonlinear mathematics (ANM) and a new biased responsive mode programme in stochastic modelling in science and technology.

Business Plan An early ad hoc panel was established to advise on the balance of the inherited programme of the Mathematics Committee. This panel, drawn from academic and industrial college members, helped me to formulate a business plan for 1995. This was considered by the Technical Opportunities Panel (TOP) and the User Panel (UP) and then by Council. A similar panel was convened in July 1995. The 1996 Business plan was particularly well received by all three bodies. It was recognised that there was a case for some expansion of research studentships in Mathematics.

Foresight Earlier this year the results of the Foresight Exercise were published and the Business Plan Panel was used to advise on the extent to which the Mathematics Programme should be modified to take account of the Foresight Exercise. There was agreement that Mathematics had a major underpinning role across many of the generic priorities identified by the Foresight Steering Group. The one major horizontal activity identified in Foresight where mathematics must play a significant part if not the leading role, is mathematical modelling and simulation, albeit with the involvement of a number of other EPSRC programmes. Other key priority areas where mathematics should have an important if limited role are security and privacy technology and quantitative finance.

Grant Assessment During 1995, five ad hoc Panels drawn almost exclusively from the College have been used to peer review responsive grants including statistics. The Applied Nonlinear Mathematics Initiative has had two calls for proposals and these were considered separately from the responsive mode applications taking into account the extent of meaningful collaboration between mathematicians and other scientists and engineers. (Information about the calls for this academic year have been sent to those on the ANM mailing list.) Whilst demand for responsive grants is substantially below that for earlier years, the success rate is relatively high.

Other Activities Ad hoc Panels were established to advise on the allocation of both advanced course and research (including earmarked and CASE) studentships for 1995 and the mechanics for future years. There have also been a number of ad hoc Panels to advise on the allocation of advanced and senior fellowships. Early in 1995 Professor T. Pedley FRS (Leeds University) was awarded a senior fellowship. Finally an ad hoc Policy Panel has considered the balance of funding within pure mathematics.

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Geoff Richards
Programme Manager

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The above article appeared in Issue 2 (December 1995) of *Mathematics News*, which is the newsletter of the EPSRC Mathematics Programme, and is reprinted with Dr Richards' permission. The newsletter contains more information on several matters mentioned in the article. *Mathematical News* has been circulated to all departments; anyone who wishes to be put on the mailing list should contact: EPSRC, Polaris House, North Star Avenue, Swindon SN2 1ET.

A VISIT TO RUSSIA

It all went really well. Not speaking any Russian, I was naturally apprehensive, but there were no great problems. I first flew to St Petersburg via Helsinki. I spent the afternoon and evening as the guest of Dr Stanislav Kublanovskii, a businessman and a mathematician, who financed the International Semigroups Conference in St Petersburg during the final two weeks of my stay. I flew on to Ekatherinburg at midnight, to be met by two of my colleagues, Volkov and Repnitskii. It was tiring, of course, these things always are, but I was well taken care of throughout my five-week stay. I lived in the apartment of Volkov's mother.

The Ural State University did pay me an allowance of 14,000 roubles a day, as promised. This is less than two pounds sterling, but it was still useful. Food prices are similar to England, but transport and utilities are much cheaper, and so the cost of living is lower than in Britain.

Apart from the usual series of seminars, the thing they most wanted from me was my ability to speak English. I was asked to check English translations of books and papers, and the graduate students practised with me frequently, as they were training to act as guides for foreigners during the St Petersburg Conference. They also wanted me to draft and check the final conference announcements so as not to betray Russian origin. Everyone was terribly anxious that nothing untoward should happen to me, or any other westerner. They were reluctant to let me loose in the city, but I did manage to escape on occasion. I was constantly taken from one show (ballet, opera, circus, etc) to another, leaving me with many memorable evenings.

During my time in Ekatherinburg I worked mainly with Dr Misha Volkov, and a graduate student, Alexey Vernitskii. They had written a joint paper which generalizes a particular theorem of mine. The most tangible result so far of my trip is that Vernitskii has now come to Essex as my PhD student. He arrived in early November, Essex University having granted him a Teaching Fellowship.

On June 18th we all travelled from Ekatherinburg to St Petersburg by train (40 hours!). The St Petersburg Conference was very successful, and the city during this time of the White Nights is stunning. Some of us were invited out to Kublanovskii's dasha outside St Petersburg on the Gulf of Finland. It was quite something (especially for a former Australian), to take a midnight walk along the beach in bright twilight. Indeed the sun is very reluctant to set at all at the end of June, but neither does it ever rise too high in the sky, so that even during a hot summer afternoon the long shadows are always with you as a reminder of the Winter to come. At least that is how it seemed to me.

The only disappointing aspect of the conference was the lack of support from westerners who made up only around 30 of the 140 or so conference participants. This was a reasonable turnout I suppose, although some of them were expatriate Russians. Only a handful of Americans came. The meeting went well though, and there will be a Proceedings in due course. I do believe that some of my western colleagues now regret, a little at least, missing the opportunity to see St Petersburg.

Peter Higgins
Essex University

The above report was submitted by Dr Higgins on his visit to Russia supported by a grant from the Society's fSU Scheme.

MATHEMATICAL METHODS IN TELEPHONE ROUTING
The Ring Loading Problem

Professor Peter Winkley, from AT&T Bell Laboratories, will be visiting the London School of Economics between January and April 1996, as a Visiting Centennial Professor in the Mathematics Department. He will give a public lecture at 5.30 pm on Tuesday 27 February, in the LSE Old Theatre entitled 'Mathematical Methods in Telephone Routing: The Ring Loading Problem'. Further information is available from the Mathematics Department, tel: 0171 955 7732. All are welcome to attend.

PHYSICAL INTERPRETATIONS OF RELATIVITY THEORY

The fifth "Physical Interpretations of Relativity Theory Meeting" is scheduled to take place in the Civil Engineering Lecture Theatre (Room 201) of Imperial College, London, between Friday 6th and Monday 9th September 1996. The meeting will open at 2.00 pm on Friday and close at 1.00 pm on Monday, though if the submission of papers justifies extending the programme, it will be lengthened to include the afternoon of Monday the 9th of September and close at 6.00 pm. The meeting is sponsored by the British Society for Philosophy of Science.

The programme will be made up mainly of papers allotted 45 minutes for presentation and discussion, though allowance is made for longer and shorter contributions. An author may include a paper in the precirculated Proceedings and present a brief summary of 15 or 20 minutes to the meeting. A speaker may prefer to use the allotted time in the programme to take part in a question and answer session concerning his work, rather than reading a paper in full. Papers submitted and accepted for inclusion in the programme before 12th July 1996 will be reproduced in Proceedings circulated before the meeting to all registered delegates. Abstracts will be put in the precirculated Proceedings in place of full texts not submitted by the 12th July 1996. Abstracts and texts of papers received after 12th July 1996, which are included in the programme of papers, will be contained in a volume of late papers circulated after the meeting.

The conference programme will cover themes which include the following general sections. Submission of papers in fields different from those listed below is invited, as the list is not exclusive:

- Cosmology, Gravitation and Space Time Structure
- Time, Reference Frames and the Fundamentals of Relativity
- Nature and Models of the Physical Vacuum
- Formal Structures, Physical Interpretations and Philosophy of Physics
- Epistemology, Physical Measurement and the Interpretation of Formal Structures
- Experimental Aspects of Relativity
- The Poincaré-Lorentz and the Einstein-Minkowski Expositions of the Relativity Principle
- Relativistic Ether Theory: Ether Geometrised, Dirac's Ether and Ether Models
- The Vortex-Sponge: Analogues of Chaos and Quantum-Mechanical Phenomena

Papers which review a broad field, and which relate to areas having a bearing on the conference theme are particularly sought for placement in the programme, and speakers are encouraged to relate their papers to other papers in the programme and precirculated Proceedings. Brochures stating objectives of the meeting, and giving instructions about submission of abstracts and papers; registration fees; accommodation; etc., and Registration Forms, are obtainable in any number from: Dr M.C. Duffy, School of Engineering & Advanced Technology, University of Sunderland, Chester Road, Sunderland SR1 3SD.

MATHS & STATS
A Guide to Software for Teaching

Published in May 1995, the third edition of this guide to software for teaching provides a comprehensive listing of packages with details of suppliers, prices, machines supported, references to reviews and lists of departments using the software. The packages are listed under categories useful to the teacher, and each chapter has an introduction drawing attention to the issue raised in that category, and making recommendations where appropriate. Free copies of the guide have already been sent to Departments of Mathematics and Statistics in the UK. Further copies can be purchased at £5 each from: Pam Bishop, CTI Mathematics, Centre for Computer-Based Learning, The University of Birmingham, Birmingham B15 2TT. Cheques should be made payable to the University of Birmingham.

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Lectureship in Mathematics

Department of Mathematics
School of Mathematical & Information Sciences

Vacancy UAC.695

The Department has particular strength in algebra, combinatorics, complex analysis, differential equations and mathematical modelling, functional analysis and operator theory, numerical analysis, and topology. Within the department are two units which operate with a certain degree of autonomy: the Applied and Computational Mathematics Unit and the Mathematics Educational Unit.

Applicants must have a Doctorate or equivalent and should have a proven record in research and teaching in some branch of algebra, logic or discrete mathematics. Applications are particularly welcome from candidates with computational experience and/or expertise in fields closely related to the research interests of existing staff in this area. These interests include graph theory, group theory, modular representation theory, non-associative algebras, and set theory.

Commencing salary per annum will be established within the range NZ$42,500 - NZ$51,500.

Further information, Conditions of Appointment and Method of Application should be obtained from Appointments (44650), Association of Commonwealth Universities, 36 Gordon Square, London WC1H 0PF (tel. 0171 387 8572 ext. 206; fax 0171 813 3055; email appts@acu.ac.uk); or from the Academic Appointments Office, University of Auckland, Private Bag 92019, Auckland, New Zealand (tel. [64 9] 373 7599 Extn. 5097; fax [64 9] 373 7023). Three copies of applications should be forwarded to reach the Registrar by 13 May 1996.

Please quote Vacancy Number UAC.695 in all correspondence.

W B NICOLL, REGISTRAR

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The University has an equal opportunities policy and welcomes applications from all qualified persons

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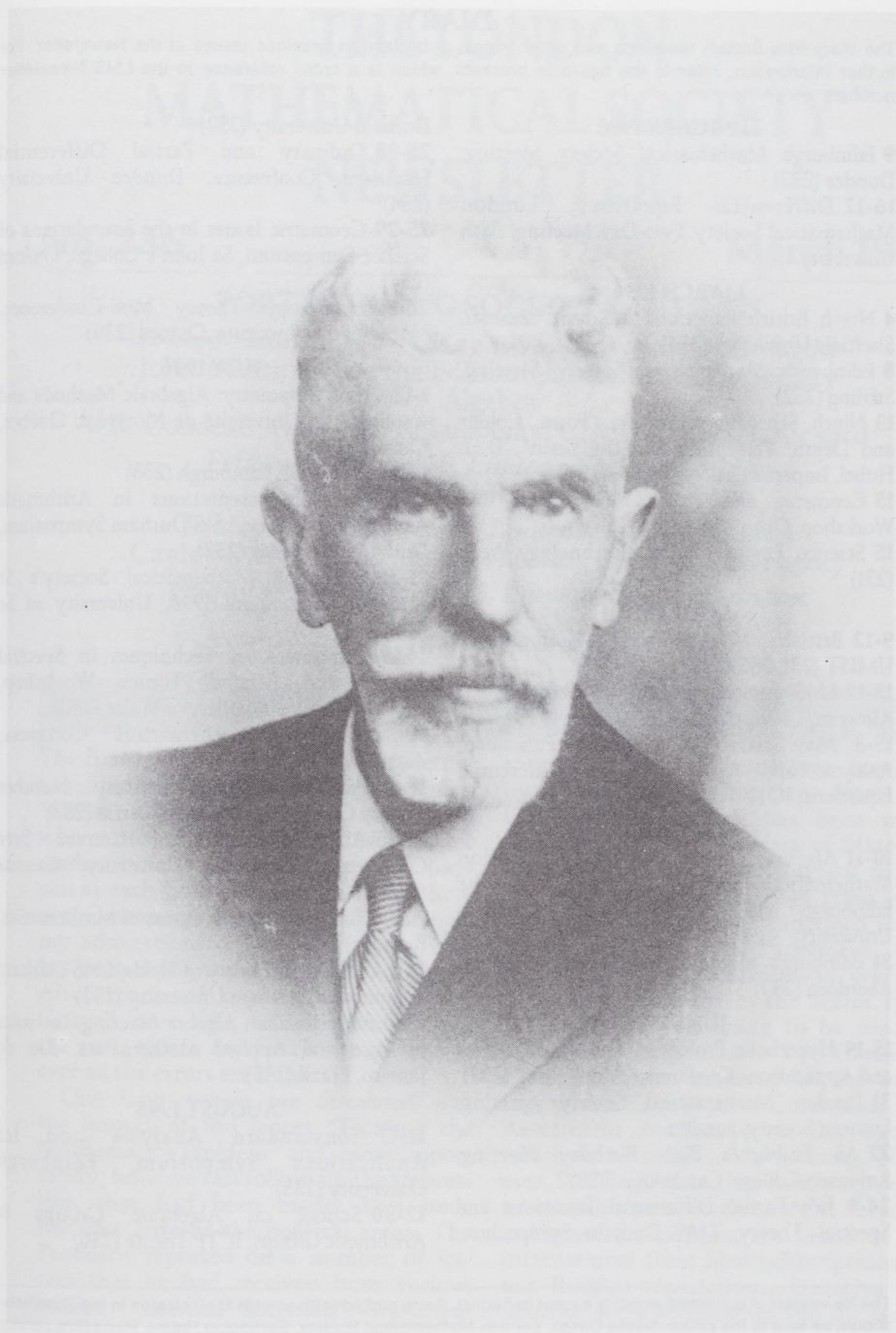
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Honorary Member 1907

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.

FEBRUARY 1996

9 Edinburgh Mathematical Society Meeting, Dundee (232)

16-17 Differential Equations, London Mathematical Society Two-Day Meeting, Bath University

MARCH 1996

4 North British Functional Analysis Seminar, Sheffield University (234)

8 Edinburgh Mathematical Society Meeting, Stirling (232)

13 Ninth Schrödinger Lecture "Form, Colour and Depth: Perception and the Brain", D.H. Hubel, Imperial College, London (233)

15 Geometry and Physics Conference and Workshop, Open University (234)

15 Science, Engineering and Technology Week (231)

APRIL 1996

9-12 British Mathematical Colloquium, UMIST (231, 233 & 234)

15-19 LMS Invited Lectures - Professor F.J. Almgren, University College London (228)

15-3 May School on Nonlinear Functional Analysis and Applications to Differential Equations, ICTP Trieste (230)

MAY 1996

10-11 Algebra, Joint Two-Day London Mathematical Society Meeting with the Edinburgh Mathematical Society, Glasgow University

31 Edinburgh Mathematical Society Meeting, Aberdeen (232)

JUNE 1996

15-19 Hyperbolic Problems, Theory, Numerics and Applications Conference, Hong Kong (233)

21 London Mathematical Society Meeting, Linnean Society, London

22 Ali Fröhlich's 80th Birthday Meeting, Robinson College, Cambridge (230)

24-4 July Partial Differential Equations and Spectral Theory, LMS Durham Symposium, Durham University (232)

25-28 Ordinary and Partial Differential Equations Conference, Dundee University (234)

25-29 Geometric Issues in the Foundations of Science Symposium, St John's College, Oxford (234)

26-28 Homotopy Theory Mini-Conference, Mathematical Institute, Oxford (230)

JULY 1996

1-12 Graph Symmetry: Algebraic Methods and Applications, Université de Montréal, Québec, Canada (233)

1-13 NATO ASI, Edinburgh (233)

8-19 Galois Representations in Arithmetic Algebraic Geometry, LMS Durham Symposium, Durham University (232)

13-20 Edinburgh Mathematical Society's St Andrews Colloquium 1996, University of St Andrews (233)

14-19 Computational Techniques in Spectral Theory and Related Topics Workshop, Gregynog Hall, University of Wales (230)

18-20 Croatian Mathematical Congress, Zagreb, Croatia (233)

18-20 Analytic and Elementary Number Theory Conference, Vienna, Austria (233)

21-25 Affine Geometry of Convex Sets Conference, Dalhousie University, Canada (232)

22-26 2nd European Congress of Mathematics, Budapest, Hungary

21-1 Aug Model Theory of Fields, LMS Durham Symposium, Durham University (232)

30-8 Aug Brazilian Algebra Meeting, Institute of Pure and Applied Mathematics, Rio de Janeiro, Brazil (233)

AUGUST 1996

11-17 Nonstandard Analysis and its Applications Symposium, Edinburgh University (233)

12-30 School on Algebraic Groups & Arithmetic Groups, ICTP Trieste (230)